AMERICAN ACADEMY of DERMATOLOGY | ASSOCIATION

# 2020 AAD ABSTRACTS

## Gross & Microscopic

AAD vmx

VIRTUAL MEETING EXPERIENCE | 2020

# GROSS & MICROSCOPIC FINALISTS

## Facial flushing: the dermatologist reaches for the stethoscope

A 55-year-old female presented with a long history of facial flushing and erythema, previously diagnosed as rosacea and eczema.

On examination she had widespread fixed erythema and telangiectasiae involving the face, chest, abdomen and proximal limbs. The differential diagnoses for her extensive rash and episodic flushing were considered, including mycosis fungoides, telangiectasia macularis eruptiva perstans, medullary thyroid carcinoma, renal cell carcinoma and carcinoid syndrome. In view of the unusual nature of the rash and diagnostic uncertainty, a comprehensive physical examination was performed in clinic and a murmur present throughout the cardiac cycle and prominent JVP were identified.

The patient declined a skin biopsy. However, in view of the findings on cardiac examination, an urgent echocardiogram was requested. This revealed tricuspid and pulmonary valve fibrosis with regurgitation and right-sided atrioventricular dilatation, consistent with carcinoid heart disease. 24 hour urinary 5-HIAA and serum chromogranin A and B were significantly raised. Subsequently, cross-sectional imaging revealed multiple liver lesions and octreotide scanning showed radiotracer accumulation in these areas. Liver biopsy showed a malignant, epithelioid neoplasm, arranged in cords and nests within a fibrotic stroma. Immunohistochemistry for chromogranin, synaptophysin and CD56 were positive confirming a diagnosis of metastatic carcinoid tumour.

In this case, the diagnosis of metastatic carcinoid was expedited by investigation of cardiac findings identified at her initial dermatology consultation. This highlights the importance of physical examination in the presence of unusual cutaneous findings, particularly in the absence of skin histology, and that the stethoscope may be as useful as the dermatoscope for dermatologists!

**References:**


1. Fox, DJ & Khattar, RS (2004). Carcinoid heart disease: presentation, diagnosis and management. Heart. 2004 Oct; 90(10): 1224-8.
2. Bell, HK, et al (2005). Cutaneous manifestations of the malignant carcinoid syndrome. Br J Dermatol. 2005 Jan; 152(1):71-5.



**Primary Author(s):**

Jonathan Kentley, MBBS; Chelsea and Westminster Hospital

**Co-Author(s):**

Sarah Hogan; Catherine Harwood, Barts Health NHS Trust and Queen Mary University of London

## It's a baby...with a tail!

We present the case of a four-month-old male who presents with an asymptomatic congenital pink lesion present on his superior gluteal cleft. An excisional biopsy was performed and showed a papillomatous epidermis with surrounding fibrovascular core containing clusters of hyperplastic eccrine glands consistent with a coccygeal polypoid eccrine nevus. Coccygeal polypoid eccrine nevi (CPEN) are a rare finding and we discuss the gross pathological and microscopic findings of this lesion as well as review differential diagnoses for these types of lesions.

**References:**

1. Park M, Lee E. Two cases of coccygeal polypoid eccrine nevi presenting as skin tags. Ann Dermatol. 2009 Nov; (21)4: 440-442.
3. Charifa A, Ko CJ. Coccygeal polypoid eccrine nevus. Arch pathol lab med. 2019 July;143(7):890-892.

**Primary Author(s):**
Jenna Roach MD, Texas Tech Dermatology

**Co-Author(s):**
Meena Manivannan, MS4, Texas Tech University Health Sciences Center Paul L Foster School of Medicine; Daniel Wallis MD

## A Rare Case of Histiocytoid Sweet's syndrome associated with Coxsackievirus

A 75-year old male presented with fever, joint pain, and sudden onset of diffuse plaques and nodules. He endorsed generalized fatigue and recent exposure to children with viral symptoms. On exam the patient had multiple erythematous plaques and nodules to the trunk and extremities, several of which were pseudovesicular, in addition to tender papules on the palms and soles. Lower labial mucosal erosions were also noted. Biopsy revealed severe papillary edema and a bandlike infiltrate of neutrophils with a predominance of mononuclear cells. Direct immunofluorescence was negative. A complete blood count demonstrated a mild leukocytosis but was otherwise unremarkable. Coxsackie virus B1, B2 and B5 antibodies were positive. CT chest/abdomen/pelvis and hematology work-up revealed no underlying malignancy. The patient responded rapidly to oral prednisone and was transitioned to dapsone without recurrence at six-month follow up.

Our case is a rare example of histiocytoid Sweet's syndrome. To our knowledge, this is the first case of histiocytoid Sweet's syndrome associated with coxsackievirus. While the clinical presentation and treatment does not vary with this histopathological variant, its recognition is crucial given that up to 55% of cases have been associated with hematopoietic disease at the time of or within 6 months of the cutaneous eruption, typically myelogenous leukemia or myelodysplastic syndromes. It is therefore recommended that a complete hematological assessment be performed at diagnosis in addition to continued monitoring of blood cell counts for a minimum of 6 months.

**References:**

1. References for 55% statistic and hematological assessment/follow up timeframe, respectively.
2. Bush JW, Wick MR. Cutaneous histiocytoid Sweet syndrome and its relationship to hematological diseases. J Cutan Pathol. 2016 Apr; 43(4): 394-9. PMID 26694973
3. Ghoufi et al. Histiocytoid Sweet Syndrome is More Frequently Associated with Myelodysplastic Syndromes Than the Classical Neutrophilic Variant: A Comparative Series of 62 Patients. Medicine. 2016 Apr; 95(15). PMID 27082547

**Primary Author(s):**
Aubrey Winn, MD, Naval Medical Center San Diego

**Co-Author(s):**
Alyson Brinker, MD, Naval medical center San Diego; Nicole Meunier, MD, James A. Lovell Federal Health Care Center

## Orf virus: A case of direct transmission from lamb to farmer

A 41-year-old male farmer presented with an erythematous and friable nodule on the left forearm that had been rapidly growing over the past three weeks. He had recently noticed that one of his lambs had a red exophytic tumor located on its ear. Photos of the lamb were provided. A week prior to the appearance of his lesion, the patient had removed an overlying scab from the animal's ear and cleaned its wound.

Shave biopsy demonstrated an ulceration with adjacent epidermal hyperplasia. Within the epidermis, there were keratinocytes containing clear cytoplasm and focal intracytoplasmic inclusions. The dermis had a dense neutrophilic and lymphohistiocytic infiltrate. Special stains for fungi were negative.

Orf, or ecthyma contagiosum, is a zoonotic disease caused by the orf virus, a member of the parapoxvirus genus. Infection is endemic in sheep and goats but has also been observed in cattle and deer. Usually the animal's perioral area is affected. Transmission to humans occurs through contact with infected animals or fomites. Lesions progress through six clinical stages and typically resolve in six weeks with only rare complications reported. Treatment is supportive, although imiquimod has been shown to lead to more rapid resolution. This case emphasizes the importance of conducting a detailed history with particular attention to occupation and animal interaction when considering a diagnosis of orf.

**References:**


1. Caravaglio JV, Khachemoune A. Orf virus infection in humans: A review with a focus on advances in diagnosis and treatment. J Drugs Dermatol. 2017;16(7):684-89.
2. Erbagci Z, Erbagci I, Almila Tuncel A. Rapid improvement of human orf (ecthyma contagiosum) with topical imiquimod cream: report of four complicated cases. J Dermatolog Treat. 2005;16(5-6):353-56.
3. Joseph RH, Haddad FA, Matthews AL, et al. Erythema multiforme after orf virus infection: a report of two cases and literature review. Epidemiol Infect. 2015;143(2):385-90.



**Primary Author(s):**
Madeline Romano, DO, St. Joseph Mercy Health System

**Co-Author(s):**
Brian Schapiro, MD, St Joseph Mercy Hospital, Ann Arbor; Shivani Patel, MD, St. Joseph Mercy Hospital, Department of dermatology


## Whole-body cryotherapy causing cold burn injury: Dangers of a new trend

Whole-body cryotherapy (WBC) is a new treatment that has become popular for purported improvements in muscle recovery, back pain, muscle stiffness, energy, sleep, aging, and skin health among other benefits. This technique was originally employed by patients with multiple sclerosis or rheumatoid arthritis. It has now become more widely available through various medical spas, wellness centers, and cryotherapy facilities, especially for purposes of anti-aging and rejuvenation. Here, we present a case of a 71 year-old male who presented with a cold burn injury. One day prior, he was undergoing WBC at a cryotherapy facility for back pain and arthritis. However, a nozzle likely malfunctioned, and the liquid nitrogen sprayed directly on his back for a prolonged period. He experienced stinging and pain at the site, which subsequently turned red and blistered. He had previously completed four sessions without any adverse events. The patient was treated with topical and intramuscular steroids in addition to silver sulfadiazine. It is important to note that the evidence for WBC is limited. The FDA has yet to approve any WBC chambers and warns about potential harmful effects, such as asphyxiation, frostbite, burns, and eye injury. Additionally, a 2015 Cochrane review found insufficient evidence to determine whether it improved muscle recovery in active young adult males, while there was no data for females or elite athletes. The review also found a lack of evidence on adverse events. A recent evaluation found no evidence to support WBC's claims of being advertised as treatments for anti-aging, skin rejuvenation, and wrinkle reduction. Practitioners should be aware of this emerging trend, the evidence behind it, and any potential adverse events that they may encounter.

**References:**


1. Bleakley CM, Bieuzen F, Davison GW, et al. Whole-body cryotherapy: Empirical evidence and theoretical

perspectives. Open Access J Sports Med. 2014;5:25-36.
2. Costello JT, Baker PR, Minett GM, et al. Cochrane review: Whole-body cryotherapy (extreme cold air exposure) for preventing and treating muscle soreness after exercise in adults. Cochrane Database Syst Rev. 2015;9:CD010789.
3. Cámara-Lemarroy CR, Azpiri-López JR, Vázquez-Díaz LA, et al. Abdominal aortic dissection and cold-intolerance after whole-body cryotherapy: A case report. Clin J Sport Med. 2017;27(5):e67-e68.
4. Greenwald E, Christman M, Penn L, et al. Cold panniculitis: Adverse cutaneous effect of whole-body cryotherapy. JAAD Case Rep. 2018;4(4):344-345.
5. O'Connor M, Wang JV, Saedi N. Whole- and partial-body cryotherapy in aesthetic dermatology: Evaluating a trendy treatment. J Cosmet Dermatol. (Epub Ahead of Print).

**Primary Author(s):**
Jordan V Wang, MD, MBE, MBA, Thomas Jefferson University

**Co-Author(s):**
Mackenzie O'Connor, BS, Thomas Jefferson University; Anthony A Gaspari, MD, Thomas Jefferson University

## Eruptive Tufted Angioma after Chemoradiation

History: A 44-year-old woman with a recent history of metastatic invasive ductal carcinoma of the left breast presented with an enlarging plaque after undergoing ionizing radiation to the left chest/neck/axilla. The plaque appeared similar to an asymptomatic vascular birthmark on her left neck, which previously lightened in color with PDL treatment. After being diagnosed with breast cancer, the patient underwent four cycles of dose-dense adriamycin-cytoxan during which the birthmark resolved completely. During subsequent radiation treatment, patchy streaks of painful erythema erupted and developed into an irregularly shaped, erythematous cobblestoned plaque extending in a serpiginous distribution beyond what had been present since birth. Palpation revealed no thrill or warmth.

Biopsies: Specimen revealed a pan-dermal nodular proliferation of multiple well-formed lobules of vascular channels encircled by crescentic spaces lined with epithelial cells.

Laboratory Data: CBC, fibrinogen, and INR were normal. D-dimer minimally elevated at 0.7 ug/ml

Diagnosis: Tufted angioma

Treatment: Tufted angioma is a benign vascular tumor that typically arises during infancy and shares several features with kaposiform hemangioendothelioma. Kasabach-Merritt phenomenon is a life-threatening consumptive coagulopathy that occurs in ten percent of tufted angiomas. Tufted angiomas can undergo spontaneous or treatment-induced regression, but never resolve completely. In immunosuppressed patients, a rare eruptive form of tufted angiomas has been described. Treatment is individualized based on extent of invasion, symptoms, and presence of Kasabach-Merritt syndrome. The patient was started on aspirin 81 mg daily and topical sirolimus 1 mg/ml solution twice daily, which produced marked improvement in the appearance of the eruption as well as the associated pain.

**References:**

1. Burleigh, A., Kanigsberg, N. & Lam, J. M. Topical rapamycin (sirolimus) for the treatment of uncomplicated tufted angiomas in two children and review of the literature. Pediatr Dermatol 35, e286–e290 (2018).
2. Al-Za'abi, A. M., Ghazarian, D., Greenberg, G. R. & Shaw, J. C. Eruptive tufted angiomas in a patient with Crohn's disease. J. Clin. Pathol. 58, 214–216 (2005).
3. Chu, P. & LeBoit, P. E. An eruptive vascular proliferation resembling acquired tufted angioma in the recipient of a liver transplant. J. Am. Acad. Dermatol. 26, 322–325 (1992).

**Primary Author(s):**
Yi Gao, MD, University of Minnesota

**Co-Author(s):**
Sheilagh Maguiness, University of Minnesota; Danile Miller

## Cutaneous Mucinosis associated with Beckwith-Wiedemann syndrome

Cutaneous mucinosis is the accumulation of mucin or glycosaminoglycans in the skin most commonly associated with connective tissue disorders. The abnormal deposits can be localized or widespread. The etiology of this condition is not well understood. There have been no reports of cutaneous mucinosis associated with genetic overgrowth disorders. Beckwith-Wiedemann syndrome is a rare congenital overgrowth disorder which may asymmetrically affect growth of different body parts. The most common features include macrosomia, macroglossia, midline abdominal wall defects such as omphaloceles, and ear creases or ear pits. There is an increased risk of developing malignancies of the kidney and liver. The most common renal malignancy is Wilms tumor. The most common liver malignancy is hepatoblastoma. Gene defects are usually located on Chromosome 11 and include CDKN1C, H19, IGF2, and KCNQ1OT1. There have been no reported cases of cutaneous mucinosis associated with genetic growth overgrowth disorders. We report a 37-year-old man presented with firm, skin-colored papules and nodules on his back and chest, which had been appearing during the past 7 years. The patient denied any associated pruritus, pain, or ulcerations. Further history revealed he had a repaired omphalocele during childhood. Physical examination revealed an overall large body habitus, with asymmetric overgrowth of the right extremities when com¬pared to the left. In addition, the patient had bilateral anterior linear earlobe creases, preauricular pits, and posterior helical pits. There was no evidence of rheumatologic and endocrine disorders or paraproteinemia.

**References:**


1. Rongioletti F, Rebora A. The new cutaneous mucinoses: A review with an up-to-date classification of cutaneous mucinoses. J Am Acad Dermatol. 1991;24:265–270.
2. Rongioletti F, Rebora A. Updated classification of papular mucinosis, lichen myxedematosus, and scleromyxedema. J Am Acad Dermatol. 2001;44:273–281.
3. Favarato MH, Miranda SS, Caleiro MT, Assad AP, Halpern I, Fuller R. Cutaneous mucinosis in mixed connective tissue disease. An Bras Dermatol. 2013;88:635–638.
4. Lowe L, Rapini RP, Golitz LE, Johnson TM. Papulonodular dermal mucinosis in lupus erythematosus. J Am Acad Dermatol. 1992;27:312–315.
5. Edward M, Fitzgerald L, Thind C, Leman J, Burden AD. Cutaneous mucinosis associated with dermatomyositis and nephrogenic fibrosing dermopathy: Fibroblast hyaluronan synthesis and the effect of patient serum. Br J Dermatol. 2007;156: 473–479.
6. Weksberg R, Shuman C, Beckwith JB. Beckwith-Wiedemann syndrome. Eur J Hum Genet. 2010;18:8–14.
7. Rump P, Zeegers MP, van Essen AJ. Tumor risk in Beckwith-Wiedemann syndrome: A review and meta-analysis. Am J Med Genet A. 2005;136:95–104.
8. Wofford J, Fenves AZ, Jackson JM, Kimball AB, Menter A. The spectrum of nephrocutaneous diseases and associations: Genetic causes of nephrocutaneous disease. J Am Acad Dermatol. 2016;74:231–244.
9. Diaz-Meyer N, Day CD, Khatod K, et al. Silencing of CDKN1C (p57KIP2) is associated with hypomethylation at KvDMR1 in Beckwith-Wiedemann syndrome. J Med Genet. 2003;40: 797–801.
10. Xu WW, Li B, Guan XY, et al. Cancer cell-secreted IGF2 instigates fibroblasts and bone marrow-derived vascular progenitor cells to promote cancer progression. Nat Commun. 2017;8:14399.



**Primary Author(s):**

Rachelle Lacey, MD, Thomas Jefferson University, Department of Dermatology

**Co-Author(s):**

Doaa Shalabi, Thomas Jefferson University, Department of Dermatology and Cutaneous Biology; Neda Nikbakht, Assistant Professor of Dermatology, Thomas Jefferson University


## Subungual Tumor of Incontinentia Pigmenti

A 30 year-old female presented with painful, thickened fingernails and toenails. She had a history of multiple prior tooth extractions, and a blistering lower leg rash at birth, which resulted in persistent (and unbeknownst to her), whorled hypopigmentation. Her mother has similar whorled hypopigmentation of her lower legs.

Physical exam revealed hyperkeratosis and yellowing of the nail plate with nail bed hypertrophy and swelling of the digital tips. Hypopigmented alopecic whorled, linear patches along Blashko lines on her posterior legs, conical shaped incisor teeth and fronto-temporal hair thinning were also present.
A thumbnail bed and hyponychial wedge biopsy showed invaginated, verrucous epidermal hyperplasia with significant intraepithelial dyskeratosis and overlying grain-like parakeratosis diagnostic of the subungual tumor of incontinentia pigmenti.

Incontinentia Pigmenti (IP), aka Bloch-Sulzberger Syndrome, is an X-linked dominant genodermatosis, due to IKBKG/NEMO gene mutation. Features include vesiculobullous and whorl-like pigmentary lesions, nail dystrophy, ocular and dental involvement, hair changes, risk of pregnancy loss, and occasional central nervous system involvement with seizures. Only 7-10% of IP patients present with the late subungual tumors. More common nail pathologies of IP include onychodystrophy or onycholysis. The diagnosis of IP is based on clinical presentation, genetic testing and skin biopsy.

Prior to her IP diagnosis, treatments of her nails with clobetasol, grisofulvin, hydrocodone and gabapentin were unsuccessful. Acitretin, curettage/desiccation, local excision, or Mohs surgery for the subungual tumors are being considered. Following her consultation and diagnosis, she had an uncomplicated pregnancy and delivered a baby girl with similar skin findings.

**References:**


1. Mahamoud B.H., Zembowicz A., Fisher E. (2014) Controversies Over Subungual Tumors in Incontinentia Pigmenti. Dermatologic Surgery, 40(10): 1157-1159.
2. Narayanan M.J., Rangasamy A., Narayanan V. (2015) Incontinentia Pigmenti (Block-Sulzberger syndrome). Handbook of Clinical Neurology, 132: 271- 280.
3. Scheuerle, A. E. (2019). Incontinentia pigmenti in adults. American Journal of Medical Genetics, 179A: 1415-1419.
4. Simmons D.A., Kegel M.F., Scher R.K., Hines Y.C. (1986) Subungual Tumors in Incontinentia Pigmenti. Archives of Dermatology, 122: 1431- 1434.
5. Swinney C.C., Han D.P., Karth P.A. (2015). Incontinentia Pigmenti: A Comprehensive Review and Update. Ophthalmic Surgery, Lasers and Imaging Retina, 46(6): 650-657.



**Primary Author(s):**
Caryn Cobb, B.A., The Warren Alpert Medical School of Brown University

**Co-Author(s):**
Leslie Robinson-Bostom, M.D., The Warren Alpert Medical School of Brown University;
Gladys Telang, M.D., Associate Professor of Dermatology, Brown Physicians Inc.; Nathaniel Jellinek, M.D., Dermatology Professionals, Inc.; Annie R. Wang, M.D., Hawaii Permanente Medical Group


## Unmasking the Culprit: Thrombotic Vasculopathy due to Polymer Coating Embolism from an Intravascular Medical Device

We present a unique case of an 81 year-old-man with a two-day history of painful violaceous, retiform, purpuric patches on the left foot and erythematous purpuric macules on the left proximal and distal leg, after recent repair of an abdominal aortic aneurysm two weeks prior to presentation. An arterial doppler revealed stenosis of the bilateral anterior and posterior tibial arteries and the left dorsalis pedis artery. Biopsy demonstrated serpiginous and amorphous basophilic material within dermal blood vessels, focally associated with multinucleated histiocytes and extravasated erythrocytes in the dermis, consistent with polymer coating emboli. The patient also was subsequently found to have new onset acute kidney injury, concerning for renal emboli.

There has been a rise in the use of lubricious polymer-coated devices by interventional cardiologists and vascular surgeons for access to vasculature and for assistance in placement of endovascular devices over the past decade.(1) However, it has been noted that coating separation can result in adverse events. Hydrophilic polymer emboli are an underreported iatrogenic cause of ischemia and infarct.(2,3) Diagnosis may be challenging as the associated vasculitis may histologically mimic granulomatous vasculitis.(4) Additionally, this thrombotic vasculitis/vasculopathy may be an early presenting symptom and a cutaneous sign of embolization to other vital internal organs. Therefore we seek to characterize the salient clinical and histologic features of thrombotic vasculopathy due to polymer coating emboli to aid dermatologists

in timely diagnosis of this newly reported but potentially fatal adverse event related to use of endovascular devices.

**References:**
1. Chopra AM, Mehta M, Bismuth J, et al. Polymer coating embolism from intravascular medical devices - a clinical literature review. Cardiovascular pathology : the official journal of the Society for Cardiovascular Pathology. 2017;30:45-54.
2. Mehta RI, Mehta RI, Fishbein MC, et al. Intravascular polymer material after coil embolization of a giant cerebral aneurysm. Hum Pathol. 2009;40(12):1803-1807.
3. Mehta RI, Mehta RI, Solis OE, et al. Hydrophilic polymer emboli: an under-recognized iatrogenic cause of ischemia and infarct. Modern pathology: an official journal of the United States and Canadian Academy of Pathology, Inc. 2010;23(7):921-930.
4. Allan R, Thoirs K, Phillips M. Accuracy of ultrasound to identify chronic liver disease. World journal of gastroenterology. 2010;16(28):3510-3520.

**Primary Author(s):**
Roya Nazarian, Icahn School of Medicine at Mount Sinai and Albert Einstein College of Medicine

**Co-Author(s):**
Shadi Damanpour, Albert Einstein College of Medicine/Montefiore Medical Center; Michael Dewall, Montefiore Medical Center, Albert Einstein College of Medicine, Department of Dermatopathology; Bijal Amin, Albert Einstein College of Medicine; Yevgeniy Balagula, Montefiore Medical Center

## Rapidly developing neutrophilic panniculitis in a child undergoing dual MEK-BRAF inhibitor therapy for glioblastoma multiforme

A 9-year-old girl presented for evaluation of new onset cutaneous nodules on her arms and legs. One month prior, she began therapy with dual MEK-BRAF inhibition with trametinib and dabrafenib for BRAF V600E mutated glioblastoma multiforme. The nodules waxed and waned with intermittent periods of resolution. Physical exam revealed multiple tender subcutaneous erythematous nodules on the proximal upper and lower extremities.

A 4-mm punch biopsy from the left anterior thigh revealed a lobular predominantly neutrophilic infiltrate in addition to a perivascular and interstitial mixed-cell infiltrate with neutrophils and occasional eosinophils. The epidermis demonstrated subtle vacuolar alteration with necrotic keratinocytes. PAS-D and Gram stains were negative for microorganisms.

Though a single case of suspected MEK inhibitor-induced panniculitis has been reported[(1)], this cutaneous adverse event is more commonly associated with BRAF inhibitors such as dabrafenib. Therefore, the findings were felt to be most consistent with a grade II BRAF inhibitor-induced neutrophilic panniculitis. The family declined systemic glucocorticoids and the patient was treated conservatively with NSAIDs with mild improvement. Panniculitis has been described in an adolescent receiving vemurafenib for brainstem glioma, but only after a prolonged course.[(2)] Our patient developed this reaction within weeks of initiating treatment, similar to cases seen in adults treated for melanoma.[(3-5)] We report the youngest known case of BRAF inhibitor-induced neutrophilic panniculitis and the first case of dabrafenib as the inciting drug in a child. As BRAF inhibitors are being increasingly utilized, clinicians should remain aware of the clinical spectrum of adverse cutaneous effects.

**References:**
1. Negulescu, Miruna, et al. "Panniculitis Associated with MEK Inhibitor Therapy: An Uncommon Adverse Effect." Case reports in dermatology 9.1 (2017): 80-85.
2. West, Emily S., Victoria L. Williams, and Joseph G. Morelli. "Vemurafenib-induced neutrophilic panniculitis in a child with a brainstem glioma." Pediatric dermatology 32.1 (2015): 153-154.
3. Kim, Gene H., Alan Levy, and Goli Compoginis. "Neutrophilic panniculitis developing after treatment of metastatic melanoma with vemurafenib." Journal of cutaneous pathology 40.7 (2013): 667-669.
4. Zimmer L, Livingstone E, Hillen U, Dömkes S, Becker A, Schadendorf D. Panniculitis with arthralgia in patients with melanoma treated with selective BRAF inhibitors and its management. Arch Dermatol 2012; 148: 357.
5. Monfort JB, Pagès C, Schneider P, et al. Vemurafenib-induced neutrophilic panniculitis. Melanoma Res 2012; 5: 399.

**Primary Author(s):**
Trevor Young, BS, New York University School of Medicine

**Co-Author(s):**
Daniel Gutierrez, MD, The Ronald O. Perelman Department of Dermatology, New York University School of Medicine; Maressa C. Criscito MD, The Ronald O. Perelman Department of Dermatology, New York University Langone Medical Center; Randie H. Kim, MD, PhD, The Ronald O. Perelman Department of Dermatology, New York University School of Medicine; Vikash S. Oza MD, NYU School of Medicine

## Blastic Plasmacytoid Dendritic Cell Neoplasm

A 27-year-old male with no past medical history was admitted to the hospital for new-onset pancytopenia. Bone marrow evaluation revealed findings concerning for blastic plasmacytoid dendritic cell neoplasm (BPDCN). Dermatology was consulted for skin evaluation in the setting of this potential diagnosis. On exam, a subtle 1.5cm round violaceous nodule was noted on the left scalp. A 4-millimeter punch biopsy was taken from this lesion for further evaluation. On H&E, the dermis was noted to be diffusely involved by an interstitial and nodular bottom-heavy proliferation of atypical medium-sized blastoid cells. The cells of this infiltrate were found to be positive for CD4, CD56, and CD123 by immunohistochemistry. The cells were negative for CD, CD20, CD68, and CD163. Based on these findings, the lesion was determined to be cutaneous BPDCN. BPDCN, previously termed blastic NK cell lymphoma, is a rare aggressive hematologic malignancy. BPDCN makes up 0.7 percent of primary cutaneous skin lymphomas.[1] Most patients with BPDCN present with cutaneous findings with or without systemic involvement.[2] The most common cutaneous manifestations include brown or violaceous nodules, bruise-like patches, and disseminated/mixed lesions. Mucosal involvement may also be seen.[3] The immunohistochemical features of BPDCN include positivity for CD4, CD56, CD123, and TCL1.[4] Targeting CD123 with the toxin tagraxofusp will likely become the mainstay treatment for BPDCN, although other leukemia chemotherapy regimens are still commonly used. In a recent trial, treatment with tagraxofusp achieved survival rates of 59% and 52% at 18 and 24 months, respectively.[5] Outstanding clinical and histologic images will be presented.

**References:**

1. Petrella T, Bagot M, Willemze R et al. Blastic NK-cell lymphomas (agranular CD4+CD56+ hematodermic neoplasms): a review. Am J Clin Pathol. 2005;123(5):662-75.
2. Feuillard J, Jacob MC, Valensi F et al. Clinical and biologic features of CD4(+)CD56(+) malignancies. Blood. 2002;99(5):1556-63.
3. Julia F, Petrella T, Beylot-Barry M et al. Blastic plasmacytoid dendritic cell neoplasm: clinical features in 90 patients. Br J Dermatol. 2013;169(3):579-86.
4. Herling M, Teitell MA, Shen RR et al. TCL1 expression in plasmacytoid dendritic cells (DC2s) and the related CD4+ CD56+ blastic tumors of skin. Blood. 2003;101(12):5007-9.
5. Pemmaraju N, Lane AA, Sweet KL et al. Tagraxofusp in Blastic Plasmacytoid Dendritic-Cell Neoplasm. N Engl J Med. 2019;380(17):1628-1637.

**Primary Author(s):**
Timothy A. Durso, MD, San Antonio Uniformed Services Health Education Consortium

**Co-Author(s):**
Kate Kimes, DO, San Antonio Uniformed Services Health Education Consortium; Kevin Krauland, MD, SAUSHEC; David Lynch, MD, Brooke Army Medical Center; Gordon Rainey, MD

## Syringocystadenocarcinoma Papilliferum of the Scalp Arising from Syringocystadenoma Papilliferum and Nevus Sebaceous Successfully Treated with Mohs Micrographic Surgery

Patient history: A 71-year old male presented with a rapidly changing birthmark. On left occipital scalp, there was a 4cm ulcerated erythematous tumor adjacent to grouped linear pink/tan papules. No palpable cervical lymph nodes were

appreciated.

Biopsies and laboratory data: Biopsy showed poorly differentiated cutaneous carcinoma with spindle cells in contiguity with syringocystadenoma papilliferum (SCAP) and nevus sebaceous. Immunohistochemical staining was positive for cytokeratin 7(CK7), pancytokeratin MNF116, tumor protein P63, and carcinoembryonic antigen(CEA) (focal) indicating an adnexal neoplasm with squamous differentiation. Tumor cells stained negative for gross cystic disease fluid protein 15(GCDFP-15), erythroblast transformation-specific [ETS]-related gene(ERG), and S100. Epithelial membrane antigen(EMA) highlighted glandular portions compatible with SCAP. Immunohistochemistry performed for adipophilin, androgen receptor, and EMA marked areas of sebaceous differentiation.

Diagnosis: The immunoprofile and histologic appearance confirmed the diagnosis of syringocystadenocarcinoma papilliferum (SCACP) in association with SCAP and nevus sebaceous.[1,2] SCACP is an extremely rare cutaneous adnexal neoplasm that is clinically characterized by nodules on scalp, head, neck, trunk, genitalia and perianal region in elderly patients.[3] In the literature, approximately 50 cases of SCACP have been reported.[4] Malignant transformation of nevus sebaceous and SCAP to SCASP is very rare.[5]

Treatment: Mohs micrographic surgery was performed. The debulk specimen was sent to pathology to confirm diagnosis and clear margin. Sentinel lymph nodes were negative. He has been closely monitored for 16 months, and has not presented with any evidence of recurrence. This report presents a rare case of SCACP arising from SCAP and nevus sebaceous successfully treated with Mohs micrographic surgery.

**References:**


1. Ishida-Yamamoto A, Sato K, Wada T, Takahashi H, Iizuka H. Syringocystadenocarcinoma papilliferum: case report and immunohistochemical comparison with its benign counterpart. J Am Acad Dermatol. 2001;45(5):755-759.
2. Yao JL, Cellura P, Phelps RG. Syringocystadenocarcinoma Papilliferum: A Rare Malignant Sweat Gland Tumor. Skinmed. 2018;16(3):195-197.
3. Leeborg N, Thompson M, Rossmiller S, Gross N, White C, Gatter K. Diagnostic pitfalls in syringocystadenocarcinoma papilliferum: case report and review of the literature. Arch Pathol Lab Med. 2010;134(8):1205-1209.
4. Pagano Boza C, Gonzalez-Barlatay J, Ugradar S, Pol M, Premoli EJ. Syringocystadenocarcinoma papilliferum with orbital invasion: a case report with literature review. Ther Adv Ophthalmol. 2019;11:2515841419844087.
5. Chandramouli M, Sarma D, Tejaswy K, Rodrigues G. Syringocystadenoma Papilliferum of the Scalp Arising from a Nevus Sebaceous. J Cutan Aesthet Surg. 2016;9(3):204-206.



**Primary Author(s):**

Sara Moradi Tuchayi, MD, MPH, Wellman Center for Photomedicine, Massachusetts General Hospital; Department of Dermatology, Harvard Medical School

**Co-Author(s):**

Molly Yancovitz, Massachusetts Eye and Ear Infirmary; Kristine M. Cornejo, Massachusetts General Hospital; Rosalynn M. Nazarian, Massachusetts General Hospital; Kevin S. Emerick; Ellen K. Roh


## A case of tungiasis diagnosed in the deployment setting

A 34-year-old active duty female on deployment in Guyana presented to the dermatology clinic with 1 week of a tender lesion on the left plantar foot. The patient admitted to yoga with bare feet several days prior to symptom onset. Physical exam revealed a 5 millimeter erythematous, subcutaneous papule with central black punctum on the left medial plantar foot. Differential diagnosis included tungiasis, myiasis, arthropod assault, and verruca. Punch biopsy of the lesion yielded a diagnosis of tungiasis. Tungiasis results from cutaneous infestation by the gravid female sand flea, Tunga penetrans, often acquired while walking barefoot in sandy areas. Most commonly seen in Africa, India, and Central and South America, the condition is also more prevalent in children 5 to 10 years of age. The typical lesion manifests as a tender papulonodule on the foot within about 1 day of exposure and subsequently enlarges up to a centimeter in size over a week as the flea swells with ova. If left untreated, the lesion will eventually rupture and form a scar, but the course can be complicated by bacterial superinfection and tetanus. Diagnosis is usually clinical, and treatment consists of removal of the flea via needle or punch biopsy followed by application of topical antibiotics and tetanus prophylaxis. Wear of closed-toed shoes and use of plant-based repellants are helpful preventive measures in endemic areas. In this case, the patient's biopsy site healed well without complications, and she developed no additional lesions. Outstanding clinical and histologic images will be

presented.

**References:**


1. Eisele, M., Heukelbach, J., Van Marck, E., Mehlhorn, H., Meckes, O., Franck, S., & Feldmeier, H. (2003). Investigations on the biology, epidemiology, pathology and control of Tunga penetrans in Brazil: I. Natural history of tungiasis in man. Parasitology research, 90(2), 87-99.
2. Feldmeier, H., Eisele, M., Van Marck, E., Mehlhorn, H., Ribeiro, R., & Heukelbach, J. (2004). Investigations on the biology, epidemiology, pathology and control of Tunga penetrans in Brazil: IV. Clinical and histopathology. Parasitology research, 94(4), 275-282.
3. Feldmeier, H., Sentongo, E., & Krantz, I. (2013). Tungiasis (sand flea disease): a parasitic disease with particular challenges for public health. European journal of clinical microbiology & infectious diseases, 32(1), 19-26.
4. Kehr, J. D., Heukelbach, J., Mehlhorn, H., & Feldmeier, H. (2007). Morbidity assessment in sand flea disease (tungiasis). Parasitology research, 100(2), 413-421.
5. Heukelbach, J. (2005). Tungiasis. Revista do Instituto de Medicina Tropical de São Paulo, 47(6), 307-313.
6. Heukelbach, J., De Oliveira, F. A. S., Hesse, G., & Feldmeier, H. (2001). Tungiasis: a neglected health problem of poor communities. Tropical Medicine & International Health, 6(4), 267-272.
7. Heukelbach, J., Eisele, M., Jackson, A., & Feldmeier, H. (2003). Topical treatment of tungiasis: a randomized, controlled trial. Annals of Tropical Medicine & Parasitology, 97(7), 743-749.
8. Heukelbach, J., Franck, S., & Feldmeier, H. (2004). Therapy of tungiasis: a double-blinded randomized controlled trial with oral ivermectin. Memorias do Instituto Oswaldo Cruz, 99(8), 873-876.
9. Sachse, M. M., Guldbakke, K. K., & Khachemoune, A. (2007). Tunga penetrans: a stowaway from around the world. Journal of the European Academy of Dermatology and Venereology, 21(1), 11-16.
10. Sanusi, I. D., Brown, E. B., Shepard, T. G., & Grafton, W. D. (1989). Tungiasis: report of one case and review of the 14 reported cases in the United States. Journal of the American Academy of Dermatology, 20(5), 941-944.
11. Veraldi, S., & Valsecchi, M. (2007). Imported tungiasis: a report of 19 cases and review of the literature. International journal of dermatology, 46(10), 1061-1066.



**Primary Author(s):**

Olivia Arballo, DO, San Antonio Uniformed Services Health Education Consortium

**Co-Author(s):**

G. Strider Farnsworth, MD, SAUSHEC; Justin Bandino, MD, San Antonio Uniformed Services Health Education Consortium


## Widespread Lobomycosis

This case is a 55 y/o Fitzpatrick skin type 5 patient presented to dermatology humanitarian clinic in Guyana complaining of 19 year history of worsening growths on his bilateral legs and left arm. Patient reported that his first growth appeared on his right knee while working as a prospector in the Guyanese interior jungle and slowly progressed over subsequent years to involve the majority of his bilateral legs. More recently, patient noted a new subcutaneous enlarging nodule on the left lateral forearm despite no recent travel back to the interior. Clinical exam revealed diffuse scattered papules, with larger keloidal, multinodular, and verrucous papules and plaques over the bilateral legs and a single large subcutaneous nodule on left forearm. Punch biopsies of the left knee and left forearm lesions were obtained. Culture showed no growth (typical for Lobomycosis) but histology revealed numerous large semi-refractile fungal organisms within a sclerotic stroma, some forming “pop-bead” chains. A diagnosis of widespread, progressive lobomycosis was made. Lobomycosis, also known as keloidal blastomycosis, is a chronic progressive fungal infection caused by Lacazia Loboi endemic to the subtropical regions of Central and South America. Standard treatment is surgery or cryotherapy with adjunctive systemic antifungals. Surgery is not feasible for extensive disease and response to antifungals is variable, making treatment challenging. Several case reports describe best clinical improvement with posoconazole or combination clofazimine and itraconazole, though typical regimens require months to years of treatment to achieve clinical and histologic cure. Outstanding clinical and histologic images will be presented.

**References:**


1. Bolognia, J., Cerroni, L., Schaffer, J. V. (2018). Dermatology. Philadelphia, PA: Elsevier.

2. Fischer M, Chrusciak Talhari A, Reinel D, Talhari S. [Successful treatment with clofazimine and itraconazole in a 46 year old patient after 32 years duration of disease]. Hautarzt. 2002 Oct;53(10):677-81. PubMed ID: 12297950
3. de Souza MN, Schlosser AR, da Silva-Nunes M. Lobomycosis of the Lower Limb in an Amazonian Patient. Am J Trop Med Hyg. 2015 Oct;93(4):675-6. PubMed ID: 26446617
4. Bustamante B, Seas C, Salomon M, Bravo F. Lobomycosis successfully treated with posaconazole. Am J Trop Med Hyg. 2013 Jun;88(6):1207-8. PubMed ID: 23546805
5. Araújo MG, Cirilo NS, Santos SNMBD, Aguilar CR, Guedes ACM. Lobomycosis: a therapeutic challenge. An Bras Dermatol. 2018 Mar;93(2):279-281. PubMed PMID: 29723380; PubMed ID 5916408.

**Primary Author(s):**
G. Strider Farnsworth, MD, Capt U.S. Air Force, SAUSHEC

**Co-Author(s):**
Maria M. Hornberger BS, 2d Lt U.S. Air Force, Lewis Katz School of Medicine at Temple University, Philadelphia, PA; Justin P. Bandino, MD, Maj U.S. Air Force, San Antonio Uniformed Services Health Education Consortium

## Annular acquired epidermodysplasia verruciformis mimicking porokeratosis in an African American transplant patient

Introduction: Epidermodysplasia verruciformis (EV) is characterized by susceptibility to HPV infections via defect in cellular immunity.[1] EV was first described as an autosomal recessive genodermatosis, but can be acquired in immunosuppressed patients where it may have an atypical clinical appearance.[2,3]

Case: A 50-year-old African American female with systemic lupus erythematosus and a 15-year history of renal transplant for lupus nephritis presented for evaluation of a 1-year history of a non-pruritic rash on the abdomen. Her immunosuppressive regimen consisted of tacrolimus, azathioprine, and prednisone. On examination, numerous monomorphic annular hyperpigmented thin papules with central clearing were present on the abdomen, extending to the flanks and groin. Patient denied family history of similar lesions. The clinical differential diagnosis included porokeratosis, tinea versicolor, and lupus erythematosus. A 4mm punch biopsy of a lesion on the abdomen revealed mild acanthosis with prominent hypergranulosis and enlarged keratinocytes with blue-gray cytoplasm. A diagnosis of acquired epidermodysplasia verruciformis was rendered. The patient was treated with photodynamic therapy (PDT) utilizing 5-Aminoluvielinic acid.

Discussion: Acquired EV affects patients with immunodeficiencies that are susceptible to EV-causing HPVs via a similar mechanism found in inherited EV.[3] Length of immunosuppression was found to be positively correlated with risk of EV development, with majority of patients developing their lesions after 5 years of immunosuppression.[4] Malignant transformation of EV lesions into NMSC carries a risk as high as 60%.[3]
Treatment options for EV are anecdotal and range from topicals including 5-flurouracil and imiquimod, to systemic medications including acitretin and interferon.[4]

**References:**
1. Gober MD, Rady PL, He Q, Tucker SB, Tyring SK, Gaspari AA. Novel homozygous frameshift mutation of EVER1 gene in an epidermodysplasia verruciformis patient. J Invest Dermatol. 2007;127(4):817-820.
2. Sa NB, Guerini MB, Barbato MT, Di Giunta G, Nunes DH. Epidermodysplasia verruciformis: clinical presentation with varied forms of lesions. An Bras Dermatol. 2011;86(4 Suppl 1):S57-60.
3. Rogers HD, Macgregor JL, Nord KM, et al. Acquired epidermodysplasia verruciformis. J Am Acad Dermatol. 2009;60(2):315-320.
4. Henley JK, Hossler EW. Acquired epidermodysplasia verruciformis occurring in a renal transplant recipient. Cutis. 2017; 99(5):E9-E12.

**Primary Author(s):**
Abdullah Aleisa, MD, Tufts Medical Center

**Co-Author(s):**

David S. Feingold, Tufts University School of Medicine; Julie Y. Tse, Tufts University School of Medicine

## Granulomatous Drug Eruption Secondary to Dupilumab

Case: A 58 year-old African American male with a history of atopic dermatitis and allergic contact dermatitis (4-tert buthylphenol formaldehyde resin and nickel sulfate hexahydrate) presents to clinic with eight months of a worsening whole body rash. He initially presented with erythroderma eight years ago with work up negative for cutaneous T-cell lymphoma. He initially improved on methotrexate and topical triamcinolone ointment, but was lost to follow-up.

Upon re-presentation, the patient reported he is under the care of an outside dermatologist and has been taking dupilumab for the past 14 months in addition to intermittent use of cetirizine and hydroxyzine. Exam showed diffuse scaly lichenified plaques with focal depigmented patches of lower legs and few puritic papulonodules of arms. Two punch biopsies showed chronic spongiotic dermatitis with dense superficial and mid-dermal perivascular lymphohistiocytic infiltrate, prominent multinucleated giant cells, and scattered eosinophils. Labs were notable for mildly elevated absolute lymphocyte and eosinophil counts. He was diagnosed with a granulomatous drug eruption and instructed to stop dupilumab. Treatment with topical triamcinolone 0.1% ointment and weekly methotrexate was initiated.

Discussion: Granulomatous drug eruptions are marked by distinct histologic findings[1]. Various clinical manifestations, including erythroderma, have been reported[2]. Common culprit medications include calcium channel blockers, HMG-CoA reductase inhibitors, and TNF-α inhibitors[3]. To our knowledge, this is the first report of a granulomatous drug eruption secondary to dupilumab. Reported cutaneous adverse events to dupilumab include injection site reaction, drug-induced hypersensitivity syndrome, eosinophilic granulomatosis with polyangiitis, serum sickness-like reaction, urticaria, and erythema nodosum[4].

**References:**

1. Magro CM, Crowson AN, Schapiro BL. The interstitial granulomatous drug reaction: a distinctive clinical and pathological entity. Journal of cutaneous pathology. 1998; 25(2):72-8. [pubmed]
2. Chen YC, Hsiao CH, Tsai TF. Interstitial granulomatous drug reaction presenting as erythroderma: remission after discontinuation of enalapril maleate. The British journal of dermatology. 2008; 158(5):1143-5. [pubmed]
3. Rosenbach M, English JC. Reactive Granulomatous Dermatitis: A Review of Palisaded Neutrophilic and Granulomatous Dermatitis, Interstitial Granulomatous Dermatitis, Interstitial Granulomatous Drug Reaction, and a Proposed Reclassification. Dermatologic clinics. 2015; 33(3):373-87. [pubmed]
4. Dupixent (dupilumab). [package insert]. Tarrytown, NY: Regeneron Pharmaceuticals, Inc./Sanofi-Aventis U.S. LLC; 2019

**Primary Author(s):**
Jacob W. Charny, MD, University of Illinois College of Medicine - Department of Dermatology

**Co-Author(s):**
Wenhua Liu, MD, Cpc Pathology& Department of Dermatology, University of Illinois at Chicago; Milena J. Lyon, MD, University of Illinois, Chicago. Department of Dermatology

## Cytophagic histiocytosis as a histological finding in a child with IgA vasculitis

A 7-year-old male presented three weeks post-upper respiratory infection with an urticarial eruption that spread diffusely from his lower extremities over 5 days. He had hand, pedal, and facial edema, fever, vomiting, and foot pain. Examination revealed widespread polymorphous, erythematous, edematous plaques and dusky purpuric patches on multiple fingers and plantar feet. Labs were significant for neutrophilia and trace proteinuria. Punch biopsy of a purpuric patch revealed perivascular and interstitial neutrophilic infiltrate with cytophagic histiocytes containing hematopoietic elements, concerning for hematophagocytic lymphohistiocytosis (HLH). However, concurrent direct immunofluorescence (DIF) demonstrated perivascular IgA deposition consistent with IgA vasculitis.

Days later, the patient developed worsening abdominal pain, vomiting, and joint pain. Skin examination demonstrated minimally raised purpuric plaques on his bilateral shins. Labs including complete blood count, hepatic panel, coagulation studies, and inflammatory markers were inconsistent with HLH. Hematuria and moderate proteinuria were noted. The

patient's gastrointestinal symptoms, renal inflammation, arthritis/arthralgia, and palpable purpura were consistent with IgA vasculitis. He was treated with topical and systemic corticosteroids, and repeat punch biopsy demonstrated leukocytoclastic vasculitis (LCV). A week later, in the setting of worsening proteinuria, a renal biopsy revealed severe crescentic IgA nephropathy. He was treated with IV prednisolone and cyclophosphamide.

Previous reports have attributed the finding of cytophagic histiocytes to biopsying later LCV lesions[1]. This is the first reported case of this finding in a pediatric patient with DIF-confirmed IgA vasculitis and severe crescentic IgA nephropathy. The patient's subsequent kidney disease suggests cytophagic histiocytes may be indicative of a more aggressive disease course[2].

**References:**

1. Boggio F, Lora V, Cota C, et al. Cutaneous hemophagocytosis: Clinicopathologic features of 21 cases. Journal of the American Academy of Dermatology. 2018;78(2):377-382.
2. Kerl K, Wolf IH, Cerroni L, Wolf P, French LE, Kerl H. Hemophagocytosis in Cutaneous Autoimmune Disease. The American Journal of dermatopathology. 2015;37(7):539-543.

**Primary Author(s):**
Lu Yin, New York University

**Co-Author(s):**
Trevor K. Young, New York University School of Medicine; Brit Trogen, NYU Langone Health; Nikita Lakdawala, NYU; Nooshin Brinster, New York University; Vikash S. Oza, New York University School of Medicine; Kristen Lo Sicco, The Ronald O Perelman Dept of Dermatology

## A Challenging Diagnosis of Penile Sarcomatoid Squamous Cell Carcinoma

Sarcomatoid squamous cell carcinoma (SCC) is a rare, aggressive, biphasic cancer that often presents a diagnostic challenge and carries a poor prognosis, especially with a delay in diagnosis. We report the case of a 79 year-old male who presented with tender, bleeding nodules on his corona and glans penis that were previously biopsied by the patient's urologist twice within a two year period and initially misdiagnosed as condyloma acuminatum. On examination, the patient had two 3x3 cm fungating, friable, bleeding nodules on the corona penis that were removed in office and sent to pathology. On histopathologic evaluation, the nodules were consistent with a malignant spindle cell proliferation that was focally positive for pancytokeratin, p63, CK5/6, 34BE12, CD1138, CAM 5.2, and calponin. The patient was admitted for further workup with plan for partial penectomy and perineal urethrostomy but developed shortness of breath and fatigue. A CT angiogram of the chest revealed innumerable pulmonary metastases and effusions requiring thoracentesis, and the patient passed shortly after deciding to focus on comfort care. While sarcomatoid SCC may exhibit a broad range of clinical features, the expression of p63 and keratin 34βE12 is a common finding. Importantly, previous studies have documented considerable difficulty by pathologists in differentiating the morphology of human papillomavirus-infected epithelia and various penile carcinomas. Therefore, it is critical for Dermatologists, Urologists, and other healthcare professionals who may encounter this aggressive subtype of SCC to quickly reach an accurate diagnosis through comprehensive clinicopathological correlation.

**References:**

1. Bachurska SY, Antonov PA, Staykov DG, Dechev IY. Sarcomatoid Squamous Cell Carcinoma of the Penis - a Report of Two Cases. Folia Med (Plovdiv). 2017;59(2):232-237.
2. Shankar K, Kumar MV, Srinivas C, Nayak S, Suma MN. Sarcomatoid Carcinoma of the Penis. Indian J Surg Oncol. 2017;8(1):85-87.
3. Yamamoto T, Owari T, Toyoshima Y, et al. [A Case of Penile Squamous Cell Carcinoma, Sarcomatoid Subtype]. Hinyokika Kiyo. 2016;62(10):553-556.
4. Velazquez EF, Melamed J, Barreto JE, Aguero F, Cubilla AL. Sarcomatoid carcinoma of the penis: a clinicopathologic study of 15 cases. Am J Surg Pathol. 2005;29(9):1152-1158.
5. Challa VR, Swamyvelu K, Amirtham U, Shivappa P. Sarcomatoid carcinoma of penis with bilateral inguinal metastases-a case report and review of literature. Indian J Surg. 2014;76(4):316-318.
6. Wanifuchi A, Taguchi K, Ikehata Y, Kurimura Y, Hiyama Y, Tomaru U. [A Case of Sarcomatoid Carcinoma of the Penis]. Hinyokika Kiyo. 2015;61(6):249-252.

7. Lont AP, Gallee MP, Snijders P, Horenblas S. Sarcomatoid squamous cell carcinoma of the penis: a clinical and pathological study of 5 cases. J Urol. 2004;172(3):932-935.
8. Nishino A, Nagai Y, Hanai T, Uejima S, Hoshida Y. [A Case of Autopsy of Sarcomatoid Carcinoma of the Penis with Metastasis to the Right Ventricle of the Heart]. Hinyokika Kiyo. 2018;64(11):455-458.
9. Chaux A, Cubilla AL. Advances in the pathology of penile carcinomas. Hum Pathol. 2012;43(6):771-789.

**Primary Author(s):**
Hasan Khosravi, MD, University of Pittsburgh Medical Center

**Co-Author(s):**
Sophia Zhang, BS, University of Pittsburgh School of Medicine; Michael Cardis, MD, Medsar Washington Hospital Center/Georgetown University Hospital; Jaroslaw Jedrych, MD, Department of Dermatology, Johns Hopkins School of Medicine; Jonhan Ho, MD, MS; Yuri Bunimovich, MD, PhD, University of Pittsburgh Medical Center

## Congenital Leukemia Cutis

A 12 day-old full-term female born at 39 weeks via C-section, was admitted for blue-red nodules present at birth. Her mother initially noted a bluish nodule on the patient's anterior neck, and over the next few days, she developed numerous red-blue nodules on her abdomen, arms, and legs that seemed asymptomatic. Birth history was unremarkable and mother was otherwise healthy (standard prenatal screening non-contributory.) The rest of the history was unremarkable, and the patient was feeding well, 59th percentile for weight, and without fevers or GI symptoms. Vital signs were normal. Skin examination showed several subcutaneous, firm mildly erythematous 0.5-1.5cm nodules on the right lower abdomen, left thigh, anterior neck, right arm, and right axilla. Abdominal ultrasound was negative for organomegaly. Skin biopsy of the right arm showed a dense population of atypical mononuclear cells that stained positive for CD43, CD68, and CD4 and negative for c-kit, CD3, and CD20. There was partial and weak expression of myeloperoxidase. Staining for TdT was negative. These findings were consistent with leukemia cutis. FISH was positive for a MLL (KMT2A) gene rearrangement in 36.5% of cells. Cerebrospinal studies were negative. Bone marrow biopsy was negative by morphology and flow, but did show the MLL/ELL translocation in a small percentage of cells. Due to the small leukemic cell population identified in her marrow, accurate immunophenotyping (AML vs ALL) was not obtained. At a follow up hematology/oncology visit, peripheral smear was concerning for lymphoblasts. Repeat bone marrow biopsy and further workup are pending.

**References:**

1. Roberts I, Fordham NJ, Rao A , Bain BJ. Neonatal leukaemia. British journal of haematology 2018;182:170-84.
2. Wan Ariffin E, Jones H , Bhatnagar N. Congenital acute myeloid leukaemia with KMT2A rearrangement. British journal of haematology 2018;182:169.

**Primary Author(s):**
Remi Hamel, MD, Washington University, St. Louis

**Co-Author(s):**
Ting Yang, MD, PhD, Washington University in St Louis; Susan Bayliss, MD, Washington University School of Medicine, St Louis; Julie Neidich, MD, Washington University School of Medicine; Leigh Compton, MD, PhD, Washington University School of Medicine/Departments of Pathology and Medicine-Dermatology

## Dusky plaques and bullae of the face: an unusual case of eosinophilic-variant granulomatosis with polyangiitis

A 43-year-old African-American woman was admitted with a 2-day history of painful facial lesions. She had a history of granulomatosis with polyangiitis (GPA) with renal involvement and sensorineural hearing loss. Previous treatments included various immunosuppressive agents, but on admission she was not taking any medications. History was negative for asthma and atopy. On exam she had tender, dusky dermal plaques with violaceous borders, which evolved into bullae and progressed to erosions over a few days.

Skin biopsy was performed and sent for histology, tissue culture, and direct immunofluorescence (DIF). Fungal, bacterial,

viral, and mycobacterial cultures were negative. Histopathology revealed necrotizing vasculitis with characteristic nuclear dust, and numerous eosinophils. DIF was non-specific. Pertinent lab findings included positive ANCA against proteinase-3 (PR3). There was no peripheral eosinophilia.

Thus, based on history and histology, she was diagnosed with eosinophilic-variant GPA. There are multiple reports of eosinophilic-variant GPA with peripheral or tissue eosinophilia that do not meet criteria for eosinophilic granulomatosis with polyangiitis (Churg-Strauss).

Treatment is the same as that for GPA. GPA has a high mortality rate, thus aggressive initial immunosuppressive therapy is indicated, which consists of glucocorticoids with cyclophosphamide or rituximab. Our patient was started on oral prednisone and rituximab, with symptomatic improvement.

It is important to consider the ANCA-associated vasculitides in the differential of rapid onset of dermal plaques that progress to bullae. This case highlights an atypical presentation of cutaneous vasculitis consistent with eosinophilic-variant GPA and adds to the current literature on the clinicopathologic spectrum of GPA.

**References:**


1. Lutalo PM, D'cruz DP. Diagnosis and classification of granulomatosis with polyangiitis (aka Wegener's granulomatosis). J Autoimmun. 2014;48-49:94-8.
2. Uematsu H, Takata S, Sueishi K, Inoue H. Polyangiitis overlap syndrome of granulomatosis with polyangiitis (Wegener's granulomatosis) and eosinophilic granulomatosis with polyangiitis (Churg-Strauss syndrome). BMJ Case Rep. 2014:1-3. doi:10.1136/bcr-2013-010195
3. Al-Hakami H, Al-Arfaj AS, Al-Sohaibani M, Khalil NA. An eosinophilic variant granulomatosis with polyangiitis involving the dura, bilateral orbits, and mastoids. Saudi Med J. 2016;37(6):690-693. doi:10.15537/smj.2016.6.14718.



**Primary Author(s):**

Samantha Shwe, UC Irvine

**Co-Author(s):**

Christina N. Kraus, University of California, Irvine, Department of Dermatology; Linda T. Doan, University of California, Irvine, Nathan W. Rojek, UC Irvine Department of Dermatology; Kenneth G. Linden, Department of Dermatology, University of California Irvine


## An Unusual Location: Pilar Cyst of the Lower Anterior Orbit Leading to Compromised Vision.

Introduction: Pilar cysts, also known as trichilemmal cysts are identified as solitary or multiple intradermal or subcutaneous benign lesions with a propensity for localization to the scalp with a female predominance [2]. Involvement of the lower eyelid is quite rare.

Case Presentation: A 58 year-old white male presented with complaint of decreased vision and diplopia. The patient reported progressive difficulty seeing secondary to bilateral ptosis and a lower left anterior orbit mass with interval enlargement over two years. No symptoms of pain, discharge, erythema, or infection. Physical examination the left lower eyelid mass measured 10 mm in diameter. The mass was non-tender, mobile, and firm. The patient was diagnosed with a neoplasm of the left lower anterior orbit of uncertain origin. The patient underwent surgical excision. Histopathological examination reported a diagnosis of a pilar cyst of the left lower anterior orbit. On follow-up the patient reported improved vision with no evidence of recurrence.

Discussion/Conclusion: The differential diagnosis for anterior orbit and eyelid lesions is quite extensive. Including, but not limited to: hordeolum, chalazion, epidermal inclusion cyst, dermoid cyst, basal cell carcinoma, and squamous cell carcinoma. Our patient presented with a unique and rare pilar cyst within the anterior orbit. In rare cases, a pilar cyst may transition to the formation of a tumor known as a proliferating trichilemmal cyst. Even though anterior orbit and eyelid lesions are visible on physical examination this case highlights the importance of histopathological evaluation. More over, all eyelid lesions should be sent for pathologic evaluation after surgical removal.

**References:**
1. Jakobiec FA, Bonanno PA, Sigelman J. Conjunctival adnexal cysts and dermoids. Arch Ophthalmol 1978; 96:1404-1409.
2. Johnston, Ronald. SD - Weedon's Skin Pathology Essentials E-Book. London: Churchill Livingstone; 2011.
3. B. Karuppannan, B. Shaharuddin, E. Zunaina et al., Trichilemmal cyst in the eyelid: a rare presentation, International Journal of Ophthalmology 2009; 9 (8): 1451–1452.
4. Kersten RC, Ewing-Chow D, Kulwin DR, Gallon M. Accuracy of clinical diagnosis of cutaneous eyelid lesions. Ophthalmology 1997: 104 (3): 479-484.
5. Lee SJ, Choi KH, Han JH, Kim YD. Malignant proliferating trichilemmal tumor of the lower eyelid. Ophthalmic Plastic and Reconstructive Surgery 2005; 21 (5): 349-352.
6. Kang SJ, Wojno TH, Grossniklaus HE. Proliferating trichilemmal tumor of the eyelid. American Journal of Ophthalmology 2007; 143 (6): 1065-1067.

**Primary Author(s):**
David A. Wiegmann, MD, William Beaumont Hospital

**Co-Author(s):**
Mitual Amin, MD; Geoffrey J. Gladstone, MD, FAACS

## An Unusual Location: Pilar Cyst of the Lower Anterior Orbit Leading to Compromised Vision.

A 61-year-old man, with a past medical history of kidney transplant in 2015 and polycystic kidneys, presented to the dermatology clinic with multiple asymptomatic skin-colored papules on the face and some slightly pruritic pink papules on the extremities. The lesions appeared one year after kidney transplant and were slowly progressing for the past two years. His systemic immunosuppressive medication was composed of prednisone, mycophenolate mofetil (MMF) and tacrolimus. On clinical examination there were multiple millimetric folliculocentric hyperkeratotic skin-colored to pink papules on the face, ears and extremities. Some of the papules also had a white central spicule. Furthermore, alopecia was noted on the eyebrows and extremities.

Histology of a 4 mm punch biopsy from a thigh lesion showed a dilated follicle with an expansion of the inner root sheaths cells and keratin debris replacing the hair shaft. Eosinophilic trichohyalin granules were also present. Unfortunately, our center could not provide electron microscopy, nor the real-time polymerase chain reaction (PCR) targeting the viral protein 1 (VP1) gene, so the diagnosis of trichodysplasia spinulosa associated with immunosuppression was made on clinical and histological findings only.

With the patient nephrologist consent, the MMF was reduced from 720 mg to 360 mg twice a day and a topical tretinoin gel 0,1% was applied on the facial lesions. Six months later, only a few hyperkeratotic pink papules persisted on the extremities.

**References:**
1. Fischer MK, Kao GF, Nguyen HP, et al. Specific Detection of Trichodysplasia Spinulosa–Associated Polyomavirus DNA in Skin and Renal Allograft Tissues in a Patient With Trichodysplasia Spinulosa. Arch Dermatol.2012;148(6):726–733. doi:10.1001/archdermatol.2011.3298
2. Kazem, S, Meijden, E, Feltkamp, MCW. The trichodysplasia spinulosa-associated polyomavirus: virological background and clinical implications. APMIS 2013; 121: 770– 82.
3. Santesteban R, Feito M, Mayor A, Beato M, Ramos E, Lucas R. Trichodysplasia Spinulosa in a 20-Month-Old Girl With a Good Response to Topical Cidofovir 1%. Pediatrics. Dec 2015, 136 (6) e1646-e1649; doi: 10.1542/peds.2015-0953
4. Leitenberger JJ, Abdelmalek M, Wang RC, Strasfeld L, Hopkins RS. Two cases of trichodysplasia spinulosa responsive to compounded topical cidofovir 3% cream. JAAD Case Rep. 2015;1(6):S33–S35. Published 2015 Nov 24. doi:10.1016/j.jdcr.2015.09.019
5. Aleissa, M. , Konstantinou, M. P., Samimi, M. , Lamant, L. , Gaboriaud, P. , Touze, A. , Ceppi, C. , Bulai Livideanu, C. and Paul, C. (2018), Trichodysplasia spinulosa associated with HIV infection: clinical response to acitretin and

valganciclovir. Clin Exp Dermatol, 43: 231-233. doi:10.1111/ced.13286
6. DeCrescenzo AJ, Philips RC, Wilkerson MG. Trichodysplasia spinulosa: A rare complication of immunosuppression. JAAD Case Rep. 2016;2(4):307–309. Published 2016 Aug 5. doi:10.1016/j.jdcr.2016.07.002

**Primary Author(s):**
Camille Pennou, MD, Centre Hospitalier de l'Université de Montréal (CHUM)

**Co-Author(s):**
Julie Lecours, MD, Université de Montréal, Montreal, Quebec, Canada; Annie Bélisle, MD, Centre Hospitalier de l'Université de Montréal (CHUM), Department of Pathology; Sandra Davar, MD, Chum université de montreal

## Primary cutanous TB of the penis Tumor like lupus vulgaris

Introduction: Cutaneous tuberculosis constitutes a minor portion of extra pulmonary tuberculosis (2%) mainly caused by mycobacterium tuberculosis, from cutaneous tuberculosis the external genitalia is very rarely involved (0.2-2%), and the penis is extremely rare site of involvement and few cases described in the literature.

Methods or and material: The case was analyzed by appropriate clinical examination and investigation and diagnosed according to the appropriate diagnostic criteria and varies internet data bases and case reports were reviewed in order to see similar or close presentations of cutaneous tuberculosis of the penis and also used as a references.

Discussion/result: Physical examination revealed saxophone deformity of the penis with multiple firm skin colored to hyper pigmented nodules with various sizes and minimal purulent discharge over the shaft of the penis and with extension to the proximal part of the glans of the penis and a discrete nodule with scarred edge over the perineum, no lymphadenopathy. Investigations showed leukocytosis with raised ESR, FBS – normal, serology for syphilis and HIV non-reactive discharge analysis positive for AFB, FNAC – granuloma with caseous necrosis, culture and sensitivity – no growth seen, chest Xray and abdominal u/s – normal.

Conclusion: With the above findings saxophone deformity 2ndary to primary cutaneous TB of the penis (tumor like lupus vulgaris) was entertained, patient was started on first line Anti TB and all family member were screened and appointed to plastic surgery side for reconstructive surgery and dermatology OPD for follow up.

**References:**
1. Anthony kodozo-grey venoy,department of urology,uk ,Tuberculosis of the penis :a review of the litrarture,2015
   El anzi ouim etal department of dermatology and venerology ,morocco ,2018
2. Priyatam khadka etal ,department of microbiology and dermatovenerology ,nepal,cutanous TB :clinicopathologic array and diagnostic chanllange ,2018
3. Brian j angus ,oxford acadamic :cutnaous TB of the penis and sexual transmission confirmed by molecular typing, 2001
4. L padmavathy etal ,indian journal of dermatology :elephanthiasis of the extenal genitalia :a sequel to cutanous TB

**Primary Author(s):**
Betelhem Teshome, MD, Addis ababa University

## Vitamin K deficiency in Bullous pemphigoid with extensive esophageal involvement

Bullous pemphigoid is a common autoimmune blistering condition with limited mucosal involvement; if any. We describe a rare manifestation of bullous pemphigoid with esophageal involvement and gastrointestinal (GI) bleeding, associated with Vitamin K deficiency arising from dysphagia and resultant malnutrition.

An 82-year-old lady was admitted for hemoptysis and dysphagia for which a nasoendoscopy was unremarkable apart from a ruptured left palate hemorrhagic blister. She had multiple comorbidities and was minimally communicative. Subsequent

skin examination revealed tense blisters over her genitalia and lower abdomen. Serum BP 180 and 230 were positive, and indirect immunofluorescence showed an epidermal pattern on salt split skin with basement membrane IgG titre of 1:640. Dsg 1 and 3 were negative. Skin punch biopsy from the abdomen showed sub-epidermal blistering with eosinophils and lymphocytes, consistent with bullous pemphigoid. Direct immunofluorescence (DIF) showed linear IgG and C3 deposition.

She subsequently developed malena and urgent upper GI endoscopy showed extensive ulceration. Histology from an ulcer and DIF were similarly consistent with bullous pemphigoid without viral inclusions or malignancy. Serology revealed prolonged aPTT which was correctable on mixing studies and Factor VIII inhibitor was negative. In view of cachexia, Vitamin K deficiency from suboptimal nutrition was suspected and she was given intravenous Vitamin K with a marked improvement in aPTT.

Our patient received topical clobetasol and doxycycline with nicotinamide as administration of systemic corticosteroids was limited by active gastrointestinal bleeding. Her lesions improved. This case highlights the importance of addressing nutritional deficiencies in the rare setting of esophageal bullous pemphigoid.

**References:**


1. Kar HK. A rare case of bullous pemphigoid associated with esophageal involvement and acquired hemophilia. Journal of the American Academy of Dermatology. 2018; Volume 79 AB21
2. Hokama A, Yamamoto Y, Taira K, et al. Esophagitis dissecans superficialis and autoimmune bullous dermatoses: a review. World J Gastrointest Endosc. 2010;2:252–6



**Primary Author(s):**

Adeline Yong, National University Hospital

**Co-Author(s):**

Chng Wei Qiang, National University Hospital; Chris Tan Lixian, NUH


## Greither's Syndrome: A Novel Mutation

Transgrediens et progrediens palmoplantar keratoderma, known as Greither's syndrome, is a rare entity originally described in 1952 with approximately 40 reported cases in the literature. It is characterized by a transgrediens palmoplantar keratoderma (PPK) due to its extension beyond Wallace's line, often involving the overlying skin of the Achilles tendon. In addition, hyperkeratotic plaques may develop on flexural surfaces, knees or elbows. We present a rare case of Greither's syndrome with the discovery of a novel mutation in the keratin 1 gene (KRT1). In our case, a 16-year-old Caucasian male presented to the clinic with a reported past medical history of atopic dermatitis. Upon physical exam, transgrediens PPK was identified, as well as hyperkeratotic plaques on bilateral knees. Biopsy obtained for hematoxylin and eosin demonstrated epidermolytic hyperkeratosis. Subsequently, the patient underwent genetic testing which revealed a novel frameshift mutation within KRT1, predicted to produce an elongated tail domain. Reported cases of Greither's syndrome demonstrate phenotypic variability, possibly due to variation in underlying gene defects, as demonstrated by this case. Our case highlights a previously unreported defect in KRT1 leading to Greither's syndrome, as well as, underscores the importance of recognizing variability in genetic defects which can lead to variation in phenotype expression.

**References:**


1. GREITHER A. [Keratosis extremitatum hereditaria progrediens with genetic dominant]. Hautarzt. 1952;3(5):198-203. http://www.ncbi.nlm.nih.gov/pubmed/14945735. Accessed July 30, 2019.
2. Gach JE, Munro CS, Lane EB, Wilson NJ, Moss C. Two families with Greither's syndrome caused by a keratin 1 mutation. J Am Acad Dermatol. 2005;53(5 Suppl 1):S225-30. doi:10.1016/j.jaad.2005.01.139
3. Dev T, Mahajan V, Sethuraman G. Hereditary palmoplantar keratoderma: A practical approach to the diagnosis. Indian Dermatol Online J. 2019;10(4):365. doi:10.4103/idoj.IDOJ_367_18
4. Sakiyama T, Kubo A. Hereditary palmoplantar keratoderma "clinical and genetic differential diagnosis." J Dermatol. 2016;43(3):264-274. doi:10.1111/1346-8138.13219
5. Terron-Kwiatkowski A, Paller AS, Compton J, Atherton DJ, McLean WHI, Irvine AD. Two cases of primarily palmoplantar keratoderma associated with novel mutations in keratin 1. J Invest Dermatol. 2002;119(4):966-971. doi:10.1046/j.1523-1747.2002.00186.x

**Primary Author(s):**
Taylor Gray, DO, Largo Medical Center, Department of Dermatology

**Co-Author(s):**
Christopher White, DO, Largo Medical Center; Maheera Farsi, DO, Nova Southeastern University/Largo Medical Center; Joseph Dyer, DO, Avail Dermatology; Richard Miller, DO, Largo Medical Center

## A Case of Scleromyxedema with Histologic Features of Granulomatous Dermatitis

A 44-year old African American female with history of rheumatoid arthritis on methotrexate presented to clinic with 3-month history of worsening shortness of breath and of progressive erythematous, edematous, indurated papules coalescing into plaques on the face, neck, and bilateral upper extremities with itch, pain, and swelling.

A biopsy from left upper arm showed a superficial perivascular lymphohistiocytic infiltrate with eosinophils and numerous histiocytes in between reticular collagen bundles. The findings are compatible with a form of granulomatous dermatitis and the differential diagnosis includes granuloma annulare and interstitial granulomatous dermatitis with arthritis (IGDA). Repeat biopsies from the upper arm and face revealed similar histologic findings.

Although the histologic features were not classic, Serum protein electrophoresis (SPEP) was performed given clinical concern for scleromyxedema and was positive for IgG lambda paraprotein. She was initiated on 1mg/kg prednisone daily which was tapered and IVIG 2g/kg monthly.

This case highlights a distinct histologic pattern of scleromyxedema with an interstitial granuloma annulare-like pattern. Histology in a recent series showed six cases with interstitial infiltrate of histiocytes highlighted by CD68 mimicking interstitial granuloma annulare along with findings of IgG monoclonal gammopathy on SPEP. Given these findings and clinical picture, diagnoses of scleromyxedema were made. Dermatopathologists need to be aware of this atypical histologic variant of scleromyxedema.

**References:**

1. Rongioletti et al. Histopathologic characteristics of scleromyxedema: A study of a series of 34 cases. JAAD. Vol. 74. No. 6. Dec. 2015.

**Primary Author(s):**
James Ko, MD, Barnes Jewish Hospital / Washington University School of Medicine

**Co-Author(s):**
Paetra Ruddy, MD, Washington University in St. Louis; Leigh Compton, MD, PhD, Washington University School of Medicine/ Departments of Pathology and Medicine-Dermatology

## A Case of Pemetrexed-Induced Sclerodermoid Reaction on the Trunk

A 61-year-old male with stage IV adenocarcinoma of the lung presented with a four-week history of asymptomatic indurated plaques on the lower abdomen and back. History revealed a chemotherapy regimen including pemetrexed, bevacizumab, and zoledronic acid, started about 10 months prior to onset of skin findings. On examination, there was a tan-brown linear indurated plaque extending from the umbilicus to the lower abdomen, and a similar ill-defined indurated plaque on the lower back. Punch biopsy revealed subcutaneous septal sclerosis with increased elongated and stellate fibroblasts and a disorganized elastic fiber network. Dermatopathology was felt to be inconsistent with the classical presentation of morphea or lipodermatosclerosis and to more likely represent a medication-induced sclerodermoid reaction.

Pemetrexed-associated sclerodermoid reactions have been reported to be associated with patient folate status and with lower extremity edema, with sclerosis often occurring on the lower legs. This patient did have lower extremity edema, although his skin changes were localized to the trunk. Folate and B12 supplementation had already been started by

another physician and the patient was encouraged to continue these. At follow up two months later, he had developed new indurated plaques on the bilateral hips, despite the interim completion and discontinuation of chemotherapy. Progression of pemetrexed-associated cutaneous sclerosis has been noted to continue for 3-4 months after discontinuing treatment in a few cases in the literature. Topical calcipotriene was prescribed at the most recent visit, as it has thought to be helpful in similar sclerosing conditions such as localized morphea.

**References:**

1. Corbaux C, Marie J, Meraud JP, et al. Pemetrexed-induced scleroderma-like changes in the lower legs. Ann Dermatol Venereol 2015; 142(2): 115-20.
2. Ishikawa K, Sakai T, Saito-Shono T, Miyawaki M, Osoegawa A, Sugio K, Ono A, Mori H, Nishida H, Yokoyama S, Okamoto O, Fujiwara S, Hatano Y. Pemetrexed-induced scleroderma-like conditions in the lower legs of a patient with non-small cell lung carcinoma. J Dermatol. 2016;43:1071–4.
3. Eguia B, Ruppert AM, Fillon J et al. Skin toxicities compromise prolonged pemetrexed treatment. J Thorac Oncol 2011; 6: 2083–2089.
4. Merklen-Djafri C, Imbert E, Courouge-Dorcier D et al. Pemetrexed induced skin sclerosis. Clin Oncol 2012; 24: 452–453.
5. Cunningham, Bari B. et al. Topical calcipotriene for morphea/linear scleroderma. Journal of the American Academy of Dermatology, Volume 39, Issue 2, 211 - 215.

**Primary Author(s):**
Amy Zavell, MD, University of Missouri Dermatology Residency

**Co-Author(s):**
Kristen Fernandez, MD, University of Missouri

## Clinicopathologic and genetic characteristics of Pythium insidiosum in a middle-aged male – our experience with a rare Mucor mimic

A 58 year-old immunocompetent male with a past medical history of asthma presented to the emergency room for a slowly progressive, tender, ulcerated crust with an area of central necrosis on the medial right lower leg of four weeks' duration. The lesion developed one week after vacationing at a hot spring in New Mexico. He did not recall an injury or pre-existing wound to the skin. An ultrasound showed severe subcutaneous edema. He was evaluated emergently by dermatology where a 4 mm punch biopsy of the lesion was obtained. On hematoxylin and eosin, and confirmed on Grocott's methenamine silver, the stained sections were positive for presumed fungal elements concerning for cutaneous mucormycosis. Treatment was initiated with amphotericin B and posaconazole. However, the rash continued to worsen. Due to concern for necrotizing fasciitis, debridement was performed. Tissue samples were sent to an outside laboratory for culture and genetic analysis. On Sabouraud-dextrose agar, a white filamentous organism was grown without the characteristic "lid-lifter" growth pattern seen with agents of mucormycosis. Analysis of the cultured species' ribosomal RNA sequence identified Pyithium insidiosum as the causative species. Pithiosis is an exceedingly rare infection that can mimic mucormycosis both clinically and on initial histology. Many cases of pythiosis are initially misdiagnosed as mucormycosis, which is more frequently encountered. Differentiating between the two infections is important because the efficacy of antimicrobial agents against P. insidiosum is unclear, recommended agents are different from those used to treat mucormycosis, and there is an experimental vaccine available which has been used for treatment of pythiosis in humans. We present a case of pythiosis with poor response to medical therapy and ultimately requiring surgical amputation to treat. We discuss clinical course, diagnosis and bring awareness to this rare infection.

**References:**

1. Gaastra W, Lipman LJ, De Cock AW, et al. Pythium insidiosum: an overview. Vet Microbiol. 2010 Nov 20; 146(1-2):1-16.
2. Krajaejun T, Sathapatayavongs B, Pracharktam R, et al. Clinical and epidemiological analyses of human pythiosis in Thailand. Clin Infect Dis. 2006 Sep 1;43(5):569-76.
3. Franco DM, Aronson JF, Hawkins HK, et al. Systemic Pythium insidiosum in a pediatric burn patient. Burns. 2010 Aug;36(5):e68-71.
4. Salipante SJ, Hoogestraat DR, SenGupta DJ et al. Molecular diagnosis of subcutaneous Pythium insidiosum infection

by use of PCR screening and DNA sequencing. J Clin Microbiol. 2012 Apr;50(4):1480-3.
5. Mendoza L, Newton JC. Immunology and immunotherapy of the infections caused by Pythium insidiosum. Med Mycol. 2005 Sep;43(6):477-86.
6. Kittichotirat W, Patumcharoenpol P, Rujirawat T, et al. Draft genome and sequence variant data of the oomycete Pythium insidiosum strain Pi45 from the phylogenetically-distinct Clade-III. Data Brief. 2017 Oct 26;15:896-900. doi: 10.1016/j.dib.2017.10.047.
7. Rose SR, Lindsley MD, Hurst SF, et al. Gastrointestinal basidiobolomycosis treated with posaconazole. Med Mycol Case Rep. 2013; 2: 11–14.
8. Grooters, AM. (2007). Pythiosis and Zygomycosis. In Maureen T. Long (Ed.), Equine Infectious Diseases. (pp. 412-418). Elsevier Health Sciences.
9. Van West P, Appiah A, Gow NA. Advances in research on oomycete root pathogens. Physiological and Molecular Plant Pathology 62(2):99-113 · February 2003.

**Primary Author(s):**
Robert Kowtoniuk, DO, William Beaumont Army Medical Center

**Co-Author(s):**
Domingo Rosario, MD; Sonny Huitron, DO; Matthew Perkins

## Eosinophilic Annular Erythema: A Case of Metastatic Carcinoma Presenting as a Rare Figurate Erythema

History: An 88 year-old female with a history of Stage IA endometrial carcinoma status post resection three years prior presented to our hospital with three months of diffuse pruritic rash.

The patient had been admitted following the onset of the rash for management of uremia with sepsis in the setting of weakness and fatigue. She was treated with IV antibiotics but was readmitted when repeat labs drawn in her rehab facility showed a persistent leukocytosis.

At current presentation, the rash continued to spread with no relief from hydrocortisone 1% cream or over-the-counter emollients. She endorsed diarrhea and continued to feel fatigued above her baseline, but review of systems was otherwise negative. Physical exam on admission was notable for large well-demarcated figurate edematous and erythematous plaques, many with hyperpigmented and atrophic centers, on her abdomen, back, and upper and lower extremities.

Pathology: Biopsy of a representative clinical lesion demonstrated eosinophilic spongiosis and a superficial and deep predominantly perivascular infiltrate of eosinophils with admixed neutrophils and lymphocytes. Alcian blue and colloidal iron stains did not reveal increased dermal mucin deposition. No flame figures were observed.

Laboratory: Laboratory testing was notable for leukocytosis of 38.4 with 13.2% eosinophils. CT showed a 9cm centrally necrotic pelvis mass, and fine needle biopsy of the lesion was consistent with poorly differentiated carcinoma.

Diagnosis: Eosinophilic annular erythema in the setting of metastatic uterine carcinoma.

Treatment: Triamcinolone 0.1% ointment for two weeks with marked improvement of her symptoms, and tumor-directed therapy which was ultimately stopped due to patient preference.

**References:**

1. González-López MA, López-Escobar M, Fernández-Llaca H, González-Vela MC, López-Brea M. Eosinophilic annular erythema in a patient with metastatic prostate adenocarcinoma. Int J Dermatol. 2015 Mar;54(3):e80-2.
2. El-Khalawany M, Al-Mutairi N, Sultan M, Shaaban D. Eosinophilic annular erythema is a peculiar subtype in the spectrum of Wells syndrome: a multicentre long-term follow-up study. J Eur Acad Dermatol Venereol. 2013 Aug;27(8):973-9.
3. Rongioletti F, Fausti V, Kempf W, Rebora A, Parodi A. Eosinophilic annular erythema: an expression of the clinical and pathological polymorphism of Wells syndrome. J Am Acad Dermatol. 2011 Oct;65(4):e135-7.

**Primary Author(s):**
Tyler Menge, MD, Harvard Combined Dermatology Residency Training Program

**Co-Author(s):**
Ehsan Azimi, MD, Harvard combined dermatology residency program; Christina Luffman, MD, Beth Israel Deaconess Medical Center; Beverly Faulkner-Jones, MD, BIDMC; Philip Song, MD, Palo Alto Medical Foundation

## Photo-exacerbated Bullous Erythema Multiforme

A 28-year-old previously-healthy woman presented with four days of diffuse rash associated with oral pain. Rash started on her back with subsequent involvement of trunk, extremities, lips, and mouth. She was sitting on the beach the day before, noting significant sun exposure. Review of systems was negative with no history of autoimmune disease. Current medications were turmeric, probiotic, oral contraceptive, and occasional NSAIDs.
Exam revealed two large, well-demarcated, erythematous, edematous plaques with few superimposed vesicles on her back, sparing swimsuit-line. Abdomen, chest, forehead, bilateral arms, legs, palms, and soles had multiple erythematous edematous papules and small plaques, some with central vesicle or bulla formation. Some acral lesions appeared as raised atypical targets. No skin tenderness, Nikolsky negative, and conjunctivae were clear. The vermilion lip, soft palate, and bilateral buccal mucosae had edema, vesicles and erosions. Two days later, rash evolved to include typical and raised atypical targets on extremities.[1,2] Patient was started on oral prednisone, famciclovir and advised to avoid NSAIDs and supplements. Punch biopsies showed acute vacuolar interface dermatitis with subepidermal bullae, consistent with bullous erythema multiforme (EM). Perilesional DIF was negative. HSV 1/2 antibodies initially negative. M. pneumoniae IgG positive and IgM negative, possibly due to prior infection.[3]
Given morphology and histology consistent with bullous EM, and photo-distribution with more striking eruption over sun-exposed skin, she was diagnosed with photo-exacerbated bullous EM. Photo-exacerbated bullous EM has been described previously in few patients and this case is an additional example of this unusual condition.[4,5]

**References:**

1. Bastuji-Garin S, Rzany B, Stern RS, Shear NH, Naldi L , Roujeau J-C. Clinical Classification of Cases of Toxic Epidermal Necrolysis, Stevens-Johnson Syndrome, and Erythema Multiforme. JAMA Dermatology 1993;129:92-6.
2. Assier H, Bastuji-Garin S, Revuz J , Roujeau J-C. Erythema Multiforme With Mucous Membrane Involvement and Stevens-Johnson Syndrome Are Clinically Different Disorders With Distinct Causes. JAMA Dermatology 1995;131:539-43.
3. Tay YK, Huff JC , Weston WL. Mycoplasma pneumoniae infection is associated with Stevens-Johnson syndrome, not erythema multiforme (von Hebra). J Am Acad Dermatol 1996;35:757-60.
4. Fitzpatrick JE, Thompson PB, Aeling JL , Huff C. Photosensitive recurrent erythema multiforme. J Am Acad Dermatol 1983;9:419-23.
5. Huff C , Weston WL. The Photodistribution of Erythema Multiforme. Archives of Dermatology 1980;116:477.

**Primary Author(s):**
Douglas H Atmatzidis, MD, Stony Brook Medicine

**Co-Author(s):**
Vanessa B Voss, Stony Brook University; Marcia G Tonnesen, Department of Dermatology, Stony Brook University Renaissance School of Medicine

## Diffuse dermal angiomatosis: a rare presentation in a patient with non-uraemic calciphylaxis

Patient history: A 36-year-old woman with a background of alcoholic liver disease (ALD) presented with a 4-week history of painful purplish patches on both thighs. On examination, there were large stellate purpuric patches with central necrosis on bilateral thighs and hips.

Biopsies: Skin biopsy demonstrated necrotic epidermis and calcification of arterioles in the subcutaneous fat, suggesting

calciphylaxis. Within the dermis, a patchy infiltrate of pale epithelioid cells was seen with abundant small blood filled lumina, suggesting a diffuse endothelial proliferation corresponding to diffuse dermal angiomatosis (DDA).

Laboratory data: Blood tests showed stable liver function, normal renal function, hypercalcemia of 2.99 mmol/l (adjusted), normal coagulation, but low protein C levels. No cause for hypercalcaemia was identified.

Diagnosis: DDA is a rare, acquired, reactive proliferation of vascular channels between collagen bundles within the dermis, often considered a variant of reactive angioendotheliomatosis[1]. Calciphylaxis is rare but well-described in end-stage kidney disease. Non-uraemic calciphylaxis (NUC) is rarer and can occur in association with ALD, obesity, female gender and protein C deficiency[2], as in our patient. Mortality remains high (50%), primarily from sepsis[3], therefore early recognition is vital. Only 11 cases of DDA in association with calciphylaxis have been reported, and none of DDA in the setting of NUC, as in our case. It is important to consider the diagnosis even in a young patient with normal renal function.

Treatment: Normocalcaemia was restored and sodium thiosulphate infusions were commenced. Our patient had a prolonged admission with sepsis, underwent surgical debridement, recovered and was discharged home.

**References:**


1. Sriphojanart T, Vachiramon V. Diffuse Dermal Angiomatosis: A Clue to the Diagnosis of Atherosclerotic Vascular Disease. Case Rep Dermatol. 2015;7(2):100–106. Published 2015 May 28. doi:10.1159/000430944
2. Nigwekar SU, Wolf M, Sterns RH, Hix JK. Calciphylaxis from nonuremic causes: a systematic review. Clin J Am Soc Nephrol. 2008;3(4):1139–1143. doi:10.2215/CJN.00530108
3. Bhambri A, Del Rosso JQ. Calciphylaxis: a review. J Clin Aesthet Dermatol. 2008;1(2):38–41



**Primary Author(s):**
Ashima Lowe, MBBS, MRCP (uk), Department of Dermatology, Singleton Hospital, Swansea

**Co-Author(s):**
Sharon Blackford, Dermatology Department, Singleton Hospital, Swansea, UK.; Paul Griffiths, SINGLETON HOSPITAL


## A Case of Statin-induced Anti-HMGCR Immune-mediated Necrotizing Myopathy with Dermatomyositis-like Features

Introduction: Anti-HMGCR immune-mediated necrotizing myopathy (IMNM) is a rare complication of statins[1]. We report a case of anti-HMGCR IMNM with dermatomyositis(DM)-like features.

Case report: A 54-year-old woman taking atorvastatin presented with acute and severe proximal muscle weakness (MRC-5 scale:2), dysphagia, dyspnea and a rash on photoexposed areas. Erythemato-violaceous plaques with poikiloderma were noted on peri-orbital regions, anterior chest, upper back, extensor arms and dorsal fingers' joints.
Creatine kinase(CK) level was elevated at 20,305 IU/L. ANA, ENA, anti-dsDNA, and the panel for myositis-specific and myositis-associated autoantibodies (Euroimmun) were negative. Anti-HMGCR autoantibodies (INOVA) were positive. The patient had respiratory muscle weakness and a myopathic electromyogram. Cancer screening was negative. Skin biopsy demonstrated a discrete vacuolar interface dermatitis, dermal interstitial mucin and perivascular and periadnexial lymphocytic infiltrates. Muscle biopsy showed scattered necrotic or regenerative fibers with no inflammatory infiltrates, perifascicular atrophy or vasculopathy.

A diagnosis of statin-induced anti-HMGCR IMNM with DM-like cutaneous features was made. Statin was discontinued and the patient was treated with high-dose corticosteroids, intravenous immunoglobulins(IVIg), methotrexate and hydroxychloroquine. She fully recovered after 6 months of treatment.

Discussion: Statin-induced anti-HMGCR IMNM is a rare entity characterized by severe proximal weakness, marked CK elevation and typically no extramuscular involvement[2]. IVIg in combination with immunosuppressants are often necessary as statin withdrawal and corticosteroids are often not sufficient[3]. The case reported herein is the fourth anti-HMGCR IMNM case associated with DM-like features[4,5,6]. Recognizing DM-like features as a rarely encountered presentation in anti-HMGCR IMNM highlights the importance of autoantibody testing and has significant therapeutic implications.

**References:**
1. Andrew L et al. Autoantibodies against 3-Hydroxy-3-Methylglutaryl-Coenzyme A Reductase (HMGCR) in Patients with Statin-Associated Autoimmune Myopathy. Arthritis Rheum. 2011 March; 63(3): 713–721
2. Kassardjian CD et al. Clinical Features and Treatment Outcomes of Necrotizing Autoimmune Myopathy. JAMA Neurol. 2015 Sep; 72(9):996-1003
3. Troyanov Y et al. Atorvastatin-induced necrotizing autoimmune myositis: An emerging dominant entity in patients with autoimmune myositis presenting with a pure polymyositis phenotype. Medicine (Baltimore). 2017 Jan;96(3): e5694
4. Merlant M et al. Dermatomyositis-like syndrome revealing statin-induced necrotizing autoimmune myopathy with anti-HMGCR antibodies. Ann Dermatol Venereol. 2019 Mar 28. pii: S0151-9638 (19)30084-5
5. Parikh P et al. Anti-3-hydroxy-3-methylglutaryl-coenzyme a reductase autoantibody-positive necrotizing autoimmune myopathy with dermatomyositis-like eruption. Muscle Nerve. 2018 Jun; 57(6): E135-E136
6. Monica Lavian, Tahseen Mozaffar, Namita Goyal Clinical. Dermatomyositis Associated with Anti-HMG-CoA Reductase Antibody Positive Immune Mediated Necrotizing Myopathy: A Case Report. Neurology. April 18, 2017; 88 (16 Supplement)

**Primary Author(s):**
Darosa Lim, MD, Division of Dermatology, Department of Medicine, Centre Hospitalier Universitaire de Montréal (CHUM), Quebec, Canada

**Co-Author(s):**
Océane Landon-Cardinal, Division of Rheumatology, Department of Medicine, Centre Hospitalier Universitaire de Montréal (CHUM), Quebec, Canada; Benjamin Ellezam, CHU Sainte-Justine; Annie Belisle, Centre Hospitalier de l'Université de Montréal, CHUM, Department of Pathology; Annie Genois, Université de Montréal; Jennifer Sirois, Hôpital Pierre-LeGardeur; Josiane Bourré-Tessier, CHUM

## Erythema Elevatum Diutinum in a Young Female with Crohn’s Disease

Patient History: A 25-year-old female with well-controlled Crohn's disease and biopsy-proven cutaneous IgA vasculitis presented with a one-month history of raised, firm lesions on her extensor joints and extremities, with associated arthralgias.

Her physical exam revealed deeply erythematous and firm papulonodules and plaques on both knees, elbows, anterior thighs, and plantar feet.

Biopsies: A punch biopsy from the thigh revealed a densely interstitial, predominantly neutrophilic infiltrate with prominent leukocytoclasia, but lacking fibrin deposition, and set within a stroma of lamellar and concentric collagen. Gram, PAS-D, and acid fast bacilli stains were negative.

Laboratory Data: Both the erythrocyte sedimentation rate and C-reactive protein level were elevated. Antinuclear antibody was positive, with a titer of 1:640 and a diffuse pattern. Comprehensive blood count, metabolic, and autoimmune testing were negative, as were viral hepatitis serologies, HIV, cryoglobulins, rheumatoid factor, Quantiferon-Gold, and urine histoplasma galactomannan antigen tests. Serum IgA levels were elevated at 1107 mg/dL (reference range: 81-463 mg/dL).

Diagnosis: Erythema elevatum diutinum

Treatment: The patient was initially started on a prednisone taper for management of her concomitant IgA vasculitis. She transitioned to oral dapsone, which was discontinued due to severe hemolytic anemia. Despite trials of doxycycline, colchicine, and intralesional triamcinolone, new papulonodules appeared and her older lesions failed to resolve. Ultimately, she pursued surgical shave excisions of the larger lesions, coupled with oral sulfasalazine to prevent lesion recurrence. This regimen abated the development of new lesions.

**References:**
1. Ahmad S, Delarosa M, Kleinman W, Ahmad R. Primary Surgical Treatment of Erythema Elevatum Diutinum. J Hand

Surg Am. 2019;44(6):522.e1-522.e5.
2. High WA, Hoang MP, Stevens K, Cockerell CJ. Late-stage nodular erythema elevatum diutinum. J Am Acad Dermatol. 2003;49(4):764-7.
3. Momen SE, Jorizzo J, Al-niaimi F. Erythema elevatum diutinum: a review of presentation and treatment. J Eur Acad Dermatol Venereol. 2014;28(12):1594-602.
4. Walker KD, Badame AJ. Erythema elevatum diutinum in a patient with Crohn's disease. J Am Acad Dermatol. 1990;22(5 Pt 2):948-52.
5. Wetter DA, Dutz JP, Shinkai K, Fox LP. Cutaneous Vasculitis: Erythema Elevatum Diutinum. In: Bolognia, JL, Schaffer JV, Cerroni L, eds. Dermatology. 4th ed. China: Elsevier, 2018.
6. Yiannias JA, El-azhary RA, Gibson LE. Erythema elevatum diutinum: a clinical and histopathologic study of 13 patients. J Am Acad Dermatol. 1992;26(1):38-44.

**Primary Author(s):**
Emily C. Milam, MD, New York University School of Medicine, The Ronald O. Perelman Department of Dermatology

**Co-Author(s):**
Andrea Neimann, MD, MSCE, NYU School of Medicine; Randie H. Kim, MD, PhD, The Ronald O. Perelman Department of Dermatology, New York University School of Medicine; Shane A. Meehan, MD, New York University School of Medicine; Nooshin K. Brinster, MD, New York University

## Refractory cutaneous-limited facial Rosai Dorfman disease

Rosai-Dorfman disease (RDD) is a rare, benign, non-Langerhans cell histiocytosis characterized by multi-organ involvement that usually presents with fever, painless lymphadenopathy, elevated inflammatory markers, and polyclonal hypergammaglobulinemia.[1–2] Cutaneous-limited RDD is rare, occurring in 3% of cases.[3] We present a healthy 36-year-old woman with a two-and-a-half year history of multiple painless pink to yellowish papules involving her malar and superomedial right cheek. The patient was otherwise asymptomatic and physical exam did not demonstrate lymphadenopathy. Multiple skin biopsies revealed diffuse dermal infiltrates of plasma cells and pale S100+/CD68+/CD1a- histiocytes with notable emperipolesis, confirming a diagnosis of RDD. Thorough laboratory and radiologic workup with positron emission tomography did not show evidence of malignancy or nodal/extra-nodal involvement. She failed to respond to topical or systemic corticosteroids, topical calcineurin inhibitors, topical metronidazole, topical or oral dapsone, or minocycline. Two rounds of pulsed dye laser treatment and a course of low-dose, 1000 cGy localized radiotherapy was unsuccessful. Shave removal of select lesions resulted in localized clearance. Serial intralesional steroid injections led to temporary improvement in the appearance of her papules, but progression continued. She started 15 mg oral methotrexate weekly and preliminary results are promising.[4] Gold standard treatments have not been established in RDD, and the cumulative cure rate for all reported treatments is approximately 29%.[3] Excision remains the most effective intervention, though challenging to implement in cosmetically sensitive areas.[3] This case demonstrates a rare cutaneous variant of RDD and highlights the various treatment modalities used for this chronic, often refractory disease.

**References:**
1. Abla O, Jacobsen E, Picarsic J, et al. Consensus recommendations for the diagnosis and clinical management of Rosai-Dorfman-Destombes disease. Blood. 2018;131(26):2877-2890.
2. Brenn T, Calonje E, Granter SR, et al. Cutaneous rosai-drfman disease is a distinct clinical entity. Am J Dermatopathol. 2002;24(5):385-91.
3. Al-khateeb TH. Cutaneous Rosai-Dorfman Disease of the Face: A Comprehensive Literature Review and Case Report. J Oral Maxillofac Surg. 2016;74(3):528-40.
4. Subash JJ, Kesty C, Kesty KR, Asgari M, Jorizzo J. Low-dose weekly methotrexate used to treat cutaneous Rosai-Dorfman disease. Clin Exp Dermatol. 2018;43(7):849-851.

**Primary Author(s):**
Gowri Kabbur, MD, Department of Dermatology, University of Minnesota

**Co-Author(s):**
Laurel L Wessman, MD, University of Minnesota Department of Dermatology; Ronda S Farah, MD, University of

Minnesota; David R Pearson, MD, University of Minnesota

## A rare cause of nail dystrophy in a manual worker

A 72-year-old builder presented with a 1-year history of right middle fingernail dystrophy. It started as a midline vertical split which bled and was initially treated with an anti-fungal. The split continued to widen and was associated with loss of his distal nail. An initial biopsy of the nail bed showed a basosquamous proliferation, suspicious of squamous cell carcinoma. An excision of the nail complex down to periosteum with full thickness skin graft repair was performed. Histological examination of the nail unit revealed acanthosis, hyperkeratosis and lichenoid inflammation with replacement of the epidermis by atypical cells with scanty cytoplasm and large hyperchromatic nuclei. Immunohistochemistry was positive for cytokeratin 20 and focal positivity for synaptophysin and chromogranin. Histological features were consistent with a merkel cell carcinoma in situ (MCCIS) and a possible area of early invasion. Adjuvant treatment with radiotherapy was considered but felt unsuitable owing to difficulty in irradiating the finger in isolation. Further investigations with CT scanning showed no evidence of metastatic disease.

To date, MCCIS are rare with only a handful of cases in the literature. They are most commonly located within the head and neck region followed by the extremities(1). MCCIS arising from within the nail complex has not previously been reported and we believe our patient to be the first case of this. As merkel cell carcinomas are aggressive tumours, with high recurrence rates of other MCCIS in literature reports, active monitoring and long term follow up will be required in our patient.

**References:**

1. Coggshall K., Tello T.L, North J.P. and Yu S.S. Merkel cell carcinoma. An update and review. 2018. JAAD 78:433-42

**Primary Author(s):**
Wen Ai Woo, BSc(Hons), MBBS, MRCP(UK), Brighton and Sussex University Hospitals

**Co-Author(s):**
Paul Drake, Queen Victoria Hospital Foundation NHS Trust; Claudia DeGiovanni, Brighton and Sussex University Hospitals NHS Trust

## Dermatofibrosarcoma proberans masquerading as an atropic scar in a pediatric patient

An otherwise healthy 10-year-old female presented to the dermatology clinic with a 1.3 x 1.1 cm firm, atrophic, scar-like red brown plaque on the right chest that had been present for 1 year without clinical symptoms. A biopsy was offered initially, however the decision was made to monitor clinically. She was lost to follow-up for over a year but re-presented to the dermatology clinic 2 years later with an appreciable change in the size and appearance of the lesion. The lesion then measured 2.2 x 1.1 cm and was a red-yellow soft plaque with more prominent atrophy and visible vasculature. Excisional biopsy was preformed and pathology showed a cellular and spindled cell dermal proliferation in a storiform pattern with deep extension and infiltration of the subcutaneous adipose tissue. CD34 was strongly and diffusely positive and S-100, AE1-AE3, and CD68 staining were negative. Peripheral and deep margins were positive. All findings were consistent with a diagnosis of dermatofibrosarcoma protuberans. Mohs surgery under local anesthesia was pursued for complete treatment, with intraoperative tumor extension to the musculature and deep subcutaneous fat. The wound was then repaired with a complex linear closure following complete tumor clearance. The patient was last seen 7 months post-surgical treatment and is doing well.

Dermatofibrosarcome protuberans (DFSP) is a rare tumor primarily occurring in adults. Pediatric cases are even rarer and few reports have been published. DFSP Sis typically asymptomatic and slow growing, but can become destructive to local deep tissues if not treated early, as seen in our patient’s case. This entity is important to diagnose and treat early, as untreated or recurrent lesions may develop fibrosarcomatous change and rarely metastasize. As this malignancy has a tendency to invade deeper structures and commonly recur after standard excision, treatment with Mohs micrographic surgery has become the gold standard.

**References:**
1. Loghdey MS, Varma S, Rajpara SM, et al. Mohs micrographic surgery for dermatofibrosarcoma protuberans (DFSP): a single-centre series of 76 patients treated by frozen-section Mohs micrographic surgery with a review of the literature. J Plast Reconstr Aesthet Surg. 2014 Oct;67(10):1315-21.
2. Knight PJ, Reiner CB. Superficial lumps in children: what, when, and why? Pediatrics. 1983 Aug;72(2):147-53.

**Primary Author(s):**
Lucy Ledyard, MD, University of Vermont Dermatology Residency

**Co-Author(s):**
Keith Morley, MD, University of Vermont Medical Center; Christine Weinberger

## Sterile Neutrophilic Folliculitis with Vasculopathy

A 34-year-old male with past medical history of hepatitis C and intravenous drug abuse was admitted with methicillin sensitive Staphylococcus aureus infective endocarditis complicated by septic pulmonary emboli and bacteremia. On hospital day four, the patient developed a folliculitis-like rash on bilateral upper extremities with pink to purple papules, some of which were eroded. Distal lower extremities revealed bright pink macules. Three days later, the lesions on the bilateral upper extremities had evolved into larger, inflamed, firm, pink, centrally umbilicated, semi-translucent papules, with few newly developed scattered similarly appearing lesions on the bilateral lower extremities. Seven days after initial presentation, the lesions began to spontaneously involute, leaving pink, crusted papules and macules without scars. Hematoxylin and eosin stains of punch biopsies demonstrated folliculocentric neutrophilic dermatitis with perifollicular vasculitic changes. Tissue culture was negative. The histopathologic findings and negative cultures led to the final diagnosis of sterile neutrophilic folliculitis with perifollicular vasculopathy. This is a rare entity histopathologically characterized by neutrophilic or suppurative and granulomatous folliculitis accompanied by a folliculocentric vasculopathy. It is described as a cutaneous manifestation of a systemic illness or infectious trigger, and its clinical features vary independently from the underlying medical illness. The exact etiology remains unclear. The leading theory describes an aberrant humoral or cell-mediated immune response to various endogenous or exogenous triggers in a predisposed host. Prompt identification may uncover an underlying systemic disease. Due to the rarity of this clinical entity, there is a paucity of evidence regarding its etiology, diagnosis, and treatment recommendations.

**References:**
1. Magro CM, Crowson AN. Sterile neutrophilic folliculitis with perifollicular vasculopathy: a distinctive cutaneous reaction pattern reflecting systemic disease. Journal of Cutaneous Pathology. 1998;25(4):215-221.
2. Patterson JW. Practical Skin Pathology: a Diagnostic Approach. Philadelphia, PA: Elsevier/Saunders; 2013.
3. Patterson JW. Weedon's Skin Pathology. 4th ed. London: Churchill Livingstone; 2016.

**Primary Author(s):**
Naeha Gupta, DO, MS, Lehigh Valley Health Network

## Telangiectasia Macularis Eruptiva Perstans (TMEP) in an Adult Male with History of Myelofibrosis and Systemic Mastocytosis

A 63-year-old male with 3-year history of primary myelofibrosis was referred to Dermatology clinic for evaluation of a progressive asymptomatic rash on his trunk and arms. A recent, repeat bone marrow biopsy for myelofibrosis disease activity revealed an increase in mast cell aggregates that met diagnostic criteria for systemic mastocytosis. On physical exam, the patient had multiple red-brown macules and patches with a background of prominent telangiectasias symmetrically distributed on his bilateral flanks and proximal medial arms. Darier’s sign was negative. A 4 mm punch biopsy was performed and revealed an increased perivascular infiltrate of pale blue cells with granular cytoplasm that were positive for CD117 and tryptase. Given the clinical presentation and biopsy results consistent with increased cutaneous mast cells, a diagnosis of TMEP was made. Unlike other forms of cutaneous mastocytosis, Darier’s sign is typically negative. Although TMEP is not considered a separate entity in the World Health Organization (WHO) classification of cutaneous mastocytosis, it remains an important clinical and pathologic entity given that approximately 50% of patients will

have systemic involvement. Systemic involvement may manifest as an underlying systemic mastocytosis or less commonly as an associated non-mast cell hematologic disorder, both of which were seen in our patient. There is no gold standard therapy for cutaneous mastocytosis, therefore treatment is tailored toward symptom management. Our patient was started on fexofenadine and cromolyn sodium, and he continues to see Hematology-Oncology for treatment of his underlying myelofibrosis and systemic mastocytosis. Outstanding clinical and histologic images will be presented.

**References:**

1. Severino M, Chandesris MO, Barete S, et al. Telangiectasia macularis eruptiva perstans (TMEP): a form of cutaneous mastocytosis with potential systemic involvement. J Am Acad Dermatol. 2016;74(5):885-891
2. Martin LK, Romanelli P, Ahn YS, et al. Telangiectasia macularis eruptiva perstans with an associated myeloproliferative disorder. Int J Dermatol 2004; 43: pp. 922-924
3. Pardanani A. Systemic mastocytosis in adults: 2019 update on diagnosis, risk stratification, and management. Am J Hematol. 2019;94:363-377

**Primary Author(s):**

Jacob G. Dodd, DO, San Antonio Uniformed Services Health Education Consortium

**Co-Author(s):**

Emily Maxon, DO, San Antonio Military Medical Center; Kevin Krauland, MD, Brooke Army Medical Center; Brittany Lenz, MD, San Antonio Uniformed Services Health Education Consortium

## Novel ABCA12 Mutations Resulting in an Overlapping ARCI Phenotype

Mutations in the keratinocyte lipid transporter ABCA12 are known to cause autosomal recessive congenital ichthyoses (ARCI), including harlequin ichthyosis (HI), lamellar ichthyosis (LI) and congenital ichthyosiform erythroderma (CIE). Our patient was born at 33 weeks via spontaneous vaginal delivery after an uncomplicated pregnancy. At birth he was noted to have impressive, thick hyperkeratosis with armor-like scales over the face and scalp. Additional findings included mild bilateral ectropion, collodion membrane of the limbs with digital contractures, keratotic plugging obscuring the external auditory canals and congenital hydronephrosis. Cutaneous biopsy was not pursued. Ichthyosis panel revealed two heterozygous mutations in ABCA12. The first mutation consisted of a previously unreported, stop gain (nonsense) change of the wild type lysine at codon 298 in exon 8 resulting in premature truncation and representing a likely pathogenic abnormality. The second mutation predicted a single amino acid substitution (missense) of proline to leucine in exon 49 of unknown significance. A heterozygous mutation in FLG with unknown significance was also detected. A diagnosis of ARCI was made with overlapping features of HI and CIE. The patient did well in the NICU, requiring placement in a humidified isolette, daily emollient application and gavage feeding. Tazarotene was initiated for mild lagophthalmos and daily lubricant eye drops for exposure keratopathy. ENT was consulted to assist with management of impacted debris within ear canals. No difficulties with urination or episodes of febrile UTIs to date. This case illustrates the genotypic and phenotypic correlations between ARCIs.

**References:**

1. Peterson H, Lofgren S, Bremmer S, Krol A. Novel ABCA-12 mutations leading to recessive congenital ichthyosis. Pediatr Dermatol. 2013;30(6):e236-7.
2. Takeichi T, Akiyama M. Inherited ichthyosis: Non-syndromic forms. J Dermatol. 2016;43(3):242-51.
3. Oji V, Tadini G, Akiyama M, et al. Revised nomenclature and classification of inherited ichthyoses: results of the First Ichthyosis Consensus Conference in Sorèze 2009. J Am Acad Dermatol. 2010;63(4):607-41.

**Primary Author(s):**

Michael Barton, MD, Oregon Health & Science University

**Co-Author(s):**

Sabra Leitenberger, MD, Oregon Health and Science University

## Keratoacanthoma Mimicker as Harbinger to Worsening EBV Post-Transplant

## Lymphoproliferative Disease

A 64-year-old female with acute myelomonocytic leukemia status-post peripheral blood stem cell transplantation, complicated by cutaneous and gastrointestinal GVHD and EBV viremia, was admitted for failure to thrive. She had cheek swelling and neck CT showed a multi-compartmental necrotic mass. Tonsillar biopsy showed atypical medium-to-large lymphoid cells with irregular nuclei, coarse chromatin, prominent nucleoli with apoptotic bodies and mitotic figures. Immunohistochemistry showed the neoplastic cells express PAX-5/CD79a/MUM1/BLC2/CD30, but negative for CD3/CD10/BCL6/CMYC/CD21/CD138. EBER in situ hybridization and EBV LMP1 were positive, consistent with EBV-positive post-transplant lymphoproliferative disorder (EBV-PTLD). She was treated with rituximab, daratumumab, brentuximab, and palliative radiotherapy, with improving EBV viremia, but subsequently developed a rapidly expanding 2.5-centimeter dome-shaped, pink ulcerated nodule on the shoulder resembling a keratoacanthoma. Punch biopsy showed diffuse infiltration by atypical mononuclear cells with brisk apoptotic and mitotic activity. Immunohistochemistry was positive for PAX-5/CD20/CD79a/lambda immunostain. The cells were negative for CD138/CD34/kappa immunostain/CD33, lysozyme/MPO. EBER in situ hybridization, EBV LMP1 & EBNA2 were positive, confirming the diagnosis of cutaneous EBV-PTLD. She developed new crateriform nodules on the cheek, forearm, and abdomen and irregular opacities in the lungs concerning for EBV-PTLD progression. EBV-PTLD is a known complication of solid organ and stem cell transplantation, with variable clinical presentations, but rarely found in the skin. Treatment includes reduction of immunosuppression to restore EBV-specific cellular immunity. Other treatments include chemotherapy, anti-CD20 monoclonal antibodies, surgical excision for localized disease, and EBV cytotoxic T-lymphocytes. Despite downtrending EBV-DNA level, disease progression may be diagnosed by a dermatologist.

**References:**


1. Dharnidharka VR, Webster AC, Martinez OM, Preiksaitis JK, Leblond V, Choquet S. Post-transplant lymphoproliferative disorders. Nat Rev Dis Primers. 2016 Jan 28;2:15088
2. Andreone P, Gramenzi A, Lorenzini S, et al. Posttransplantation Lymphoproliferative Disorders. Arch Intern Med. 2003;163(17):1997–2004


**Primary Author(s):**


Brian Hibler, MD, Memorial Sloan Kettering Cancer Center


**Co-Author(s):**


Alina Markova, MD, Memorial Sloan Kettering Cancer Center; Hugo Castro-Malaspina, MD, Memorial Sloan Kettering Cancer Center; Parastoo Dahi, MD, Memorial Sloan Kettering Cancer Center; Cecilia Lezcano, MD, Memorial Sloan Kettering Cancer Center


## A1AT panniculitis

Several therapies for α1-antitrypsin deficiency-associated panniculitis have been tried over the years, with the most successful being intravenous Prolastin (α1-antitrypsin) infusions. The treatment is given in doses of 60–120 mg/kg once a week, the higher doses being used for patients with pulmonary or hepatic disease. However, this therapy is off-label use for treatment of cutaneous symptoms in most countries. Prolastin treatment is extremely expensive, costing $143 per 1 g vial. Dapsone has been effectively used in numerous cases; most often using doses of 50–150 mg daily.The drug interferes with the action of myeloperoxidase and thus preserves the already limited amount of α1-antitrypsin available to modulate the reactivity of inflammatory cells. A1AT-related panniculitis can be refractory to therapy and require commercial purified a1-antitrypsin infusions. Early identification of A1AT deficiency especially of the homozygous ZZ type may help prevent development.

**References:**


1. Aronson IK, Worobec SM. Cytophagic histiocytic panniculitis and hemophagocytic lymphohistiocytosis: an overview. Dermatol Ther (Heidelb) 2010;23:389–402.
2. Crotty CP, Winklemann RK. Cytophagic histiocytic panniculitis with fever, cytopenia, liver failure, and terminal hemorrhagic diathesis. J Am Acad Dermatol 1981;4:181–194.
3. Patterson T, et al. Cytophagic histiocytic panniculitis: a report of four cases. Br J Dermatol 1992;127:635–640.

4. White JW, Winkleman RK. Cytophagic histiocytic panniculitis is not always fatal. J Cutaneous Pathol 1989;16:137–144.
5. Reiner AP, Spivak JL. Hematophagic histiocytosis: a report of 23 new patients and a review of the literature. Medicine 1988;647:369–388.
6. Matsue K, et al. Successful treatment of cytophagic histiocytic panniculitis with modified CHOP-E: cyclophosphamide, adriamycin, prednisone, and etoposide. Am J Clin Oncol 1994;17:470–474.
7. Ostrov BE, et al. Successful treatment of severe cytophagic histiocytic panniculitis with cyclosporine A. Semin Arthritis Rheum 1996;25:404–413.
8. Blanco I, et al. S. Neutrophilic panniculitis associated with alpha-1-antitrypsin deficiency: an update. Br J Dermatol 2016; 174: 753–62.

**Primary Author(s):**
Thomas Klis MD, UIC

**Co-Author(s):**
Iris Aronson MD; Marylee Braniecki MD

## Cutaneous Langerhans Cell Histiocytosis associated with previously undiscovered systemic histiocytosis

A 64-year-old woman presented for a second opinion of a scalp and intertriginous eruption. Nine months prior she presented to another facility with itchy brown spots on the scalp and weepy, itchy and painful eruption in the inframammary, groin and perianal area. Initial biopsy from the trunk had shown “psoriasiform dermatitis.” She was treated as inverse psoriasis and seborrheic dermatitis with topical treatments and eventually apremilast without improvement. Repeat biopsy, from the inframammary area had shown a necrotic ulcer with suppurative and mixed inflammation with some increased Langerhans cells that were thought to be reactive. Her past medical history was significant for diabetes insipidus (DI) which was diagnosed 10 years prior with empty sella on MRI. She had been treated with desmopressin.

Physical exam showed numerous 4-5 mm flat dark red-brown papules on scalp. Inframammary, infrapannicular, inguinal folds and perianal area exam revealed purpuric purple papules and exquisitely tender erosions and slit-like fissures. Brain MRI at the time of DI diagnosis had shown abnormal thickening of pituitary infundibulum thought to be due to small pituicytoma vs. lymphocytic hypophysitis vs. granulomatous disease. Several follow-up brain MRIs showed similar findings. The brain MRI at the time of referral showed significant interval increase in the size of an enhancing soft tissue mass involving the hypothalamus and mammillary bodies measuring 18 x 13 x 8 mm concerning for neoplasia.
Scalp and abdominal punch biopsies showed epidermotropism of mononuclear cells (positive for S100, CD1a, CD68), fibroplasia, abundant eosinophils and Langerhans cells in the deep dermis. Diagnosis of Langerhans cell histiocytosis (LCH) was made. Bone marrow biopsy and PET scan were negative for LCH involvement. The patient received systemic chemotherapy for cutaneous and presumed CNS disease. Repeat brain MRIs showed interval decrease in hypothalamus soft tissue mass. Her painful and purpuric skin lesions improved as well.

**References:**

1. Arico M. Langerhans cell histiocytosis in adults: more questions than answers? Eur J Cancer. 2004; 40(10): 1467-73.
2. Girschikofsky M, Arico M, Castillo D, et al. Management of adult patients with Langerhans cell histiocytosis: recommendations from an expert panel on behalf of Euro-Histio-Net. Orphanet J Rare Dis. 2013; 8: 72.

**Primary Author(s):**
Shahab Babakoohi, MD, FACP, Medical College of Wisconsin

**Co-Author(s):**
Barbara D Wilson, MD, Medical College of Wisconsin

## Connexin 26 missense mutation resulting in syndromic hearing loss with palmoplantar keratoderma

A 34-year-old lady originally from Nigeria presented with a painful left fifth toe for two years. This was treated as tinea pedis with topical agents and analgesics without improvement. She had bilateral hyperkeratosis on the palms and soles, and sensorineural hearing loss from the age of 14. Three siblings also has palmoplantar hyperkeratosis, one sister with hearing loss; the suspected diagnosis was of Vohwinkel's syndrome.

Examination revealed a band of fibrous tissue around the interphalangeal joint of the left fifth toe causing a strangulated appearance consistent with a pseudoainhum. She also has 'star fish' hyperkeratosis on her knuckles. Due to the pain she was referred to have her affected toe amputated.

Further genetic studies identified p.Gly59Ala, where a heterozygous single nucleotide change, c176G>C in GJB2 (encoding connexion 26) leading to a glycine substitution by alanine. This is not true Vohwinkels syndrome but with phenotypic overlap. The skin and hearing abnormalities were likely caused by the missense mutation in connexion 26.

Various mutations in the GJB2 gene results in different disease severity - syndromic/non-syndromic deafness with accompanying skin disease. The inheritance pattern can be autosomal dominant or recessive.[1] However, the pathophysiology in CX26 mutation causing skin pathology remains unclear.[1]

We describe a case of syndromic hearing loss of autosomal dominant inheritance with palmoplantar keratoderma caused by a p.Gly59Ala mutation in the GJB2 gene, this is only the second case reported.[2] This case highlights the importance of recognising cutaneous manifestations in genetic diseases and appropriate genetic testing in the patient and family.

**References:**


1. Jack R. Lee and Thomas W. White* Connexin-26 mutations in deafness and skin disease Expert Reviews in Molecular Medicine 11:e35 · November 2009
2. Heathcote K, Syrris P, Carter ND, Patton, MA. A connexin 26 mutation causes a syndrome of sensorineural hearing loss and palmoplantar hyperkeratosis. J Med Genet 2000; 37: 50–51.



**Primary Author(s):**
Dr. Mun Wai Lam, Northampton General Hospital

**Co-Author(s):**
Dr. David Veitch, Nottingham University Hospitals; Dr. Pick Ngor Woo, Northampton General Hospital


## Neutrophils in Cutaneous Kikuchi-Fujimoto disease: a potential pitfall for a misdiagnosis of histiocytoid Sweet syndrome

Kikuchi-Fujimoto disease (KFD) is a benign self-limiting disease with up to 40% of patients presenting with cutaneous manifestations, most commonly with erythematous papules and patches[1]. Histopathological findings typically include a dermal infiltrate of myeloperoxidase-positive histiocytes with prominent nuclear dust in the absence of neutrophils[2,3]. We present a case of KFD with neutrophils in the skin biopsy, highlighting a potential pitfall for a misdiagnosis of histiocytoid Sweet syndrome.

A 68-year-old Chinese man presented with a 2-week history of itchy rashes on the chest and limbs associated with fever, chills, arthralgia, conjunctivitis, weight loss and cervical lymphadenopathy. His background medical problems include Hashimoto's thyroiditis and hyperlipidaemia.

On examination, there were multiple urticated papules on his chest, upper limbs and thighs. There were no pustules or blisters. Few non-tender sub-centimeter level 2 cervical lymph nodes were palpable.

Skin biopsy from a forearm papule revealed a dense superficial and deep perivascular and interstitial infiltrate of myeloperoxidase-positive, CD163-positive crescenteric histiocytes with leukocytoclasis and some lymphocytes. Mature neutrophils were also seen within the infiltrate. CD123-positive plasmacytoid dendritic cells were few. In view of the presence of neutrophils, a diagnosis of histiocytoid Sweet syndrome was initially preferred over KFD. However, the latter diagnosis proved to be the accurate one after cervical lymph node biopsy showed acute necrotizing lymphadenitis.

Apart from a raised erythrocyte sedimentation rate of 135mm/hr, further autoimmune, infective and malignancy work-up including a bone marrow trephine and aspirate were unremarkable. The patient was treated with oral prednisolone at 0.5mg/kg/day with good clinical response.

**References:**


1. Perry AM, Choi SM. Kikuchi-Fujimoto Disease: A Review. Arch Pathol Lab Med. 2018;142(11):1341-1346.
2. Williams EE, Patel N, Guo H, et al. Kikuchi-Fujimoto disease diagnosed by correlating skin and lymph node biopsies. JAAD Case Rep. 2019 Apr;5(5):416-418.
3. Pepe F, Disma S, Teodoro C, et al. Kikuchi-Fujimoto disease: a clinicopathologic update. Pathologica. 2016;108(3):120-129.


**Primary Author(s):**


Pei Ming Yeo, MBBS, MRCP, MOH Holdings, Singapore


**Co-Author(s):**


Chee Hian Tan, National Skin Centre, Singapore; Ziying Vanessa Lim, National Skin Centre; Huili Kwong; Joyce Siong See Lee, National Skin Centre; Ding Yuan Wang, National Skin Centre; Yen Loo Lim, National Skin Centre; Hua Liang Joel Lim


## Acute Syndrome of Apoptotic Pan-epidermolysis

Patient history: 63 y/o white female w/ 10-year history of stable, untreated chronic cutaneous lupus. A systemic lupus workup in 2013 was negative. She flared ~1 month prior to presenting to us and was started on hydroxychloroquine. Four days after starting treatment she acutely worsened with increased skin / mucosal involvement, odynophagia, and systemic symptoms (fever, malaise). She continued to worsen over the next week and was transferred to our hospital for further evaluation. Other than hydroxychloroquine she had not started any other new medications or supplements in over 2 years. Physical exam showed pink plaques, some of which were polycyclic, with erosions and desquamating scale on upper extremities, trunk, and face; hints of denuded bullae were also noted. Additionally, she had erosions of her hard palate, lips, and eyelid mucosa.

Biopsies: Punch biopsy showed a pauci-inflammatory sub-epidermal split with lymphohistiocytic perivascular and periadnexal inflammation in addition to full-thickness epidermal necrosis. DIF showed linear granular BMZ deposition of IgA, IgM, and C3.

Laboratory data: Positive: SS-A, anti-histone, anti-smith, anti-RNP antibodies; low CH50
Negative: ANA, anti-chromatin, anti-dsDNA, SS-B antibodies
Normal ESR, CRP, C3, C4, CBC, BMP

Diagnosis: TEN-like presentation of sub-acute cutaneous lupus (spectrum of acute syndrome of apoptotic pan-epidermolysis).

Treatment: Stopped hydroxychloroquine. Started PO and topical steroids. Eventually transitioned to myophenolate mofetil.

**References:**


1. Rowell NR, Beck JS, and Anderson JR: Lupus erythematosus and erythema multiforme-like lesions. Arch Dermatol 1963; 88: pp. 176-180.
2. Braverman IM. Skin signs of systemic disease. Philadelphia: WB Saunders, 1998.
3. Ting W, Stone M, Racila D, Scofield R, Sontheimer R. Toxic epidermal necrolysis-like acute cutaneous lupus erythematosus and the spectrum of the acute syndrome of apoptotic pan-epidermolysis (ASAP): a case report, concept review and proposal for new classification of lupus erythematosus vesiculobullous skin lesions. Lupus. 2004;13(12):941-950.


**Primary Author(s):**


Cory Duprey, MD, Saint Louis University.

**Co-Author(s):**
Daniel West, MD; Nicole Burkemper, MD, Saint Louis University

## Atypical presentations of deep cutaneous mycotic infections

Isolated deep cutaneous mycotic infections are uncommon in immunocompetent patients[1]. We present three patients who were found to have atypical, deep cutaneous mycotic infections. The first patient was a 64-year-old, immunocompetent woman who presented with a bright red, indurated plaque on the left axilla, thought to be cellulitis. Histopathology revealed a necrotizing panniculitis with granulomatous inflammation and fungal elements, which were identified as Histoplasma capsulatum on fungal polymerase chain reaction (PCR). The second patient was a 79-year-old man without known risk factors who presented with a hyperkeratotic papule on the left dorsal hand, suspicious for a keratinocyte malignancy. A biopsy demonstrated marked granulomatous inflammation and Grocott methenamine silver-positive organisms. Fungal culture grew Penicillium. The third patient was a 64-year-old immunocompetent man who presented with an erythematous papule on the left dorsal forearm, again thought to be a keratinocyte malignancy. A biopsy revealed granulomatous inflammation with fungal organisms on periodic acid-Schiff stain, and fungal PCR revealed Cryptococcus neoformans. With the emergence of novel immunomodulatory therapies, increased prevalence for atypical mycotic infections can be expected. Improved characterization of deep cutaneous mycotic infections, especially without evidence of high-dose immunosuppression or other recognized risk factors, will prepare physicians for prompt clinical and histological recognition and treatment to decrease the risk for systemic dissemination or cutaneous extension.

**References:**

1. Bolognia, Jean, Jorizzo, Joseph L., Schaffer, Julie V., eds. Dermatology. [Philadelphia]: Elsevier Saunders, 2012. Print.

**Primary Author(s):**
Hannah M. Pederson, MD, Baylor Scott & White Health

**Co-Author(s):**
Katie B. Homan, MD, Department of Dermatology, Baylor Scott & White Medical Center; Rachael C. Saporito, MD, Baylor Scott & White Dermatology; Palak K. Parekh, MD, Baylor Scott & White Medical Center

## A rare case of porokeratosis ptychotropica in a 19-year-old female

A 19-year-old female presented with a pruritic perianal rash present for about 2 years. The rash failed to improve with terbinafine 1% cream, pimecrolimus 1% cream, and hydrocortisone 2.5% cream. Physical exam revealed an erythematous annular plaque on the right inter-gluteal cleft. Punch biopsy of the right inter-gluteal cleft revealed foci of cornoid lamella with underlying loss of granular cell layer and microfoci of dyskeratotic cells. Diagnosis was consistent with porokeratosis ptychotropica (PP). PP is a rare variant of porokeratosis classically described as a symmetrical pruritic eruption of erythematous papules and plaques localized to the gluteal cleft and extending to the buttocks. The lesions may coalesce centrally and form satellite lesions. On histopathology, PP demonstrates epidermal hyperkeratosis, multiple cornoid lamellae in the stratum corneum, focal hypogranulosis, and dyskeratotic cells underlying the column of parakeratosis. The key distinguishing feature on histopathology is that multiple cornoid lamellae can be seen throughout the PP lesion, as opposed to in the periphery as seen in other porokeratosis variants. The etiology of PP has not been clearly defined, but most cases seem to appear sporadically. PP is frequently misdiagnosed as other entities. Treatment options are optimized toward symptom management as topical therapies such as corticosteroids, immunomodulators and topical and oral retinoids have only yielded partial response with little effect on the lesion itself. It is important to monitor PP lesions as there is a chance they may progress to malignancy, as reported in other types of porokeratosis and in one case of PP.

**References:**

1. Yeo J, Winhoven S, Tallon B. Porokeratosis ptychotropica: a rare and evolving variant of porokeratosis. J Cutan Pathol. 2013;40(12):1042-1047.
2. Wang Q, Wan H, Liu W, Zhang L. Porokeratosis ptychotropica: A giant lesion in a Chinese man. Australas J Dermatol. 2017;58(3):e149-e150.

3. Liu W, Liu JW, Ma DL. Porokeratosis Ptychotropica. JAMA dermatology. 2019;155(7):845.
4. Mazori DR, Shvartsbeyn M, Meehan SA, Tarsis SL. Transformation of porokeratosis ptychotropica into invasive squamous cell carcinoma. Int J Dermatol. 2017;56(6):679-680.

**Primary Author(s):**
Stephanie Kao, BA, George Washington University School of Medicine and Health Sciences

**Co-Author(s):**
Olivia Lai, University of Illinois at Chicago; Marylee Braniecki, University of Illinois at Chicago Hospital; Michelle Bain, University of Illinois at Chicago

## Malignant Angiosarcoma Masquerading as Benign Epithelioid Hemangioma

A healthy 67-year-old female presented with rapidly growing, dark red nodules on the scalp. Three months prior she noted a single red, non-painful, nodule that was excised and diagnosed as a benign hemangioma. A punch biopsy was performed and independently evaluated at four academic centers. The epidermis was unremarkable, and the dermis showed multinodular proliferation of immature vessels in myxoid stroma lined by epithelioid and spindled endothelial cells with increased cellularity, mitoses, and vacuolization. Occasional eosinophils and lymphocytes were noted. Immunohistochemistry was positive for factor VIII, CD34, ERG, and SMA. Frank atypia was not identified. These findings suggested a benign vascular neoplasm consistent with epithelioid hemangioma (EH). Over two months the scalp lesions showed explosive growth. PET-CT revealed calvarium invasion, metastatic lymphadenopathy, and innumerable soft tissue masses. Lymph node FNA mirrored skin histopathology. Clinically, despite benign pathology, these findings were more consistent with aggressive angiosarcoma. The patient has continued to show progression of disease with poor prognosis despite therapy with radiation, paclitaxel, doxorubicin, and docetaxel/gemcitabine. EH is a rare, slow-growing, dermal, vascular proliferation treated with curative surgical excision, while angiosarcoma is a highly aggressive, metastatic, endothelial malignancy with high mortality. Differential diagnosis of vascular neoplasms is challenging given overlapping pathologic features, and clinical correlation is critical. EH is at the low-grade end of a spectrum occupied by the intermediate-grade malignant epithelioid hemangioendothelioma and the high-grade angiosarcoma, which shows atypia on pathology. An aggressive vascular entity with clinical features of angiosarcoma and pathologic features of EH has not been previously reported.

**Primary Author(s):**
Raj Chovatiya, MD, PhD, Northwestern University

**Co-Author(s):**
Joaquin Brieva, MD, Northwestern University

## A Case of Amyloidosis Cutis Dyschromia treated with Acitretin

Amyloidosis cutis dyschromia (ACD) is a rare subtype of primary cutaneous amyloidosis. Originally presented by Morishima in 1970, it is characterized by four diagnostic criteria: hyperpigmented patches, little to no itch, onset prior to puberty and focal papillary amyloid deposition[(1)]. To our knowledge, less than 50 cases have been reported. Herein, we discuss a case of a 34-year-old male presenting with a lifelong history of diffuse, pruritic dyspigmentation.

On presentation, hyperpigmented reticulated patches with scattered open comedones were present over the neck, posterior trunk, axillae, and groin. Laboratory studies revealed mild transaminitis but were otherwise within normal limits.

Biopsies demonstrated aggregates of pink globular material positive for Congo Red within the papillary epidermis. A superficial perivascular lymphocytic infiltrate was noted along with cystically dilated follicles. A diagnosis of amyloidosis cutis dyschromia was confirmed. The patient was treated with acitretin starting at 10 mg and slowly progressing to 25 mg daily given his elevated liver enzymes. After one month of treatment there was resolution of pruritus, and after three months there was significant improvement in the skin dyspigmentation.

Differential diagnosis for ACD includes Dowling Degos, poikiloderma-like amyloidosis, xeroderma pigmnentosum, and dyschromatosis universalis hereditaria[(2,3,4,5,6)]. Treatment options are primarily based on case reports. They include topical

retinoids, topical steroids, keratolytics, capsaicin, CO2 laser[3,4,7]. Routine use of sunscreen is recommended by consensus (8). Acitretin has produced promising results in a few cases[9,10], hence our treatment choice. We believe our case adds to the literature of ACD and may help guide clinicians to appropriate treatment choices.

**References:**


1. Morishima T. A clinical variety of localized cutaneous amyloidosis characterized by dyschromia (amyloidosis cutis dyschromica). Jpn J Dermatol Series 1970;80:43-52.
2. Tiwary A, Mishra D , Chaudhary S. Amyloidosis cutis dyschromica: A rare dyschromic subtype of primary cutaneous amyloidosis. Pigment International 2016;3:33-6.
3. Kuseyri O, Haas D, Lang N, Schäkel K , Bettendorf M. Amyloidosis Cutis Dyschromica, a Rare Cause of Hyperpigmentation: A New Case and Literature Review. Pediatrics 2017;139:e20160170.
4. Garg T, Chander R, Jabeen M, Barara M, Mittal K, Jain M et al. Amyloidosis cutis dyschromica: a rare pigmentary disorder. J Cutan Pathol 2011;38:823-6.
5. Verma S , Joshi R. Amyloidosis cutis dyschromica: A rare reticulate pigmentary dermatosis. Indian Journal of Dermatology 2015;60:385-7.
6. Kutlu O, Cetinkaya PO, Unverdi H, Vahapoglu G , Eksioglu M. Late-onset amyloidosis cutis dyschromica: an unusual case. Dermatol Online J 2019;25.
7. Qiao J, Fang H , Yao H. Amyloidosis cutis dyschromica. Orphanet Journal of Rare Diseases 2012;7:95.
8. Lamadrid-Zertuche AC. Amyloidosis cutis dyschromica a rare variant of primary cutaneous amyloidosis. Journal of the American Academy of Dermatology 2018;79:AB35.
9. Ozcan A, Senol M, Aydın NE , Karaca S. Amyloidosis Cutis Dyschromica: A Case Treated with Acitretin. The Journal of Dermatology 2005;32:474-7.
10. Mahon C, Oliver F, Purvis D , Agnew K. Amyloidosis cutis dyschromica in two siblings and review of the epidemiology, clinical features and management in 48 cases. Australasian Journal of Dermatology 2016;57:307-11.



**Primary Author(s):**

Kerry Hennessy, MD, University of South Florida

**Co-Author(s):**

Anna Kim, MD, University of South Florida Department of Dermatology; Lucia Seminario-Vidal, USF; Lauren Metterle, University of South Florida Department of Dermatology & Cutaneous Surgery, Tampa, FL; John Denigris, University of South Florida Department of Dermatology and Cutaneous Surgery; Allison Weinkle, University of South Florida Dermatology


## Recurrent fungating tumor and a chronic rash in an immunosuppressed transgender patient: A case of Buschke-Lowenstein Condyloma and Epidermodysplasia Verruciformis

A 46-year old transgender female with history of HIV (most recent CD4 count of 719, 25%) and distant history of testicular cancer status post radiation therapy presented for evaluation of a previously resected anal condyloma and a diffuse asymptomatic rash on the trunk and extremities. Physical examination of the perianal region revealed a bulky, verrucous mass protruding outward from the anus and involving the medial buttocks. Examination of the chest and arms showed numerous guttate, pink, flat-topped papules coalescing into plaques. Incisional biopsy of the perianal mass showed a verrucous squamous neoplasm with koilocytic perinuclear vacuoles consistent with verrucous carcinoma, Buschke-Lowenstein type. In-situ hybridization (ISH) for low risk (6 total) and high risk (18 total) HPV was negative. Shave biopsy of the chest revealed epidermal acanthosis with coarse hypergranulosis and abundant lavender cytoplasm wihin keratinocytes. These changes were diagnostic of Epidermodysplasia verruciformis (EDV). While this patient's verrucous carcinoma had negative ISH of multiple HPV serotypes, the patient has EDV, which has a well-known HPV association. Given her history of immunosuppression, known EDV, and radiation to the site, we postulate that HPV infection from serotypes that induce EDV may be the cause of this patient's verrucous carcinoma. Alternatively, a less common pathogenic subtype may be playing a role. The patient will undergo definitive treatment for the tumor with abdominoperineal resection. There is no treatment for EDV, but patients require strict observation and preventive therapy given increased risk of squamous cell carcinoma.

**References:**
1. Myers DJ, Fillman EP. Epidermodysplasia verruciformis. Statpearls. Treasure Island (FL)2019.
2. Ben Kridis W, Werda I, Charfi S, et al. Buschke - lowenstein anal tumor: An ambiguous entity. Exp Oncol. 2019;41(2):182-184. doi: 10.32471/exp-oncology.2312-8852.vol-41-no-2.13119.

**Primary Author(s):**
Norhan Shamloul, Drexel University College of Medicine

**Co-Author(s):**
Ricardo Guerra, University of Virginia Dermatology; Merrick Kozak, University of Virginia; Mary Noland, University of Virginia

## Nevus anelasticus, an unusual variant of a rare cutaneous entity

A 34-year old male with no significant dermatological history presented for evaluation of asymptomatic lesions on his right flank present for greater than ten years. Physical exam revealed multiple grouped, non-tender, 2-3 mm, skin-colored papules on the right flank. A 3 mm punch biopsy revealed an exophytic papule composed of increased collagen and increased mucin seen on hematoxylin & eosin and Alcian blue stained sections. Weigert stain showed the complete absence of elastic tissue in the papillary and upper reticular dermis, and marked decreased elastic tissue throughout the deep dermis consistent with the diagnosis of nevus anelasticus with mucinous change. Nevus anelasticus is a rare cutaneous condition first described in 1921, and as its name implies, is characterized by the fragmentation or absence of elastic tissue in the dermis.[1,2] Debate has challenged the exact classification of this condition: whether it represents its own entity, is a subtype of connective tissue nevus, or falls on a spectrum of conditions along with eruptive collagenoma and papular elastorrhexis.[2,3] Clinically and histologically, characteristics that distinguish nevus anelasticus from other entities include the unilateral and perifollicular distribution of the papules, the lack of elastic fibers in the upper and mid dermis, and typically the lack of change in arrangement or size of the collagen bundles (although collagen is increased in the presented case).[4] No specific treatment is described in the literature for nevus anelasticus; however, intralesional triamcinolone injections and cryotherapy have been used to treat similar conditions such as papular elastorrhesis.[5]

**References:**
1. Andres-Ramos, I., et al., Cutaneous Elastic Tissue Anomalies. Am J Dermatopathol, 2019. 41(2): p. 85-117.
2. Ryder, H.F. and R.J. Antaya, Nevus anelasticus, papular elastorrhexis, and eruptive collagenoma: clinically similar entities with focal absence of elastic fibers in childhood. Pediatr Dermatol, 2005. 22(2): p. 153-7.
3. Xue, R., L. Yuan, and H. Huang, Papular elastorrhexis. Indian J Dermatol Venereol Leprol, 2015. 81(5): p. 529-31.
4. Wang, A.R., et al., Nevus anelasticus: how should such lesions be classified? J Cutan Pathol, 2014. 41(6): p. 519-23.
5. Ma, H.J., et al., Small non-follicular white papules on the back of the hands and the mandibular region. J Dtsch Dermatol Ges, 2016. 14(2): p. 193-5.

**Primary Author(s):**
Renata Dalla Costa, MD, Warren Alpert Medical School at Brown University, Department of Dermatology

**Co-Author(s):**
Leslie Robinson-Bostom, The Warren Alpert Medical School of Brown University; Sara Dill, Luminous Dermatology

## Ulcers in a patient with recent travel to the Dominican Republic, wildlife exposure, and high-risk sexual behavior

Patient History: A 61-year-old male with chronic untreated Hepatitis C presented with one month of painless cutaneous ulcers on his genitalia, buttocks, and lower extremities. He reported recent three-month vacation in the Dominican Republic where he was exposed to wildlife, contaminated water, and unprotected high-risk sexual behavior with numerous sex workers. Skin exam revealed well-circumscribed, symmetrical, non-tender, purulent, round, superficial ulcers with a depressed base, raised edge, and surrounding erythema.

Laboratory Data: Initial laboratory evaluation was notable for an elevated glucose but was otherwise unremarkable. Wound culture grew staphylococcus aureus and streptococcus pyogenes. Comprehensive infectious work up was negative for HSV, HIV, syphilis, chlamydia trachomatis, and neisseria gonorrhoeae.

Diagnosis: Ecthyma, based on clinical suspicion.

Treatment: He was initially treated with intramuscular penicillin G benzathine given concern of primary syphilis. Then, he was empirically started on vancomycin and ceftriaxone, with transition to a ten-day course of oral clindamycin given culture sensitivities consistent with MRSA. At clinic follow-up one week later, he showed significant improvement of the ulcerative lesions.

Conclusion: The broad differential for cutaneous ulcerations in a patient with recent travel, unsanitary environmental exposure, and high-risk sexual behavior will be reviewed. This case is a presentation of a relatively common skin infection that had delayed initiation of treatment given high concern for sexually-transmitted infection. Accordingly, ecthyma should be included in the differential of a patient with genital ulcers even when accompanied by high risk sexual behavior.

**References:**


1. Hartman-Adams, H., C. Banvard, and G. Juckett, Impetigo: diagnosis and treatment. Am Fam Physician, 2014. 90(4): p. 229-35.
2. Hochedez, P., et al., Skin and soft tissue infections in returning travelers. Am J Trop Med Hyg, 2009. 80(3): p. 431-4.
3. Sehgal, V.N., D. Pandhi, and A. Khurana, Nonspecific genital ulcers. Clin Dermatol, 2014. 32(2): p. 259-74.



**Primary Author(s):**
Kevin R Patel, MD, Massachusetts General Hospital, Harvard Medical School

**Co-Author(s):**
Jennifer E Yeh, MD, PhD, Harvard Combined Dermatology Residency Program; Daniela Kroshinsky, MD, MPH, Massachusetts General Hospital, Harvard Medical School


## Brachytherapy Treatment of Primary Cutaneous Anaplastic Large Cell Lymphoma in a 6-year-old Girl

A 6-year-old female presented to our institution for an asymptomatic violaceous nodule on the right ventral forearm of one-month duration. Beginning as a small red bump that looked “like a bug bite,” It grew quickly over the next few weeks and evolved a purple center.

Skin biopsy was obtained showing dense infiltration of atypical CD30+ lymphocytes in the dermis. Anaplastic lymphoma kinase (ALK) staining was negative. PET CT was negative for lymph node or visceral involvement. Clinical, histologic, and radiologic data were most consistent with the diagnosis of primary cutaneous anaplastic large cell lymphoma.

She received definitive high dose rate iridium 192 surface applicator brachytherapy to the gross lesion and a clinical target area of 2cms with 20 Gy divided into 8 daily fractions. This modern technology has greater conformality than standard electron therapy when the clinical target is significantly curved, allowing non-involved normal tissue to be spared. The patient had complete resolution of the lesion. She had no functional deficit throughout. She developed mild radiation dermatitis and associated hyperpigmentation that resolved within 2-3 months. 8 months since completion of therapy, there has been no evidence of recurrent disease. We report conformal modern high dose rate surface brachytherapy as a well-tolerated therapy with low toxicity for indolent cutaneous lymphoma in children. The literature surrounding treatment of primary cutaneous anaplastic large cell lymphoma in children is sparse. We believe this case would be a valuable contribution to this literature and that this modality be preferred for this rare cancer population.

**References:**


1. Goddard AL, Vleugels RA, LeBoeuf NR, O'Farrell DA, Cormack RA, Hansen JL, et al. Palliative Therapy for Recalcitrant Cutaneous T-Cell Lymphoma of the Hands and Feet With Low-Dose, High Dose-Rate Brachytherapy. JAMA Dermatol. 2015;151(12):1354-1357.DOI: 10.1001/jamadermatol.2015.3028
2. Tao J, Hentz C, Mysz ML, Rashed I, Eilers D, Swan J, et al. Extensive Cutaneous T-Cell Lymphoma of the Feet

Treated with High-Dose-Rate Brachytherapy and External Beam Radiation. Case Rep Dermatol Med. 2018;2018:5610925.DOI: 10.1155/2018/5610925
3. Prieto-Torres L, Rodriguez-Pinilla SM, Onaindia A, Ara M, Requena L, Piris MA. CD30-positive primary cutaneous lymphoproliferative disorders: molecular alterations and targeted therapies. Haematologica. 2019;104(2):226-235.DOI: 10.3324/haematol.2018.197152

**Primary Author(s):**
Lindsay McCormack, BA, Boston Children's Hospital

**Co-Author(s):**
Phillip Devlin, MD, Harvard Medical School; Lynda Vrooman, MD; Jennifer Huang, MD, Boston Children's Hospital/Harvard Medical School

## Multiple melanomas in LEOPARD syndrome

62 year old Fitz 2 male with a history of LEOPARD syndrome with a PTPN 11 missense mutation presented initially for a skin check with a remote history of melanoma (0.5mm Breslow). He demonstrated numerous lentigines and ocular hypertelorism. He had known mitral valve prolapse and a right bundle branch block. He denied any history of pulmonic stenosis, abnormal genitalia, mental retardation, or deafness. On exam, he had a darkly pigmented macule on his right upper back with irregular borders, and irregular pigment network. He also had three thin pink macules with distinctive lack of pigment network and thin white lines on dermoscopy on the right middle back, right lower back, and his left thigh. His biopsies demonstrated a melanoma (Breslow 1.1mm) on his upper right back, a melanoma-in -situ on his mid right back, a severely atypical nevi on his right lower back, and a melanoma in situ on his left thigh. He underwent wide local excisions and a sentinel lymph node biopsy which was negative. In the last six months, he additionally has been diagnosed with a melanoma (Breslow 0.7mm) on his left calf and three melanoma-in-situs on his abdomen, right thigh, left flank. LEOPARD syndrome, more recently called Noonan syndrome with multiple lentigines, is 'Rasopathy' with only three prior case reports demonstrating melanoma in this condition. All three case reports demonstrate this characteristic lack of pigmentation in the melanomas with 'thin white lines' on dermoscopy. The patient is following up every 3 months for full body skin.

**References:**
1. Colmant C, Franck D, Marot L, Matthijs G, Sznajer Y, Blomme S, Tromme I Patient with Confirm LEOPARD syndrome developing multiple melanoma Observation Dermatol Pract Concept 2018; 8 (1): 14
2. Seishima M, Mizutanl Y, Shibuya Y, et al. Malignant melanoma in a woman with LEOPARD syndrome: identification of a germline PTPN 11 mutation with a somatic BRAF mutation BR J Dermatol. 2007; 157: 1297-1299
3. Yu-Pin Cheng, Hsien-Yi Chiu, Tzu-Lin Hsiao, et al. Scalp melanoma in a woman with LEOPARD syndrome possible implication of PTPN 11 signaliging in melanoma pathogenesis. J Am Acad Dermatol. 2013; 69 (4):e186-187

**Primary Author(s):**
Alyson J Brinker MD, Naval Medical Center San Diego

**Co-Author(s):**
Aubry Winn

## Treatment emergent cutaneous sarcoidosis in a patient on anti-PD-L1 therapy

Immune checkpoint inhibitors are known to cause immune-related adverse events[(1)], including reported cases of sarcoidosis or sarcoidosis-like granulomatous reactions[(2)]. We have identified a case of cutaneous sarcoidosis in a patient receiving an anti-programmed death ligand 1 (PD-L1) monoclonal antibody. The patient is a 56-year-old African American woman with metastatic colon cancer that had progressed after treatment with chemotherapy and radiation. She was started on anti-PD-L1 treatment at the National Institutes of Health (NIH). Approximately 11 months after drug initiation, the patient developed a papule with surrounding hyperpigmentation on her left chin. Biopsy of the lesion demonstrated chronic granulomatous inflammation in the dermis with multinucleated giant cells. Eight months later, the patient developed a second papule on her left upper arm. Biopsy again revealed granulomas with multinucleated giant cells containing asteroid bodies, consistent with cutaneous sarcoidosis. The patient's serum angiotensin-converting enzyme levels were within

normal limits and she had no respiratory symptoms or pulmonary lesions diagnostic for sarcoidosis. The patient's skin lesions responded well to treatment with topical corticosteroids. The patient's colon cancer has remained stable. Physicians should be aware of sarcoidosis as a rare adverse effect of immune checkpoint inhibitor therapy, as sarcoidal lesions can be confounded with metastatic disease on clinical exam and in medical imaging. The mechanism of sarcoidosis from immune checkpoint inhibitors is still under investigation, and future studies can explore the pathophysiology of this rare adverse event.

**References:**

1. Ladak K, Bass AR. Checkpoint inhibitor-associated autoimmunity. Best Pract Res Clin Rheumatol. 2018;32(6):781-802.
2. Rambhia PH, Reichert B, Scott JF, et al. Immune checkpoint inhibitor-induced sarcoidosis-like granulomas. Int J Clin Oncol. 2019.

**Primary Author(s):**

Catherine J. Wang, BS, Dermatology Branch, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), National Institutes of Health (NIH)

**Co-Author(s):**

Margaret Gatti-Mays, NCI, NIH; Julius Y. Strauss, Laboratory of Tumor Immunology and Biology, National Cancer Institute, National Institute of Health; Jason M. Redman; James L. Gulley; Isaac Brownell, NIAMS, NIH

## Erythema multiforme-like allergic contact dermatitis to Nigella sativa oil

Introduction: Erythema multiforme-like (EM) allergic contact dermatitis (ACD) is rare and has variable presentation. We report a case of EM-like ACD to topical application of Nigella sativa oil (NSO).

History: A 48-year-old African American male with HIV presented with Nikolsky positive dusky atypical targets and bullae on the head, neck, abdomen, scrotum, and legs involving 20% BSA. He had no mucosal involvement. His medications included efavirenz/emtricitabine/tenofovir and hydrochlorothiazide, none of which were new.

Laboratory Data: The patient was afebrile with normal vital signs. CBC, BMP, PT, PTT, UA, mycoplasma titers, immunoglobin A, and skin/blood cultures were unremarkable. Eosinophil count was 5.0%. Serum HSV 1 IgG was positive. ESR and CRP were 20 and 161.8, respectively.

Biopsies: Punch biopsy of the left chest showed complete epidermal-dermal detachment with a devitalized epidermis and apoptotic keratinocytes. The dermis contained a dense perivascular and band-like lymphocytic infiltrate with superficial melanophages. DIF was negative.

Diagnosis/Discussion: The patient applied topical NSO, marketed as a skin care product, prior to the eruption. While EM-like ACD is rare, the history and clinical findings were consistent with EM-like ACD to NSO. Although the patient's histopathology was consistent with true EM or Stevens Johnson Syndrome (SJS)/Toxic Epidermal Necrolysis (TEN), it is likely that necrosis of severe ACD obscured features of spongiosis. The patient denied ingesting the oil and SJS/TEN due to topical medications is rare.

Treatment: The patient's eruption resolved with oral prednisone and avoidance of NSO. He declined patch testing with NSO.

**References:**

1. Tan, C.H., S. Rasool, and G.A. Johnston, Contact dermatitis: allergic and irritant. Clin Dermatol, 2014. 32(1): p. 116-24.
2. Barrientos, N., et al., Erythema multiforme-like eruption following allergic contact dermatitis in response to para-phenylenediamine in a temporary henna tattoo. International Journal of Dermatology, 2014. 53(7): p. e348-e350.
3. Bonhomme, A., et al., Bullous drug eruption to Nigella sativa oil: Consideration of the use of a herbal medicine – clinical report and review of the literature. Journal of the European Academy of Dermatology and Venereology, 2017. 31(4): p. e217-e219.

4. Zedlitz, S., R. Kaufmann, and W.-H. Boehncke, Allergic contact dermatitis from black cumin (Nigella sativa) oil-containing ointment. Contact Dermatitis, 2002. 46(3): p. 188-188.
5. Ali, B.H. and G. Blunden, Pharmacological and toxicological properties of Nigella sativa. Phytotherapy Research, 2003. 17(4): p. 299-305.
6. Ghorbanibirgani, A., A. Khalili, and D. Rokhafrooz, Comparing Nigella sativa Oil and Fish Oil in Treatment of Vitiligo. Iranian Red Crescent Medical Journal, 2014. 16(6): p. e4515.
7. Eid, A.M., et al., A Review on the Cosmeceutical and External Applications of Nigella sativa. J Trop Med, 2017. 2017: p. 7092514.
8. Hong, S.J. and C.H. Chang, Erythema multiforme-like generalized allergic contact dermatitis caused by Alpinia galanga. Contact Dermatitis, 2006. 54(2): p. 118-20.
9. Smart, D.R. and D.L. Powell, Erythema multiforme-like allergic contact reaction to topical triamcinolone. Dermatitis, 2014. 25(2): p. 89-90.
10. Grimbaldeston, M.A., et al., Mast cell-derived interleukin 10 limits skin pathology in contact dermatitis and chronic irradiation with ultraviolet B. Nat Immunol, 2007. 8(10): p. 1095-104.
11. Steinmann, A., et al., Allergic contact dermatitis from black cumin (Nigella sativa) oil after topical use. Contact Dermatitis, 1997. 36(5): p. 268-269.
12. Huber, J., et al., Erythema Multiforme-Like Allergic Contact Dermatitis to Turmeric Essential Oil. Dermatitis, 2016. 27(6): p. 385-386.
13. Sachs, B., Fischer-Barth, W., Erdmann, S., Merk, H. F. and Seebeck, J., Anaphylaxis and toxic epidermal necrolysis or Stevens–Johnson syndrome after nonmucosal topical drug application: fact or fiction? Allergy, 2007(62): p. 877-883.

**Primary Author(s):**
Freddie Bartholomew, MD, MBA, New York Presbyterian Hospital/Columbia University

**Co-Author(s):**
Christina Tejeda, BS (*co first author), Columbia College of Physicians and Surgeons; Stephen Vance, MD, MBA, Pinehurst Surgical; Ali Dana, MD, PhD; James J. Peters Bronx Veterans Affairs Medical Center

## Mammalian Meat Allergy – A Novel Presentation and a Review of the Literature

Mammalian meat allergy (MMA) is an emerging IgE-mediated allergic reaction against the oligosaccharide galactose-α-1,3-galactose (α-gal) found in red meat. Most commonly, individuals become sensitized to α-gal following a tick bite. Patients typically present with delayed anaphylaxis, angioedema, and urticaria following meat ingestion. Severe anaphylaxis has also been seen following cetuximab treatment, as α-gal residues are present on the Fab segments of the monoclonal antibody. We present the case of a patient with a history of metastatic squamous cell carcinoma of the head and neck who presented to our clinic with exfoliative erythroderma. Biopsy demonstrated a spongiotic dermatitis with an abundance of eosinophils. However, the patient failed to respond to standard therapy, and after a history of anaphylaxis following cetuximab therapy for his metastatic SCC was elicited, IgE panel against beef, lamb, and pork was found to be markedly elevated. Elimination of red meat from his diet led to the gradual resolution of his erythroderma within 2-3 weeks. To our knowledge, this is the first reported case of MMA presenting as exfoliative erythroderma. We review the relevant literature and the postulated pathogenesis behind this presentation.

**References:**

1. Commins, Scott P., et al. "Delayed anaphylaxis, angioedema, or urticaria after consumption of red meat in patients with IgE antibodies specific for galactose-α-1, 3-galactose." Journal of Allergy and Clinical Immunology 123.2 (2009): 426-433.
2. Chung, CH, Mirakhur, B, Chan, E, et al. Cetuximab-induced anaphylaxis and IgE specific for galactose-α-1, 3-galactose. N Engl J Med 2008; 358: 1109– 1117
3. Aquino, M., & Rosner, G. (2019). Systemic Contact Dermatitis. Clinical Reviews in Allergy & Immunology, 56(1), 9–18. https://doi.org/10.1007/s12016-018-8686-z
4. Fabbro SK, Zirwas MJ (2014) Systemic contact dermatitis to foods: nickel, BOP, and more. Curr Allergy Asthma Rep 14:463
5. Van Nunen SA, et al. An association between tick bite reactions and red meat allergy in humans. Med J Aust 2009; 190: 510-511.

6. Chinuki, Yuko, and Eishin Morita. "Alpha-Gal-containing biologics and anaphylaxis." Allergology International (2019).

**Primary Author(s):**
Bilal Fawaz, MD, Cooper Medical School of Rowan University

**Co-Author(s):**
Joshua W. Schimmel, Cooper University Hospital; Michael Renzi, MD, Cooper University Hospital; Warren R. Heymann, MD; Steven Manders, MD, Cooper Medical School of Rowan University

## Remission of Febrile Ulceronecrotic Mucha-Habermann Disease (FUHMD) Observed in Adult Female Following Methotrexate Therapy

We present the case of a previously healthy 43-year-old female who experienced a one-month history of generalized rash and intermittent fevers. She reported receiving elective intravenous vitamin infusions at a medi-spa one month prior. At the onset of the eruption, initial histopathology showed focal ulcer and then subsequently pustular psoriasis. However, the patient was nonresponsive to topical and systemic steroids and her rash rapidly evolved into nearly confluent pustulo-vesicles, ulceronecrotic erosions, and hemorrhagic bullae that encompassed approximately 90% of her body surface area. A repeat biopsy revealed interface vesicular dermatitis with epidermal necrosis, consistent with pityriasis lichenoides et varioliformis acuta (PLEVA). In the context of her systemic symptoms (high fevers and acute onset of ulceronecrotic lesions), her clinical presentation was also consistent with febrile ulceronecrotic Mucha Habermann Disease (FUMHD).

FUMHD is a rare and potentially fatal variant of PLEVA that typically presents with intermittent high fevers and acute onset of generalized ulceronecrotic papules and plaques with hemorrhagic crusts. FUMHD disproportionally affects males and children with better prognoses observed in younger patients with early treatment intervention. The pathogenesis is still unknown with various potential etiologies postulated including infection and medication exposure. Given its rarity, there are no established evidence-based regimens for FUMHD and current treatment strategies have been largely based on anecdotal evidence from case reports. Some explored treatments include immunosuppressants, antibiotics, antivirals and phototherapy, with methotrexate therapy being one of the most popular and effective treatments. Our patient failed systemic steroids and responded minimally to cyclosporine. She attained disease remission within weeks on methotrexate 20 mg dosed weekly but with residual scarring.

**References:**

1. A., Nofal, Assaf M., Alakad R., Amer H., Nofal E., and Yosef A. "Febrile Ulceronecrotic Mucha-Habermann Disease: Proposed Diagnostic Criteria and Therapeutic Evaluation.", Int J Dermatol. 55, no. 7 (2015): 729-38. https://dx.doi.org/10.1111/ijd.13195.
2. Bowers, S., and E. M. Warshaw. "Pityriasis Lichenoides and Its Subtypes." J Am Acad Dermatol 55, no. 4 (Oct 2006): 557-72; quiz 73-6. https://dx.doi.org/10.1016/j.jaad.2005.07.058.
3. Bulur, Isil, Hilal Kaya Erdoğan, Zeynep Nurhan Saracoglu, and Deniz Arik. "Methotrexate Treatment in Children with Febrile Ulceronecrotic Mucha-Habermann Disease: Case Report and Literature Review." Case Reports in Dermatological Medicine 2015 (2015): 4. https://dx.doi.org/10.1155/2015/357973.
4. Cornelison, R. L., J. M. Knox, and M. A. Everett. "Methotrexate for the Treatment of Mucha-Habermann Disease." Arch Dermatol 106, no. 4 (Oct 1972): 507-8.
5. Griffith-Bauer, K., S. L. Leitenberger, and A. Krol. "Febrile Ulceronecrotic Mucha-Habermann Disease: Two Cases with Excellent Response to Methotrexate." Pediatr Dermatol 32, no. 6 (2015 Nov-Dec 2015): e307-8. https://dx.doi.org/10.1111/pde.12687.
6. Haustein, U. F., and M. Rytter. "Methotrexate in Psoriasis: 26 Years' Experience with Low-Dose Long-Term Treatment." J Eur Acad Dermatol Venereol 14, no. 5 (Sep 2000): 382-8.
7. Lalevee, S., N. Ortonne, C. Hotz, F. Schlemmer, A. Beldi-Ferchiou, M. H. Delfau-Larue, P. Wolkenstein, O. Chosidow, and S. Ingen-Housz-Oro. "Febrile Ulceronecrotic Mucha Habermann Disease Mimicking Aggressive Epidermotropic Cd8+ Cytotoxic T-Cell Lymphoma: A Diagnostic Challenge." Eur J Dermatol 28, no. 6 (Dec 2018): 834-35. https://dx.doi.org/10.1684/ejd.2018.3410.
8. Lejuste, F. X., C. Michaux, C. Lehners, and N. Calteux. "Febrile Ulceronecrotic Mucha-Habermann Disease." BMJ Case Rep 2013 (Oct 2013). https://dx.doi.org/10.1136/bcr-2013-009739.
9. Lode, H. N., P. Döring, P. Lauenstein, P. Hoeger, F. Dombrowski, and R. Bruns. "Febrile Ulceronecrotic Mucha-Habermann Disease Following Suspected Hemorrhagic Chickenpox Infection in a 20-Month-Old Boy." Infection 43, no.

5 (Oct 2015): 583-8. https://dx.doi.org/10.1007/s15010-015-0726-5.

**Primary Author(s):**
Tracy T. Ngo, BS, Albert Einstein College of Medicine

**Co-Author(s):**
Claudia Hossain, Albert Einstein College of Medicine; Eugene Balagula, Montefiore Medical Center; Jason Cohen, Dermpath Diagnostics; Beth McLellan, Albert Einstein College of Medicine; Rachel Blasiak, Albert Einstein School of Medicine

## Late onset gadolinium-induced systemic fibrosis

A 51-year-old woman with chronic kidney disease on hemodialysis presented with rapidly progressive “skin thickening” associated with pain and joint contracture for four months. Thirteen years prior, patient underwent two magnetic resonance imaging with gadolinium contrast. At the time, patient’s eGFR was 33 mL/min/1.73m². Physical exam demonstrated thickened, brawny hyperpigmentation of the chest, forearms and legs with cobblestoning over the arms and trunk. Yellow plaques were noted on eye sclera. There was no sclerodactyly or facial involvement.

Punch biopsy from her left arm showed superficial and deep dermal perivascular and interstitial lymphocytic infiltrate with thick and thin collagen bundles. Immunohistochemical stains found increased CD34+ cells in the deep dermis, equivocal[(1)] for gadolinium-induced systemic fibrosis (GISF).[(2)]

Incisional biopsy from her flank showed thickened collagen bundles in the deep dermis with sharp demarcation from the overlying dermis, widening and fibrosis of the septae, and inflammation of the underlying fascia with scattered eosinophils, concerning for eosinophilic fasciitis (EF) or scleroderma.

Laboratory evaluations were notable for creatinine of 6.81 mg/dL and eGFR of 6 mL/min/1.73m². Serology was positive for ANA with titers of 1:160 with homogeneous immunofluorescence pattern and negative Scl-70 antibodies.

EF was initially favored, but skin thickening progressed despite first line EF treatment, e.g., prednisone 40mg daily and mycophenolate mofetil 500mg twice daily for 2 months. Patient was then initiated on nilotinib 200mg daily.[(3)] Within one month, the patient demonstrated significant improvement as measured by the modified Rodnan skin score and has continued with current treatment.

**References:**

1. Girardi M, Kay J, Elston DM, et al. Nephrogenic systemic fibrosis: clinicopathological definition and workup recommendations. J Am Acad Dermatol. 2011 Dec; 65(6): 1095-1106.e7.
2. Attari H, Cao Y, Elmholdt TR, et al. A Systematic Review of 639 Patients with Biopsy-confirmed Nephrogenic Systemic Fibrosis. Radiology. 2019 Aug; 292(2): 376-386.
3. Kay J. Nephrogenic systemic fibrosis: a gadolinium-associated fibrosing disorder in patients with renal dysfunction. Ann Rheum Dis. 2008 Dec; 67 Suppl 3: iii66-9.

**Primary Author(s):**
Idy Tam, MS, Tufts University School of Medicine, Massachusetts General Hospital

**Co-Author(s):**
JiaDe (Jeff) Yu, MD, Massachusetts General Hospital/Harvard Medical School; Evelyn Lilly, MD, Department of Dermatology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA

## Segmental stiff skin syndrome in two siblings with negative family history

A 12-year-old girl presented with an enlarging plaque on the right axilla, first noted at age 3. Exam revealed a 12cm x 13cm firm-to-hard subcutaneous skin-colored to reddish plaque over both axillary folds and adjacent chest wall, and a small, firm subcutaneous plaque on the right lateral thigh. Her brother developed a similar 5cm x 3cm plaque on his right

hip and upper thigh starting at age 7. There was no family history of similar lesions. Punch biopsies of both patients revealed fascicles of fibrosis in the deep dermis, and superficial subcutaneous fat oriented parallel to the epidermis in a lattice-like arrangement. Single adipocytes were present within the areas of fibrosis. Alcian blue stain highlighted mildly increased pan-dermal mucin, and elastic tissue stain showed mildly decreased elastic tissue. Findings were consistent with stiff skin syndrome. No treatments have been initiated.

Stiff skin syndrome is characterized by stony-hard skin bound to underlying tissues that presents in infancy or early childhood. Patients can develop contractures of large joints, limiting mobility. Areas with abundant fascia, such as the buttocks and thighs, are most commonly involved. The generalized form is due to a fibrilin-1 mutation which causes a buildup of giant fibrils, disrupting the organization of collagen and glycosaminoglycans within the extracellular matrix. Inheritance is typically autosomal dominant, but a segmental variant has been described with a later onset and milder symptoms. Our cases suggest a pathogenic sporadic germline mutation, rather than postzygotic somatic mosaicism, as both siblings but neither parent were affected.

**References:**


1. McCalmont TH, Gilliam AE. A subcutaneous lattice-like array of thick collagen is a clue to the diagnosis of stiff skin syndrome. J Cutan Pathol. 2012; 39(1):2-4.
2. Bolognia JL, Schaffer JV, Cerroni L. Dermatology, 4th edition. Chapter 43: Systemic Sclerosis (Scleroderma) and Related Disorders. Philadelphia, Elsevier. 2018.
3. Liu T, McCalmont TH, Frieden IJ, Williams ML, Connolly MK, Gilliam AE. The stiff skin syndrome: case series, differential diagnosis of the stiff skin phenotype, and review of the literature. Arch Dermatol. 2008; 144(10):1351-1359.



**Primary Author(s):**
Esther B. Henebeng, BS, The Warren Alpert Medical School of Brown University

**Co-Author(s):**
Julia A. Siegel, MD, The Warren Alpert Medical School of Brown University; Lionel Bercovitch, MD, Warren Alpert Medical School of Brown University; Leslie Robinson-Bostom, MD, Rhode Island Hospital, APC 10; Christopher DiMarco, MD, Brown University


## Zosteriform coccidioidomycosis

A 63 year-old female with a history of shingles developed a facial rash of two months duration. It started on her occipital scalp and spread to the parietal scalp, right cheek, temple, and forehead. The rash was initially pruritic with subsequent development of painful, erythematous pustules. Exam showed vesicles and erosions in various stages of healing. She was diagnosed with herpes zoster in right V1 distribution with concomitant herpes simplex infection of the posterior scalp. Given this unusual presentation bacterial and viral cultures, as well as VZV serologies, were obtained, and the patient was prescribed valacyclovir 1g PO three times daily for seven days. Varicella zoster IgG; lesional cultures were positive for Coccidiodes identified by nucleic acid hybridization. There was initial improvement on valacyclovir, but histopathology showed cutaneous coccidioidomycosis. The patient was started on fluconazole 400mg PO daily. Coccidioides serologies showed positive immunodiffusion (IMDF) of IgG with a titer of 1:64, chest x-ray showed asymmetric biapical pleural parenchymal nodular scarring – ongoing disease activity could not be excluded. Skin findings were noted to be improving on treatment at follow up exam.

There were 14,364 cases of Valley fever reported in 2017 – this is likely a significant underestimate as reported cases are thought to represent only a small proportion of all infections.[1,4] It is estimated that 70% of all cases of coccidioidomycosis occur in Arizona.[3] Cutaneous coccidioidomycosis has a wide variety of clinical presentations. They are typically categorized as organism -specific (such as those resulting from hematogenous dissemination to skin or primary cutaneous infection) or reactive (such as erythema nodosum, generalized exanthema, erythema multiforme, Sweet's syndromes, and others).[2] We found only one case of coccidioidomycosis presenting in a zosteriform distribution. We present this case to alert physicians about coccidioidomycosis, the new great imitator.[5]

**References:**


1. The Centers for Disease Control and Prevention. Fungal Diseases; Valley Fever
2. DiCaudo, D., Coccidioidomycosis: A review and update. JAAD 2006;55:929-42

3. Garcia, S., Alanis, J., Flores, M., Gonzalez, S., Cabrera, L., Candiani, J. Coccidioidomycosis and the skin: a comprehensive review. Anais Brasileiros de Dermatologic 2015; 90
4. McCotter, O., Benedict, K., Engelthaler, D., Komatsu, K., Lucas, K., Mohle-Boetani, J., Oltean, H., Vugia, D., Chiller, T., Cooksey, G., Nguyen, A., Roe, C., Wheeler, C., Sunenshine, R. Update on the Epidemiology of coccidioidomycosis in the United States. Medical Mycology, 2019; 57. S30-S40
5. Sparling, J. Disseminated cutaneous coccidioidomycosis in a zosteriform distribution. JAAD 2005; 52, P124

**Primary Author(s):**
Jelena Vasic, MD, University of Arizona

**Co-Author(s):**
Robert Segal, MD

## Bad to the bone: sarcoidosis presenting with subcutaneous nodules and bone involvement

A 51-year-old male with a history of vertigo developed painless soft tissue masses on the right dorsal fingers. Over several years these lesions enlarged and became tender. He subsequently developed new lesions of the right elbow, dorsal hands, lower legs, and dorsal feet. An MRI of the right hand revealed subcutaneous soft tissue masses overlying the digits compatible with hemangiomatosis. However, biopsy of a right elbow lesion by plastic surgery revealed granulomatous disease consistent with sarcoidosis. Whole body MRI showed scattered pulmonary nodules with probable bilateral upper lung scarring, axillary, abdominal, and iliac chain lymphadenopathy, splenomegaly, as well as multiple enhancing osseous lesions throughout the axial skeleton and bony pelvis. Bone scan revealed bilateral, asymmetric uptake of radiotracer in the iliac crest. Dermatology performed an additional biopsy of the right dorsal fifth digit of the hand, revealing well-formed granulomas with minimal peripheral lymphocytic inflammation consistent with sarcoidosis. Standard bloodwork was unremarkable aside from mild lymphopenia. Calcium and alkaline phosphatase were normal.

Bone involvement of sarcoidosis occurs in 1-15% of patients.[1] Osseous sarcoid is often asymptomatic and found incidentally on imaging. Unlike other diseases affecting bone, such as Paget's or malignancy, calcium and alkaline phosphatase levels are typically normal in osseous sarcoid.[1] In one study, all but one of 20 cases of osseous sarcoid had other manifestations of sarcoidosis. The most common concomitant findings were lymphadenopathy and pulmonary disease.[2] Treatment is based on overall disease burden. Systemic agents for sarcoidosis include oral corticosteroids, hydroxychloroquine, methotrexate, and tumor necrosis factor (TNF)-alpha inhibitors.

**References:**

1. Shariatmaghani S, Salari R, Sahebari M, Tabrizi PS, Salari M. Musculoskeletal Manifestations of Sarcoidosis: A Review Article. Curr Rheumatol Rev. 2019;15(2):83-89.
2. Sparks JA, Mcsparron JI, Shah N, et al. Osseous sarcoidosis: clinical characteristics, treatment, and outcomes--experience from a large, academic hospital. Semin Arthritis Rheum. 2014;44(3):371-9.

**Primary Author(s):**
Lauren Mihailides, MD, University of Pennsylvania

**Co-Author(s):**
Bridget Shields, MD, University of Pennsylvania Department of Dermatology; Misha Rosenbach, MD, University of Pennsylvania, Dept of Dermatology

## Sarcoidosis mimicking lymphoma with histopathologic features of necrobiosis lipoidica

A 36-year-old man with newly diagnosed chronic kidney disease, leukopenia and normocytic anemia presented with a 6-month history of asymptomatic, generalized skin lesions. He had associated unintentional weight loss, fatigue, night sweats and dyspnea on exertion. On examination, he appeared cachectic with numerous skin-colored, round plaques with

surrounding hyperpigmentation on his forehead, eyelids, medial canthi, neck, torso and extremities. Cervical, axillary and inguinal lymphadenopathy were present. Elevated LDH, CRP and ACE levels were noted in addition to lab abnormalities consistent with leukopenia and anemia. Skin biopsy demonstrated prominent necrobiosis; AFB, GMS and PAS stains were negative. A PET scan and lymph node biopsy showed lymphadenopathy of chest, abdomen, pelvis with increased metabolic activity in marrow spaces of spine and bony pelvis and non-caseating granulomatous lymphadenitis, respectively. Given the constellation of findings, a diagnosis of sarcoidosis was made.

Although necrobiosis is not typically associated with sarcoidosis, these entities may be related or represent different stages of the same granulomatous process. Other published reports describe non-diabetic patients with both types of lesions on histopathology.

Since the 1960s, a relationship between sarcoidosis and lymphoma has been suggested. A higher risk of lymphoma and lung cancer has been confirmed in prospective studies. The term sarcoidosis-lymphoma syndrome was later devised with Hodgkin lymphoma as the most common lymphoma linked to sarcoid. However, other studies have not been able to replicate these findings. Currently, there are no recommendations to screen sarcoid patients for cancer. Furthermore, 18-fluoro-2-deoxyglucose PET scan of sarcoidosis can mimic malignancy and metastases; a thorough evaluation should be performed to rule out other causes of PET-avid lesions.

**References:**


1. Brincker H. Sarcoid reactions and sarcoidosis in Hodgkin's disease and other malignant lymphomata. Br J Cancer. 1972;26(2):120-3.
2. El-khalawany M, Mosbeh A, Aboeldahab S, Ali S. Cutaneous sarcoidosis: a new subset in the spectrum of paraneoplastic dermatoses. Clin Exp Dermatol. 2018;43(6):683-691.
3. Goswami T, Siddique S, Cohen P, Cheson BD. The sarcoid-lymphoma syndrome. Clin Lymphoma Myeloma Leuk. 2010;10(4):241-7.



**Primary Author(s):**
Sook Hwang, MD, Cook County Health

**Co-Author(s):**
Warren Piette MD


## Not a simple line: the diagnostic difficulty with blashkolinear graft versus host disease

Chronic cutaneous graft versus host disease (GVHD) can be a challenging disease to diagnose and manage due to its wide variety of clinical presentations. A 47-year-old man with history of myelofibrosis status post peripheral blood stem cell transplant 6 months prior presented with a blaschkolinear, violaceous, scaly plaque on his right upper extremity. The rash started as a small plaque near his shoulder and spread towards his hand over several weeks. He also noted progressive hyperpigmentation and firmness to his skin since transplant on his face, neck, and trunk. Review of systems was otherwise negative, and labs were significant for a stable pancytopenia. Biopsy revealed lichenoid dermatitis with epidermal hyperplasia and focal hypergranulosis, which with the clinical picture was consistent with linear chronic GVHD. Patient was subsequently started on narrow band ultraviolet B radiation and betamethasone 0.05% spray with significant improvement of his pruritus. The incidence of chronic GVHD in allogenic stem cell transplants is estimated to be about 60-70% with cutaneous findings present in almost all cases. Linear GVHD is among the more uncommon presentations of chronic GVHD, and it can be quite protean, appearing psoriasiform, lichenoid, or even sclerotic. Furthermore, blashkolinear GVHD can be mistaken for dermatomal GVHD, which seems to represent an exacerbation or provocation by previous infection with varicella zoster virus. Care must be taken to distinguish this from other linear conditions such as linear lichen planus or linear morphea. This case highlights a rare presentation of chronic GVHD, which can mimic other linear lesions.

**References:**


1. Cohen PR, Hymes SR. Linear and dermatomal cutaneous graft-versus-host disease. South Med J. 1994 Jul;87(7):758-61.
2. Milam, PB, Vasu, SV, Gru, AA, Kaffenberger, BH. Psoriasiform graft-versus-host disease distributed along Blaschko's lines. J Cutan Pathol. 2017; 44: 882– 886.

3. Ballester-Sánchez R, Navarro-Mira M, Sanz-Caballer J, Botella-Estrada R. Review of cutaneous graft-vs-host disease. Actas Dermosifiliogr. 2015;107(3):183-193.
4. Kennedy FE, Hilari H, Ferrer B, Garcia-Patos V. Lichenoid chronic graft-vs-host disease following Blaschko lines. Actas Dermosifiliogr. 2014;105(1):89-92.
5. Vassallo C, Derlino F, Ripamonti F, Borroni G. Lichenoid cutaneous chronic GvHD following Blaschko lines. Int J Dermatol. 2014;53(4):473-475.
6. Kikuchi A, Okamoto SI, Takahashi S, Asano S, Nishikawa T. Linear chronic cutaneous graft-versus-host disease. J Am Acad Dermatol. 1997;37(6):1004-1006.
7. Freemer CS, Farmer ER, Corio RL, et al. Lichenoid chronic graft-vs-host disease occurring in a dermatomal distribution. Arch Dermatol. 1994;130(1):70-72.
8. Baselga E, Drolet BA, Segura AD, Leonardi CL, Esterly NB. Dermatomal lichenoid chronic graft-vs-host disease following varicella-zoster infection despite absence of viral genome. J Cutan Pathol. 1996 Dec;23(6):576-81.
9. Beers B, Kalish RS, Kaye VN, Dahl MV. Unilateral linear lichenoid eruption after bone marrow transplantation: an unmasking of tolerance to an abnormal keratinocyte clone? J Am Acad Dermatol. 1993;28(5 Pt 2):888-892.

**Primary Author(s):**
Aaron Fong, MD, George Washington University School of Medicine and Health Sciences

**Co-Author(s):**
Adam Friedman, MD

## Mycobacterium Chelonae infection in a retained surgical gauze following heart transplant

A 59-year-old man with a history of LVAD 2015, sleeve gastrectomy 2017, and recent open heart transplant 2019, presented with persistent drainage from his abdominal surgical wound. The recent heart transplant was complicated by retained iodoform gauze requiring abdominal incision and removal, followed by wound vac. He was maintained on immunosuppressive therapy and had finished a course of doxycycline and cefpodoxime without resolution. Exam of the chest and abdomen revealed multiple red to brown papules and crusted plaques bordering the linear scars. A biopsy of the skin adjacent to the abdominal scar demonstrated suppurative and granulomatous inflammation with filamentous organisms seen on Fite stain. Both tissue culture and wound culture speciated Mycobacterium chelonae. Biopsy of the chest wound lesion showed granulomatous dermatitis with fibrosis, but without growth of microbial organisms to date.

Mycobacterium fortuitum, M. abscessus, and M. chelonae are the most common clinically relevant species of the rapidly growing mycobacterial infections. M. chelonae primarily affects humans in immunosuppressed patients causing surgical wound infections and hematogenously disseminated disease that can manifest as multiple subcutaneous nodules or abscesses. Skin and soft tissue infections have been reported with pedicure footbaths, tattooing, prosthetic devices, LASIK, and soft tissue augmentation. We suspect the source of the infection in our patient to be the retained iodoform gauze, which was retrieved through an abdominal incision.

No controlled trials exist for rapidly growing mycobacteria, and treatment guidelines rely on susceptibility testing and previous case series. Our patient was started on a regimen of ciprofloxacin, azithromycin, and linezolid with slow improvement.

**References:**

1. DuBow A, Morand M, Desy D, Krasny M. Recurrence of cutaneous Mycobacterium chelonae infection: A case report. SAGE Open Med Case Rep. 2019;7:2050313X19845231.
2. Fowler J, Mahlen SD. Localized cutaneous infections in immunocompetent individuals due to rapidly growing mycobacteria. Arch Pathol Lab Med. 2014;138(8):1106-9.
3. Nakamura Y, Yoshioka D, Miyagawa S, Yoshikawa Y, Hata H, Nakae M, et al. A case of Mycobacterium chelonae mediastinitis and acute humoral rejection after heart transplantation. J Card Surg. 2019;34(4):205-7.
4. Wallace RJ, Jr., Tanner D, Brennan PJ, Brown BA. Clinical trial of clarithromycin for cutaneous (disseminated) infection due to Mycobacterium chelonae. Ann Intern Med. 1993;119(6):482-6.
5. Uslu U, Bohm O, Heppt F, Sticherling M. Skin and Soft Tissue Infections Caused by Mycobacterium chelonae: More

Common Than Expected? Acta Derm Venereol. 2019.

**Primary Author(s):**
Lauren Hoffman, MD, Albert Einstein College of Medicine/ Montefiore Medical Center

**Co-Author(s):**
Henry Zhu, MD, Division of Dermatology, Department of Medicine, Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, New York; Bijal Amin, MD, Albert Einstein College of Medicine; Yevgeniy Balagula, MD, Montefiore Medical Center

## Stage IV diffuse large B-cell lymphoma in a patient with bilateral renal cell carcinoma

A 57 yo man with a history of bilateral renal cell carcinoma (RCC) presented with several weeks of progressive right leg swelling associated with the appearance “itchy red bumps.” Physical exam revealed a markedly edematous right leg with diffuse peau d’orange changes and scattered foci of serous exudate. There were around 10 erythematous, indurated plaques that were variously flat topped or dome shaped with central ulceration, as well as two firm, ill-defined deep seated nodules that were appreciable only on palpation.

Histopathologic examination of punch biopsy specimens revealed a dense atypical lymphoid infiltrate composed of large cells with vesicular chromatin, prominent nucleoli, and deeply staining cytoplasm. Immunohistochemistry was positive for CD20, CD10, MUM1, Bcl-6, Ki-67, and c-MYC. FISH was positive for MYC translocation. These findings were consistent with high grade diffuse large B-cell lymphoma (DLBCL), germinal center B-type, with MYC translocation.

The patient completed 6 cycles of EPOCH-R (etoposide, prednisone, vincristine, cyclophosphamide, doxorubicin, rituximab), as well as 2 cycles of intrathecal methotrexate. Though the DLBCL demonstrated an excellent response to therapy, the residual left-sided RCC has continued to progress.

DLBCL, an aggressive malignancy of mature B lymphocytes, is the most common subtype of non-Hodgkin’s lymphoma (NHL).[1] MYC translocations are seen in 3-17% of all DLBCL and are associated with a worse prognosis.[2,3,4] Of note, there is an up to 2.67 times higher incidence of RCC and NHL occurring in the same patient, that has only been rarely reported.[5] The cause for this association has not been fully elucidated.

**References:**

1. Alizadeh AA, Eisen MB, Davis RE, et al. Distinct types of diffuse large B-cell lymphoma identified by gene expression profiling. Nature. 2000;403(6769):503.
2. Aukema SM, Kreuz M, Kohler CW, et al. Biological characterization of adult MYC-translocation- positive mature B-cell lymphomas other than molecular burkitt lymphoma. Haematologica. 2014;99(4):726-735.
3. Savage KJ, Johnson NA, Ben-Neriah S, et al. MYC gene rearrangements are associated with a poor prognosis in diffuse large B-cell lymphoma patients treated with R-CHOP chemotherapy. Blood. 2009;114(17):3533-357.
4. Horn H, Schmelter C, Leich E, et al. Follicular lymphoma grade 3B is a distinct neoplasm according to cytogenetic and immunohistochemical profiles. Haematologica. 2011;96(9):1327-13234.
5. Anderson CM, Psuztai L, Palmer JL, Cabanillas F, Ellerhorst JA. Coincident renal cell carcinoma and non-Hodgkin's lymphoma: The M. D. Anderson experience and review of the literature. J Urol. 1998;159(3):714-7.

**Primary Author(s):**
Kimberly Huerth, MD, M,.Ed, Howard University Hospital

**Co-Author(s):**
Lauren C Payne, MD

## Reactive granulomatous dermatitis in a patient with lacrimal IgG4-related disease

A 74-year-old male presented with bilateral axillary lymphadenopathy and a pruritic rash involving the trunk and extremities of 10 months duration. He has history of IgG4-related disease limited to the lacrimal glands, which was diagnosed in 2009 with lacrimal gland biopsy for symptoms of diplopia. Serum IgG4 was elevated at 139 mg/dL (normal <121 mg/dL). He was treated with oral corticosteroids and rituximab in 2009, which improved his ocular symptoms. Though he was thought to be in remission for 7 years, serial monitoring CT scans have shown progressive lacrimal gland enlargement.

On dermatologic examination, multiple large red-brown large confluent patches without overlying scale are present on the back, upper extremities, and distal lower extremities. The palms, soles, and face are spared.

Biopsies obtained from the arm and leg showed interstitial dermal granulomatous inflammation with scattered eosinophils, consistent with reactive granulomatous dermatitis, interstitial granulomatous dermatitis type. IgG and IgG4 stains highlight rare scattered plasma cells. Microscopic criteria for IgG4-RD was not met. Serum IgG4 was 945 mg/dL.

Without identification of any other new medical problems, the patient was diagnosed with a reactive granulomatous dermatitis (RGD) secondary to his IgG4-related disease. Granulomatous skin disorders are more often seen in patients with IgG4-related diseases than would be expected in the general population, as shown in a retrospective analysis of 118 patients with IgG4-related pancreatitis.1. The next step in his care is lymph node biopsy which will help direct treatment of his IgG4-related disease and possibly the RGD.

**References:**

1. Kindle, S.A., Hart, P.A., Chari, S.T., Pittelkow, M.R., Smyrk T.C., and Lehman, J.S. Dermatologic disorders in 118 patients with autoimmune (immunoglobulin G4-related) pancreatitis: a retrospective cohort analysis. Am J Clin Dermatol. 2015; 16: 125-130.

**Primary Author(s):**
Elizabeth Sutton, MD, Mayo Clinic Rochester

**Co-Author(s):**
Spencer Bezalel, MD, Mayo Clinic; Julia Lehman, MD, Mayo Clinic; Catherine Newman, MD, Mayo Clinic, department of Dermatology

## Lupoid leishmaniasis in a New Yorker: a decade-long diagnostic delay

An 82-year-old man was referred for a ten-year history of waxing and waning pink firm plaques on his nose and central face. Two prior biopsies from the forehead and left cheek showed tuberculoid granulomas. As pulmonary findings were absent, the patient had been diagnosed with cutaneous sarcoidosis; treatment included doxycycline, monthly intralesional steroids, and methotrexate without relief. On our initial evaluation, the differential diagnosis included sarcoidosis, rosacea, and leprosy given the patient's extensive travel history. Treatment with topical tacrolimus led to improvement followed by rapid flaring and facial swelling. Repeat biopsy was virtually identical to the priors. Stains for AFB, PAS, GMS, and Fite were negative for organisms; sterile tissue cultures were unrevealing. Isotretinoin (150 mg/kg) + prednisone taper was initiated for abruptly worsening facial edema. After isotretinoin, hydroxychloroquine 200 mg BID was started as facial lesions worsened. Nearly one year after his initial referral, he developed an enlarging, edematous pink plaque with induration, erosion, and crusting on the left side of the nose. Biopsy revealed a diffuse mixed infiltrate of histiocytes, lymphocytes, and plasma cells; many histiocytes were filled with small blue circular structures positive with CD1a staining. PCR genotyping done by the CDC identified Leishmania braziliensis, consistent with New World cutaneous leishmaniasis (CL). Rarely, CL can be lupoid with edematous, firm pink-red plaques extending on the cheeks and nose and arising from a contiguous crusted or ulcerated lesion. Treatment with amphotericin B was indicated, and the patient has completed one course with signs of refractory disease.

**Primary Author(s):**
Jeff Gehlhausen, MD, PhD, Yale Dermatology

**Co-Author(s):**
Gauri Panse, MD, Yale School of Medicine; Christine Ko, MD, Yale University; Matthew Grant; Amanda Zubek, MD, PhD, Yale School of Medicine Department of Dermatology

## Neutrophilic eccrine hidradenitis as a result of nucleoside reverse transcriptase inhibitor

A 65-year-old male with history of HIV (CD4 count 249, viral load undetectable) presented with a one-month history of painful papules over the scalp, ears, trunk, and arms. Examination revealed tender, violaceous papules and nodules overlying the scalp, nose, ears, trunk and arms. Biopsy of nodules showed predominately neutrophilic infiltrates aggregating around the eccrine coils. Tissue cultures were negative for bacterial or fungal infection. Laboratory testing revealed negative antinuclear antibody and rapid plasma reagin. Based on histopathologic findings, a diagnosis of neutrophilic eccrine hidradenitis (NEH) was confirmed. The patient was started on triamcinolone 0.1% ointment with complete resolution. NEH is a rare neutrophilic dermatosis that primarily occurs in patients with acute myeloid leukemia undergoing chemotherapy, most commonly with cytarabine.[1,2] Rarely, it has been reported as a paraneoplastic phenomenon.[2] Additionally, there are few reported cases of NEH in patients with HIV receiving nucleoside reverse transcriptase inhibitors (NRTI) and one case of a patient with HIV receiving both integrase and protease inhibitors.[3-5] NEH has also been reported in one patient with HIV not receiving antiretroviral therapy.[6] In our patient, evaluation for underlying malignancy was negative, however, a medication review revealed that he was treated with a combination antiretroviral agent of rilpivirine, tenofovir, and the NRTI emtricitabine for at least one year prior to onset of NEH, which we attribute as the cause of his NEH. Thus, while the pathogenesis of NEH remains unclear, it is important for clinicians to consider this neutrophilic dermatosis in HIV patients treated with NRTIs.

**References:**


1. Harist TH, Fine JD, Berman RS, et al. Neutrophilic eccrine hidradenitis. A distinctive type of neutrophilic dermatosis associated with myelogenous leukemia and chemotherapy. Arch Dermatol. 1982;118:263-266.
2. Bachmeyer C, Aractingi, S. Neutrophilic eccrine hidradenitis. Clinics in Dermatology. 2000;18(3):319-300.
3. Smith KJ, Skelton HG, James WD, et al. Neutrophilic eccrine hidradenitis in HIV- infected patients. J Am Acad Dermatol. 1990;23(5):945-947
4. Krischer J, Rutschmann O, Roten S, Harms M, Saurat J, Pechere M. Neutrophil eccrine hidradenitis in a patient with AIDS. Journal of Dermatology. 1998;25(3):199- 200.
5. Rouanet I, Jantac M, Lechiche C, Hope-Rapp E, Sotto A. Neutrophilic eccrine hidradenitis in an HIV-1-infected patient. AIDS. 2012;26:775-778.
6. Sevila A, Morell A, Banuls J, Silverstre JF, Betlloch I. Neutrophilic eccrine hidradenitis in an HIV-infected patient. Int J Dermatol. 1998;23(9):651-652.



**Primary Author(s):**
Jessica Kalen, MD, George Washington University

**Co-Author(s):**
Mary Maiberger, MD, Veterans Affairs Medical Center, Washington, D.C., George Washington University Department of Dermatology


## Atypical hand, foot, and mouth disease presenting as purpuric bullae in an elderly patient

A 73 year old male presented with a five day history of worsening painful rash on the hands and feet which progressed into large blisters. He had been visiting his grandson who was sick with hand, foot, and mouth disease two weeks prior to rash onset. The patient denied any new medications, fevers, malaise, sore throat, or cough.

Examination revealed numerous petechial red papules on the dorsal and palmar hands with large flaccid bullae and sloughing of dorsal and plantar feet on a background of dusky purpura. Oral mucosa was clear. Differential diagnosis initially included vasculitis versus viral rash. A biopsy was obtained, and the patient was admitted to the hospital for close monitoring and broad antibiotic coverage for superimposed infection. Histology demonstrated epidermal necrosis with dyskeratotic keratinocytes, papillary dermal edema, hemorrhage, and focal lichenoid inflammation, consistent with a viral process. Viral respiratory studies were positive for enterovirus, which in combination with the clinical presentation, was suggestive of Coxsackie infection. This patient was diagnosed with atypical hand, foot and mouth disease, and treated with

Triamcinolone ointment with compression stockings. On follow up he had moderate desquamation of the distal fingertips, but otherwise excellent improvement of his bullous and purpuric lesions.

Review of the literature suggests an increased incidence of atypical hand, foot, and mouth disease with Coxsackie A6 virus, though these lesions have previously been noted to be vesicular or varioliform. We anticipate the striking clinical images of the unique presentation in this elderly patient will prove valuable for learning.

**References:**
Feder HM, Bennett N, Modlin JF. 2014. Atypical hand, foot, and mouth disease: a vesiculobullous eruption caused by Coxsackie virus A6, The Lancet Infectious Diseases, Volume 14, Issue 1, Pages 83-86, ISSN 1473-3099.

**Primary Author(s):**
Lina Husienzad, MD, University of Pittsburgh Medical Center

**Co-Author(s):**
Alaina James, MD, PhD, UPMC/University of Pittsburgh; Nancy House, MD

## Refractory Pityriasis Rubra Pilaris Treated with Ustekinumab

Pityriasis rubra pilaris (PRP) is a papulosquamous dermatosis characterized by follicular papules with an erythematous base, a coalescence of orange to erythematous plaques, and orange to erythematous waxy keratoderma of the palms and soles. Management can be difficult as topical therapies are usually not effective and there is no standardization for systemic therapies. We present a case of a 64-year-old male who presented for a third opinion of a worsening exfoliative dermatitis. Skin biopsies demonstrated psoriasiform dermatitis with mild to moderate hyperparakeratosis, consistent with a diagnosis of PRP. The patient was started on acitretin 25 mg daily, which was titrated up to acitretin 35 mg daily after 2 weeks. The patient had moderate improvement on acetretin but still complained of severe itching, shedding, erythema, and ectropion. After 5 months of monotherapy with acetretin, patient was started on ustekinumab 45 mg subcutaneous injection every 4 weeks and continued acetretin 25 mg daily four times a week. After 1 month of ustekinumab, patient noted much improvement and was titrated off of the acetretin. After 3 months of treatment with ustekinumab, the patient's skin was 95% clear and symptoms had resolved. Ustekinumab is an IL-12 and -23 inhibitor that is FDA approved for the treatment of moderate-to-severe plaque psoriasis. There appears to be a common IL-23-Th17-axis that PRP and psoriasis share, which provides a rationale for treating PRP with ustekinumab. This case illustrates the need for further studies to evaluate the safety and efficacy of biologics, specifically ustekinumab, for the treatment of PRP.

**References:**
1. Bolognia J, Schaffer J, Cerroni L (2018). Dermatology. Philadelphia: Elsevier Saunders.
2. Feldmeyer L, Mylonas A, Demaria O, Mennella A, Yawalkar N, Laffitte E, Hohl D, Gilliet M, Conrad C. Interleukin 23-helper T cell 17 axis as a treatment target for pityriasis rubra pilaris. JAMA Dermatol. 2017:153(4):3014-308.

**Primary Author(s):**
Kamaria Nelson, MD, MHS, Department of Dermatology, The George Washington University, Medical Faculty Associates

**Co-Author(s):**
Alison Ehrlich, MD, MHS, Foxhall Dermatology

## Tranexamic Acid for Melasma Treatment: a split Face study

Melasma manifests as symmetric hyper-pigmented macules and patches on the face. Tranexamic acid (TXA) inhibits plasmin synthesis induced by ultraviolet rays through interfering with plasminogen-plasmin pathway. Objective Was to verify the therapeutic effect and safety of intradermal injection of TA versus TA microneedling in melasma treatment.

Methods: Fifty-six female patients who had bilateral symmetrical melasma on both hemi faces were enrolled in a split face study. All patients received 6 sessions of intradermal injections of TXA on one side of the face and other side with TXA microneedling with 2 weeks interval. Patients were followed up for 3 months. Clinical response was assessed by two

blinded dermatologists evaluated serial photography before and after treatment using modified Melasma Area Severity Index (mMASI) score.Patients' self-assessment and patients' satisfaction questionnaire were performed.

Results: There was significant reduction in mean mMASI score from the baseline to the end of treatment in both treated sides P< 0.001. There wasn't statistically significant difference between both treatment modalities. Patient's satisfaction was higher in TXA microneedling ( p< 0.001) than intradermal injection.

Conclusions: Intradermal injection and microneedling of TXA could be safe and effective therapy for treatment of melasma

**References:**


1. Budamakuntla L, Loganathan E, Suresh H, Shanmugam S, Suryanarayan S, Dongare A, et al (2013). A randomised, open-label, comparative study of tranexamic acid microinjections and tranexamic acid with microneedling in patients with melasma. J Cutan Aesthet Surg.; 6(3):139–143.
2. CHO HH, CHOI M, CHO S et al. (2012): Role of oral tranexamic acid in melasma patients treated with IPL and low fluence QS Nd:YAG laser. J Dermatol Treat; 1–5.
3. Guevara L and Pandya G (2003). Safety and efficacy of 4% hydroquinone combined with 10% glycolic acid, antioxidants, and sunscreen in the treatment of melasma. Int J Dermatol; 42:966–72.
4. Gupta K, Gover D, Nouri K and Taylor S (2006). The treatment of melasma: a review of clinical trials. J Am Acad Dermatol; 55:1048–65.
5. Sun YLQ, Fu ZH, He C et al. (2014): Treatment of melasma with oral administration of compound tranexamic acid: a preliminary clinical trial .JEADV; 28:388–394.
6. Tse W and Hui E (2013). Tranexamic acid: an important adjuvant in the treatment of melasma. J Cosmet Dermatol.; 12(1):57-66.


**Primary Author(s):**


khaled Gharib MD, Zagazig University


## Condyloma Lata as the Presenting Sign of Syphilis Diagnosis in the Setting of Methamphetamine Abuse

Introduction: Syphilis is increasing in prevalence worldwide in parallel with an epidemic of methamphetamine abuse. We describe a case series of 9 patients who were diagnosed with condyloma lata (CL) lesions, an infrequent manifestation of secondary syphilis, in the setting of methamphetamine abuse.

Materials and methods: This was a retrospective chart review of all the cases of CL seen on our inpatient dermatology service.

Results: Between 2016-2018, our inpatient dermatology service diagnosed a total 9 patients with CL, 6 of which were diagnosed in a 10 month period. 7/8 patients with CL were found to use methamphetamine. All patients had reactive RPRs and positive syphilis IgG antibodies. 6 patients had biopsy proven syphilis using a T. Pallidum immunohistochemistry stain. Patients were treated with Benzathine penicillin G.

Discussion: Condyloma lata are reported in a small percentage of patients with secondary syphilis. A specific strain of T. Pallidum may be the cause of an unusually high presentation of CL. The direct effects of methamphetamines on the skin’s microbiome or metabolites are not known but methamphetamines have been detected in sweat glands up to 1 week after multiple uses.

Conclusion: A predisposition toward CL formation during the secondary syphilis stage may be associated with a disease specific strain of T. Pallidum or alterations in immunity. The effects of methamphetamine on immunity and syphilis pathophysiology also remain to be determined. It is important to consider syphilis in the differential diagnosis of cutaneous pathology to facilitate prompt treatment and prevent disease transmission in communities.

**References:**


1. Kojima N, Klausner JD. An Update on the Global Epidemiology of Syphilis. Curr Epidemiol Rep. 2018;5(1):24-38.
2. Lafond RE, Lukehart SA. Biological basis for syphilis. Clin Microbiol Rev. 2006;19(1):29-49.

3. Rompalo AM, Joesoef MR, O'Donnell JA, et al. Clinical manifestations of early syphilis by HIV status and gender: results of the syphilis and HIV study. Sex Transm Dis. 2001;28(3):158-165.
4. Mindel A, Tovey SJ, Timmins DJ, Williams P. Primary and secondary syphilis, 20 years' experience. 2. Clinical features. Genitourin Med. 1989;65(1):1-3.
5. Molepo J, Pillay A, Weber B, Morse SA, Hoosen AA. Molecular typing of Treponema pallidum strains from patients with neurosyphilis in Pretoria, South Africa. Sex Transm Infect. 2007;83(3):189-192.
6. Fenton KA, Breban R, Vardavas R, et al. Infectious syphilis in high-income settings in the 21st century. Lancet Infect Dis. 2008;8(4):244-253.
7. Salamanca SA, Sorrentino EE, Nosanchuk JD, Martinez LR. Impact of methamphetamine on infection and immunity. Front Neurosci. 2014;8:445.
8. Barnes AJ, Smith ML, Kacinko SL, et al. Excretion of methamphetamine and amphetamine in human sweat following controlled oral methamphetamine administration. Clin Chem. 2008;54(1):172-180.

**Primary Author(s):**
Aunna Pourang MD, UC Irvine Dermatology Research and UC Davis Dept of Dermatology

**Co-Author(s):**
Danielle Tartar MD PhD, University of California – Davis; Alain Brassard, University of California, Davis

## Transformation of sporadic neurofibroma with degenerative atypia into malignant peripheral nerve sheath tumor

A 92-year-old female presented with a 4-month history of an asymptomatic mass on the back. Physical exam revealed a 3-centimeter pink to violaceous, firm subcutaneous nodule with an overlying pedunculated skin-colored papule. No other lesions were noted on exam. Initial punch biopsy revealed a dermal proliferation of thin, elongated wavy spindle cells. Scattered enlarged, atypical nuclei were present without mitotic figures or hypercellularity. Findings were consistent with a neurofibroma with degenerative atypia. The patient was referred for excision but declined.

One year later the patient returned with an enlarging 7-centimeter necrotic fungating tumor with serosanguinous drainage. Repeat biopsy revealed pan-dermal pleomorphic spindle cells with hyperchromatic nuclei embedded in a dense fibrous stroma. The spindle cells were positive with S100 stain, focally positive with SOX10, and negative with HMB45 stain. There was no evidence of an atypical intraepidermal melanocytic proliferation.

Malignant peripheral nerve sheath tumor (MPNST) is an uncommon sarcoma that originates from peripheral nerves. While deep MPNST often arise from plexiform neurofibromas in neurofibromatosis type 1 (NF1), cutaneous MPNST can arise sporadically from normal nerves or other benign neural tumors. They are characterized by rapid change in size, pain, or neurologic deficit within a pre-existing benign tumor. Histologically, MPNST are hypercellular, spindled or epithelioid neoplasms with pleomorphism and S100 positivity. Histologic diversity can present a challenge in distinguishing MPNST from desmoplastic melanoma or neurofibroma with degenerative atypia. This report highlights the rapid transformation of a sporadic neurofibroma with degenerative atypia into a MPNST in an elderly patient without NF1.

**References:**
1. Farid, M, Demicco EG, Garcia R, et al. Malignant peripheral nerve sheath tumors. Oncologist. 2014;19(2).193-201.
2. Miettinen, MM, Antonescu CR, Fletcher, CD, et al. Histopathologic evaluation of atypical neurofibromatous tumors and their transformation into malignant peripheral nerve sheath tumor in neurofibromatosis 1 patients – a consensus overview. Hum Pathol. 2017;67:1-10.
3. Schaefer IM, Fletcher CD. Malignant peripheral nerve sheath tumor (MPNST) arising in diffuse-type neurofibroma: clinicopathologic characterization in a series of 9 cases. Am J Surg Pathol. 2015;39(9).1234-41.

**Primary Author(s):**
Peter Sigal, DO, St. Joseph Mercy Hospital

**Co-Author(s):**
Brian Schapiro, MD, St Joseph Mercy Hospital Ann Arbor; David Altman, MD

## Pleomorphic Fibroma: An Unusual Finding

A 54-year-old Caucasian female with a history of breast cancer status post mastectomy presented to the dermatology clinic with complaints of an irritated “mole” on her right flank. The lesion was bothersome as it was pruritic and had been rubbing against clothes and other objects, sometimes causing inflammation and bleeding. Examination of the lesion showed a 4 mm x 3 mm solitary, polypoid, skin colored papule on the right flank. There were no obvious signs of inflammation during this visit.

Given the history, a shave biopsy was performed. Histopathology showed a hypocellular dermal spindle cell proliferation with focally hyperchromatic nuclei admixed with hyalinized and mucinous stroma staining positive for smooth muscle actin (SMA) and CD34 but negative for S-100, consistent with pleomorphic fibroma.

Pleomorphic fibroma is an extremely rare benign fibrous lesion that typically occurs in adults with a peak incidence in the fifth decade of life and slight increased incidence in females. Histologic examination of the lesion shows multinucleated giant cells as well as spindle shaped or stellate cells with significant nuclear atypia which is characterized by large pleomorphic and hyperchromatic nuclei and small nucleoli. Cells are always positive for vimentin and negative for S-100 and cytokeratin. The histological differential diagnosis includes dermatofibroma with monster cells, atypical fibroxanthoma, giant cell fibroblastoma, desmoplastic Spitz nevus, pleomorphic lipoma and desmoplastic melanoma. Recognition of this benign lesion with striking cytologic atypia is important to avoid unnecessary treatment.

**References:**


1. Kamino H, Lee JY, Berke A. Pleomorphic fibroma of the skin: a benign neoplasm with cytologic atypia. A clinicopathologic study of eight cases. The American Journal of Surgical Pathology. 1989 Feb; 13(2): 107-113.
2. Nakamura Y, Nakamura A, Muto M. A case of pleomorphic fibroma of the skin presenting as intradermal nodule. The American Journal of Dermatopathology. 2015 Feb; 37(2): 175-176.
3. Rudolph P, Schubert C, Zelger BG et al. Differential expression of CD34 and Ki-MIp in pleomorphic fibroma and dermatofibroma with monster cells. American Journal of Dermatopathology. 1999; 21: 414-419.
4. Yadav Y, Kushwaha R, Sharma U, Gupta K. Cytomorphology of pleomorphic fibroma of skin: a diagnostic enigma. The Journal of Cytology. 2013 Jan-Mar; 30(1): 71-73.



**Primary Author(s):**

Kristen Russomanno, MD, Department of Dermatology, Medstar Georgetown University Hospital/Medstar Washington Hospital Center

**Co-Author(s):**

Cynthia Deklotz MD, Georgetown University School of Medicine/ MedStar Washington Hospital Center/ Georgetown University Hospital; Nemanja Rodic MD, Georgetown University


## Medallion-like dermal dendrocyte hamartoma in a patient with Peutz-Jeghers syndrome

A 10-year-old male with a history of Peutz-Jeghers syndrome and DYRK1A-related intellectual disability syndrome presented to the pediatric dermatology clinic with an asymptomatic 1.0 x 1.5 cm firm nummular hyperpigmented plaque on the right posterior neck. Punch biopsy demonstrated a band-like proliferation of spindle cells throughout the mid to upper reticular dermis with sparing of the papillary dermis. The proliferation extended to the fibrous septa without infiltrating into the subcutaneous fat. The spindle cells were diffusely and strongly positive for CD34 but negative for factor XIIIa, actin, and desmin. The cells displayed minimal cytologic atypia or mitotic activity. These findings were most consistent with medallion-like dermal dendrocyte hamartoma (MLDDH), an exceedingly rare CD34+ spindle cell neoplasm that preferentially involves the upper trunk and neck of young children [1,2,3,4]. MLDDH is a benign entity that displays significant clinical and histological overlap with congenital atrophic dermatofibrosarcoma protuberans (DFSP). In diagnostically hallenging cases, molecular studies for the COL1A-PDGFB gene rearrangement may confirm the diagnosis of DFSP [5,6]. To our knowledge, this is the first reported case of MLDDH in a patient with Peutz-Jeghers syndrome. Unlike PTEN

hamartoma tumor syndromes (e.g. Cowden disease), patients with Peutz-Jeghers syndrome typically do not develop hamartomas outside of the gastrointestinal tract. It is uncertain if the patient's underlying genetic syndrome may have contributed to the development of this cutaneous neoplasm. After a thorough discussion with the family regarding the benign nature of this lesion, it was decided to pursue clinical observation rather than surgical intervention.

**References:**


1. Rodriguez-Jurado et al. Medallion-like dermal dendrocyte hamartoma: a new clinically and histopathologically distinct lesion. J Am Acad Dermatol. 2004;51(3):359-63.
2. Shah KN, Anderson E, Junkins-Hopkins J, James WD. Medallion-like dermal dendrocyte hamartoma. Pediatr Dermatol. 2007;24(6):632-6.
3. Ducharme EE, Baribault KE, Husain S, Engler DE. Medallion-like dermal dendrocyte hamartoma in a 36-year-old male. J Am Acad Dermatol. 2008;59(1):169-72.
4. Horikawa H, Sato T, Gomi H, Yamazaki K, Ishida Y, Yuzaki I, Fukuzumi S. Medallion-like dermal dendrocyte hamartoma: A rare congenital CD34-positive dermal lesion clinically and pathologically overlapping with fibroblastic connective tissue nevus. Pediatr Dermatol. 2019;36(3):397-399.
5. Kutzner et al. Plaque-like CD34-positive dermal fibroma ("medallion-like dermal dendrocyte hamartoma"): clinicopathologic, immunohistochemical, and molecular analysis of 5 cases emphasizing its distinction from superficial, plaque-like dermatofibrosarcoma protuberans. Am J Surg Pathol. 2010;34(2):190-201.
6. Cheon M, Jung KE, Kim HS, Lee JY, Kim HO, Park CK, Park YM. Medallion-like dermal dendrocyte hamartoma: differential diagnosis with congenital atrophic dermatofibrosarcoma protuberans. Ann Dermatol. 2013;25(3):382-4.



**Primary Author(s):**

Aaron Russell, MD, Washington University School of Medicine in St. Louis

**Co-Author(s):**

Tiffany Chen, MD, Washington university school of medicine; Ilana Rosman, MD, Washington University School of Medicine; Elizabeth Nieman, MD, Washington University


## Agminated Spitz nevi arising within a nevus spilus

History: A healthy 8-year-old female presented with a large tan patch with hyperpigmented papules on the right leg consistent with nevus spilus. Numerous amelanotic-appearing pink nodules developed within the lesion and were excised showing Spitz nevi (wedge-shaped intradermal proliferation of large, epithelioid melanocytes with pale grayish cytoplasm, superficially seen in nests, dispersing as single cells towards their base). Due to growing literature regarding the genetics of melanocytic neoplasms, next generation sequencing was performed showing a HRAS Q16K c.181C>A missense mutation.

Diagnosis: Agminated Spitz nevi arising within a nevus spilus

Discussion: Nevus spilus occurs in 1-2% of the general population. It is well documented that melanocytic proliferations may develop within nevus spilus, including blue nevi, Spitz nevi, and rarely melanoma.[1,2] Nevus spilus may occur due to HRAS mutations which are the most commonly identified mutation in Spitzoid neoplasms, but rare in melanoma.[3] There are very few cases documenting agminated Spitz nevi arising within a nevus spilus.[4] Considering that melanoma (and even multiple melanomas) may rarely develop within a nevus spilus, it is important to note that melanoma (which commonly harbors BRAF and NRAS mutations) has not been documented in association with agminated Spitz nevi.[5,6] Additionally, no HRAS mutations have been described in Spitzoid melanoma.[7] Interestingly, an HRAS mutation has previously been identified in a patient with nevus spilus, agminated Spitz nevus and parametrial uterine rhabdomyosarcoma.[8] In our patient, we are working with genetics to better understand whether somatic mosaicism is present necessitating further monitoring for malignancy.

**References:**


1. Kopf AW. Prevalence of congenital-nevus-like nevi, nevi spili, and cafe au lait spots. Archives of Dermatology. 1985;121(6):766-769.
2. Torres KG, Carle L, Royer M. Nevus Spilus (Speckled Lentiginous Nevus) in the Oral Cavity. The American Journal of Dermatopathology. 2017;39(1).

3. Sarin KY, Sun BK, Bangs CD, et al. Activating HRAS Mutation in Agminated Spitz Nevi Arising in a Nevus Spilus. JAMA Dermatology. 2013;149(9):1077.
4. Betti R, Inselvini E, Palvarini M, Crosti C. Agminated Intradermal Spitz Nevi Arising on an Unusual Speckled Lentiginous Nevus with Localized Lentiginosis. The American Journal of Dermatopathology. 1997;19(5):524-527.
5. Brito M, Dionísio C, Fernandes C, et al. Synchronous melanomas arising within nevus spilus. Anais Brasileiros de Dermatologia. 2017;92(1):107-109.
6. Böer A, Wolter M, Kneisel L, Kaufmann R. Multiple Agminated Spitz Nevi Arising on a Café Au Lait Macule: Review of the Literature with Contribution of Another Case. Pediatric Dermatology. 2001;18(6):494-497.
7. Dimonitsas E, Liakea A, Sakellariou S, et al. An update on molecular alterations in melanocytic tumors with emphasis on Spitzoid lesions. Annals of Translational Medicine. 2018;6(12):249-249.
8. Nemeth K, Szabo S, Cottrell C, et al. Mosaic pathogenic HRAS variant in a patient with nevus spilus with agminated Spitz nevi and parametrial-uterine rhabdomyosarcoma. British Journal of Dermatology. 2018;178(3):804-806.

**Primary Author(s):**
Seth Lofgreen, MD, University of Minnesota

**Co-Author(s):**
Sheilagh Maguiness, MD, University of Minnesota

## An ESRD patient on dialysis develops multiple firm subcutaneous nodules. What is going on?

Patient history: 61 year-old female with end-stage renal disease on dialysis who presented with a 3 month history of firm, painful bumps in her breasts and lower extremities. She was referred to UNC Dermatology by her nephrologist to rule-out calciphylaxis. Recently had a mammogram that showed abnormal calcifications, thus this was followed by core-needle biopsy that showed fat necrosis with microcalcifications.

Physical exam: There were multiple firm indurated dermal-subcutaneous nodules involving her bilateral lower extremities, buttocks, and breasts. These nodules were significant to the point where we were able to appreciate the contours of the dermal nodules in the above, intact epidermis. There were similar dermal nodules in her breast and a poor healing 1cm ulcer with a necrotic base and surrounding erythema.

Biopsies: Subcutaneous fat necrosis with interstitial calcification

Laboratory data:
Parathyroid hormone: 167.9 (range: 12.0-72.0 pg/mL)
Calcium: 8.7 (range: 8.5-10.2mg/dL)
Phosphorus: 10.0 (range: 2.9-4.7mg/dL)
Albumin: 3.8 (range: 3.5-5.0g/dL)

Diagnosis: Metastatic calcification

Treatment: Intravenous sodium thiosulfate, considering transition to intralesional sodium thiosulfate

**References:**

1. Zouboulis C, Blume-Peytavi U, Lenner T, et al. Fulminant metastatic calcinosis with cutaneous necrosis in a child with end-stage renal disease and tertiary hyperparathyroidism. British Journal of Dermatology 1996; 135:617-622
2. Jackson R, Munkittirick R. Secondary Hyperparathyroidism in Chronic Renal Disease with Metastatic Skin Calcification. Canad. Med. Asso J. 1962; 87:745-751
3. Robertson LP, Marshall RW, Hickling P. Treatment of cutaneous calcinosis in limited systemic sclerosis with minocycline. Ann Rheum Dis 2003; 62: 267-269
4. Rao N, Crail S. Metastatic Calcification and Long-Term Hemodialysis. NEJM 2013; 2415
5. Markova A, Lester J, Wang J, et al. Diagnosis of Common Dermopathies in Dialysis Patients: A Review and Update. Seminars in Dialysis 2012; 25: 408-418

6. Udomkarnjananun S, Kongnatthasate K, Praditpornsilpa K, et al. Treatment of Calciphylaxis in CKD: A Systemic Review and Meta-analysis. Kidney Int Rep 2019: 231-244
7. Goel SK, Bellovich K, McCullough PA. Treatment of Severe Metastatic Calcification and Calciphylaxis in Dialysis Patients. International Journal of Nephrology 2011; 1-5
8. Strazzula L, Nigwekar U, Steele D, et al. Intralesional Sodium Thiosulfate for the Treatment of Calciphylaxis. JAMA Dermatol. 2014; 149(8): 946-949
9. Chamberlain A, Walker NPJ. Successful Palliation and Significant Remission of Cutaneous Calcinosis in CREST Syndrome With Carbon Dioxide Laser. Dermatol Surg 2003; 29(9): 968-970
10. Hale EK. Metastatic Calcification. Dermatology Online Journal 2003; 9(4):2
11. Jaeger VA, Newman MG, Mirkes CR. Metastatic Calcinosis Cutis in End-Stage Renal Disease. Proc 2017; 30(3): 368-369
12. Hazen PG, Walker AE, Carney JF, et al. Cutaneous Calcinosis of Scleroderma: Successful Treatment with Intralesional Adrenal Steroids. Arch Dermatol; 1982(118): 366-367
13. Bolognia Chapter 50
14. Jimenez-Gallo D, Ossorio-Garcia L, Linares-Barrios M. Calcinosis Cutis and Calciphylaxis. Actas Dermosifiliogr. 2015; 106 (10): 785=794
15. Smith GP. Intardermal sodium thiosulfate for exophytic calcinosis cutis of connective tissue disease. JAAD 2013; 69(3): e146-7
16. Reiter N, El-Shabrawi L, Leinweber B, et al. Calcinosis cutis Part II: Treatment Options. JAAD 2011; 65:15-22
17. Burnie R., Smail S., Javaid M.M. (2013). Calciphylaxis and sodium thiosulphate: a glimmer of hope in desperate situation. Journal of Renal Care 39(2), 71–76.

**Primary Author(s):**
Teresa Ro, UNC Dermatology

**Co-Author(s):**
Donna Culton, University of North Carolina at Chapel Hill; Paul B. Googe

## Long-Lasting Azathioprine Hypersensitivity Syndrome in a Young Woman with Mutant NUDT15 R139C and Wild-Type TPMT*1/*1 Genotypes

Azathioprine (AZA) hypersensitivity syndrome is a rare dose-independent allergic reaction occurring within during first four weeks of therapy and improving within five days of discontinuing AZA. Different from its usual clinical course, we herein present a case of long-lasting AZA hypersensitivity syndrome with a mutant nucleoside diphosphate linked moiety X type motif 15 (NUDT15) and a wild-type thiopurine S-methyltransferase (TPMT) genotypes. A 28-year-old afebrile female with a two year-history of vitiligo presented with cutaneous eruption and arthralgias of finger joints 19 days after starting low-dose AZA therapy (50 mg daily) by a rheumatologist. Physical examination revealed generalized itching targetoid reddish patches with central dusty discoloration affecting her face, trunk, and upper limbs. Besides, annular scales and tiny marginal pustulosis were noted. Lesion spared the palms and soles and there was no mucosal involvement. Her white blood cell count was elevated at 15,350 (4.5-11.0 x 103) with 83.5% neutrophils (40%-74%). Skin biopsy showed mild acanthosis with focal spongiosis and intra-/subcorneal abscess. Superficial perivascular infiltration by mixed lymphocytes and neutrophils was observed. Clinicopathological data supported the diagnosis of AZA hypersensitivity syndrome. We subsequently prescribed intravenous betamethasone therapy and the patient showed complete remission after one month. Further genotyping revealed heterozygous NUDT15 R139C (C/T) and homozygous wild-type TPMT *1/*1. Current literature suggests that AZA hypersensitivity syndrome occurs regardless of TPMT levels, but the influence of NUDT15 polymorphism on its clinical presentation needs further investigation. As a potential predisposing factor, NUDT15 polymorphism should be considered before commencing patients on AZA.

**References:**

1. Bidinger JJ, Sky K, Battafarano DF, Henning JS. The cutaneous and systemic manifestations of azathioprine hypersensitivity syndrome. J Am Acad Dermatol. 2011;65:184-191.
2. Cyrus N, Stavert R, Mason AR, et al. Neutrophilic dermatosis after azathioprine exposure. JAMA Dermatol. 2013;149:592-597.
3. Snow JL, Gibson LE. A pharmacogenetic basis for the safe and effective use of azathioprine and other thiopurine

drugs in dermatologic patients. J Am Acad Dermatol. 1995;32:114-116.
4. Jackson AP, Hall AG, McLelland J. Thiopurine methyltransferase levels should be measured before commencing patients on azathioprine. Br J Dermatol. 1997;136:133-134.
5. Yang SK, Hong M, Baek J, et al. A common missense variant in NUDT15 confers susceptibility to thiopurine-induced leukopenia. Nat Genet. 2014;46:1017-1020.
6. Fei X, Shu Q, Zhu H, Hua B, et al. NUDT15 R139C Variants Increase the Risk of Azathioprine-Induced Leukopenia in Chinese Autoimmune Patients. Front Pharmacol. 2018;9:460.
7. Fan X, Yin D, Men R, et al. NUDT15 Polymorphism Confer Increased Susceptibility to Thiopurine-Induced Leukopenia in Patients With Autoimmune Hepatitis and Related Cirrhosis. Front Pharmacol. 2019;10:346.

**Primary Author(s):**
Chih-Yu Chen. MD, Tri-Service General Hospital

**Co-Author(s):**
Wei-Ming Wang. MD, PhD; Chien-Ping Chiang. MD, PhD, Tri-Service General Hospital/Department of Dermatology; Hong-Wei Gao. MD, Department of Pathology, Tri-Service General Hospital, Taipei, Taiwan; Hsiang-Cheng Chen. MD, PhD; Chih-Tsung Hung. MD

## Pulsed Dye Laser Treatment of Jessner's Lymphocytic Infiltrate

We present the case of a 66 year old female with a 12 year history of mildly pruritic erythematous papules and plaques on the face, neck, and scalp. She had previously attempted treatment with tacrolimus 0.1% ointment on the face and clobetasol 0.05% foam on the scalp and neck. Although these therapies reduced the pruritus, they did not promote clearance of her skin lesions. Punch biopsy was performed, revealing a superficial and deep perivascular and periadnexal lymphocytic infiltrate comprised of a mixture of B- and T-cells with slight increase in dermal mucin, consistent with a differential diagnosis of Jessner's lymphocytic infiltrate (JLI) or tumid lupus erythematosus. The patient was treated with pulsed-dye laser (PDL), resulting in clearance of her skin lesions. The patient subsequently had 8 additional PDL sessions over the course of 3 years to treat new skin lesions, all of which were effective in achieving clearance.

JLI is a rare, benign dermatosis which presents as erythematous papules or plaques in sun-exposed areas. Patients may require treatment for cosmetic reasons or, less commonly, for symptoms of burning or pruritus. Multiple therapies for JLI have been documented in the literature, but given the low prevalence of the disease, efficacy data are lacking. There are only 6 previously documented cases in the literature involving the use of PDL to treat JLI across two European studies. Our case demonstrates that PDL can be used as a highly effective treatment for maintaining clearance in JLI.

**References:**

1. Michel, J.L. and Perrin, D., 2010, December. Pulsed dye laser treatment for Jessner's lymphocytic infiltration of the skin. In Annales de dermatologie et de venereologie (Vol. 137, No. 12, pp. 803-807).
2. da Costa, B., Boixeda, P. and Moreno, C., 2009. Pulsed-dye laser treatment of Jessner lymphocytic infiltration of the skin. Journal of the European Academy of Dermatology & Venereology, 23(5), pp.595-596.
3. Toonstra, J., Wildschut, A., Boer, J., Smeenk, G., Willemze, R., van der Putte, S.C., Boonstra, H. and van Vloten, W.A., 1989. Jessner's lymphocytic infiltration of the skin: a clinical study of 100 patients. Archives of dermatology, 125(11), pp.1525-1530.
4. Tzung, T.Y. and Wu, J.C., 2005. Topical calcineurin inhibitors in treating Jessner's lymphocytic infiltration of the skin: report of a case. The British journal of dermatology, 152(2), p.383.
5. Green, C.M., 2008. Successful treatment of Jessner's lymphocytic infiltrate with auranofin. Clinical and experimental dermatology, 33(1), pp.108-109.
6. Laurinaviciene, R., Clemmensen, O. and Bygum, A., 2009. Successful treatment of Jessner's lymphocytic infiltration of the skin with methotrexate. Acta dermato-venereologica, 89(5), pp.542-543.
7. Guillaume, J.C., Moulin, G., Dieng, M.T., Poli, F., Morel, P., Souteyrand, P., Bonnetblanc, J.M., Claudy, A., Daniel, F., Vaillant, L. and Bernard, P., 1995. Crossover study of thalidomide vs placebo in Jessner's lymphocytic infiltration of the skin. Archives of dermatology, 131(9), pp.1032-1035.
8. Ardavanis, A., Orphanos, G., Skafida, S., Basioukas, S. and Rigatos, G., 2008. Coincidential successful treatment of Jessner-Kanof disease with chemotherapy. Annals of oncology, 19(7), pp.1360-1361.
9. Park, K.Y., Kim, H.K., Li, K., Kim, B.J., Seo, S.J., Kim, M.N. and Hong, C.K., 2012. Photodynamic therapy: new

treatment for refractory lymphocytic infiltration of the skin. Clinical and Experimental Dermatology: Clinical dermatology, 37(3), pp.235-237.

**Primary Author(s):**
Neel Nath, Duke University Department of Dermatology

**Co-Author(s):**
Sarah Wolfe, Duke Dermatology

## Intractable generalized pruritus developing after laser tattoo removal

A 49-year old otherwise healthy female presented for treatment of a rash that developed after her first laser tattoo removal session for a professionally placed black and green tattoo on her left ankle that had been asymptomatic for 20 years prior to lasing. Following treatment, a pruritic rash developed around the tattoo followed by development of intractable generalized pruritus. On exam, the patient had bright red, ulcerated dermal nodules with surrounding erythema engulfing the tattoo and excoriations covering the remainder of her body except for her acnestis. Biopsy of a dermal nodule within her tattoo demonstrated ulceration overlying a superficial and mid predominately lymphocytic infiltrate with interspersed eosinophils and tattoo pigment. She was treated with topical and intralesional corticosteroids followed by oral methotrexate without improvement. The patient subsequently underwent tattoo excision. One month post-operatively the patient reported complete resolution of itching and rash.

Development of a generalized hypersensitivity reaction to tattoo ink after initiation of laser tattoo removal occurs because lasing causes extracellular displacement of tattoo pigment allowing for antigen recognition. Antigen removal either via excision or laser ablation is often required for resolution of the hypersensitivity reaction as seen herein. To our knowledge, this is the first case of tattoo hypersensitivity presenting as a biliary pruritus-like picture with generalized pruritus resulting in whole-body excoriations in the absence of primary lesions. The absence of primary lesions caused the patient to be misdiagnosed for over one year and may be an underrecognized presentation of tattoo hypersensitivity.

**References:**

1. Ashinoff R, Levine VJ, Soter NA. Allergic Reactions to Tattoo Pigment after Laser Treatment. Dermatol Surg. 1995;21(4):291-294. doi:10.1111/j.1524-4725.1995.tb00175.x
2. Bernstein EF. A widespread allergic reaction to black tattoo ink caused by laser treatment. Lasers Surg Med. 2015;47(2):180-182. doi:10.1002/lsm.22319
3. Harper J, Losch AE, Otto SG, Zirwas M, Delaney KO, Wakelin JK. New insight into the pathophysiology of tattoo reactions following laser tattoo removal. Plast Reconstr Surg. 2010;126(6):313e-314e. doi:10.1097/PRS.0b013e3181f63fde

**Primary Author(s):**
Kathryn Bentivegna, University of Connecticut Dermatology

**Co-Author(s):**
Reid Waldman, MD, University of Connecticut Department of Dermatology; Hao Feng, MD, UConn Health Department of Dermatology; Jun Lu, MD, Department of Dermatology, Univeristy of Connecticut

## Porphyria cutanea tarda unmasked by supratherapeutic estrogen during gender-affirming hormone therapy

A 55-year-old woman (transgender male-to-female) presented with a 3-month history of burning pain, pruritus and recurrent blisters on her forearms and hands following exposure to sunlight. One month prior to onset, the patient reported a supratherapeutic estradiol level that corresponded with a trial of micronized progesterone. Current medications included lisinopril, estradiol, medroxyprogesterone, spironolactone, and ibuprofen. She denied personal or family history of liver disease, hepatitis, iron abnormalities, or blistering eruptions. She consumed 2 beers daily and had a 30 pack-year smoking history. Physical examination confirmed the presence of vesicles and bullae on erythematous bases with scattered milia over the bilateral dorsal forearms, hands, and ears. Punch biopsy demonstrated a subepidermal blister overlying

festooning of the dermal papillae with minimal superficial perivascular lymphohistiocytic infiltrate and a negative immunofluorescence exam. A PAS stain was negative. Labs revealed mild hepatic transaminitis, unremarkable iron studies, elevated total serum porphyrins, urine uroporphyrin and heptaporphyrin, and HFE C282Y heterozygosity. Treatment of porphyria cutanea tarda (PCT) with photoprotection, withdrawal of estrogen, and initiation of hydroxychloroquine 100 mg twice weekly reduced the appearance of new bullae [1].

PCT arising in a male-to-female transgender patient on gender-affirming estrogen therapy has not been reported. Cost, drug shortages, and lack of clear standards leads to therapeutic inconsistency and variable hormone levels, which may unmask PCT in predisposed individuals [2,3,4]. It is important to recognize the potential risk for PCT in this growing demographic and consider hormone therapy adjustment as a therapeutic option, while being mindful of its important role in affirming gender identity [5].

**References:**


1. Bissell DM, Anderson KE, Bonkovsky HL. Porphyria. N Engl J Med 2017; 377:862-872.
2. Deutsch, MB. Overview of feminizing hormone therapy. UCSF Center of Excellence for Transgender Health: Transgender Care and Treatment Guidelines. June 17, 2016. Accessed online August 2019: https://transcare.ucsf.edu/guidelines/feminizing-hormone-therapy.
3. World Professional Association for Transgender Health. Standards of care for the health of transsexual, transgender, and gender nonconforming people. 7th ed; 2011. Accessed online August 2019: https://wpath.org/publications/soc.
4. Hembree WC, Cohen-Kettenis P, Delemarre-van de Waal HA, et al. Endocrine treatment of transsexual persons: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab 2009; 94:3132-54.
5. Leinung MC, Urizar MF, Patel N, et al. Endocrine treatment of transsexual persons: extensive personal experience. Endocr Pract 2013;19:644-50.



**Primary Author(s):**

Stephanie R. Jackson Cullison, MD, PhD, Department of Dermatology/University of Pittsburgh Medical Center

**Co-Author(s):**

Jaroslaw J. Jedrych, MD, Department of Dermatology, Johns Hopkins School of Medicine; Alaina J. James, MD, PhD


## Sarcoidosis with Small Syringotropic Granulomas Presenting Clinically as a Pigmented Purpuric Dermatosis: Inconspicuous Clinical and Histopathologic Clues to Systemic Illness

Sarcoidosis is a multisystem granulomatous disease with a myriad of clinical manifestations and a predilection to involve the lungs, lymph nodes and skin. A 38 year old man presented to dermatology with a history of progressive dyspnea, pulmonary consolidation on chest x-ray, and hilar adenopathy on CT scan. Skin exam revealed asymptomatic, yellow to brown macules on the right lower extremity. Biopsy of a lesion showed diminutive syringotropic granulomas and perivascular hemosiderin; stains for bacteria, mycobacteria and fungi were negative. Subsequent fine needle aspiration of a hilar mass revealed non-necrotizing epithelioid granulomas further supporting a diagnosis of sarcoidosis. The patient was placed on systemic steroids and had improvement of his pulmonary symptoms and stabilization of his hilar lymphadenopathy. Only three prior cases of syringotropic sarcoidosis have been reported; however, the biopsies had revealed conspicuously large granulomas in contrast with the small granulomas in our case, and none of the prior patients had clinical examination findings that mimicked pigmented purpuric dermatosis (PPD). Recognition of rare dermatologic and histologic appearances of sarcoid is paramount as cutaneous sarcoidosis may be a harbinger of a systemic illness, which requires a timely diagnosis.

**References:**


1. Hayakawa J, Mizukawa Y, Kurata M, Shiohara T. A syringotropic variant of cutaneous sarcoidosis: presentation of 3 cases exhibiting defective sweating responses. J Am Acad Dermatol. 2013;68(6):1016-1021.
2. Mana J, Marcoval J, Graells J, Salazar A, Peyri J, Pujol R. Cutaneous involvement in sarcoidosis. Relationship to systemic disease. Arch Dermatol. 1997;133(7):882-888.
3. Battle LR, Shalin SC, Gao L. Granulomatous pigmented purpuric dermatosis. Clin Exp Dermatol. 2015;40(4):387-390.
4. Bachmeyer C, Eguia B, Callard P, Moguelet P. Purpuric papulonodular sarcoidosis mimicking granulomatous

pigmented purpura. Eur J Dermatol. 2011;21(1):110-111.

**Primary Author(s):**
Brian James Simmons MD, Dartmouth Hitchcock Medical Center

**Co-Author(s):**
Xiaoying Liu MD; Marshall A. Guill MD; Robert E. LeBlanc MD, Dartmouth-Hitchcock Medical Center

## Cryptoccocus albidus cutaneous infection simulating squamous cell carcinoma

Crytococcus albidus, also known as Naganishia albida, is a very rare cause of cutaneous infection in both immunocompromised and immunocompetent individuals.

A 52-year-old male with diabetes mellitus, retinopathy, neuropathy, and chronic kidney disease presented to dermatology clinic with a verrucous and erosive plaque on the right dorsal foot for 9 months' duration. The lesion started as a hyperpigmented papule but spread gradually to involve the majority of his foot. He had previously been admitted and treated with broad spectrum antibiotics with minimal improvement. He had a skin biopsy which showed epitheliomatous hyperplasia with perivascular lymphohistiocytic inflammation. Following hospitalization, he was seen by a podiatrist and a general surgeon, both of whom recommended excision with skin grafting given the concern for squamous cell carcinoma.

Biopsy was repeated with tissue culture in the dermatology clinic, and Crytococcus albidus was isolated from culture four days later. The patient was treated with itraconazole for 12 weeks and the plaque completely resolved.

Crytoccus albidus infection has been reported in 24 patients, four of whom presented with primary cutaneous infection. The most common cutaneous presentation appears to be an exophytic and verrucous plaque that can resemble squamous cell carcinoma. This would be the second reported case of cutaneous infection in a patient without significant immunosuppression. In other reported cases, the organism has also been implicated in meningitits, peritonitis, keratitis, and sepsis. Clinicians should be aware of this rare organism, and tissue cultures should be obtained prior to complete excision in patients with a similar presentation.

**References:**

1. Gharehbolagh SA, Nasimi, S Agha Kuchak Afshari, Z Ghasemi, and S Rezaie. First case of superficial infection due to Naganishia albida (formerly Cryptococcus albidus) in Iran: A review of the literature. Curr Med Mycol. 2017 Jun; 3(2): 33–37.
2. Gyimesi A, Bator A, Gorog P, Telegdy E, Szepes E, Kappeter A, et al. Cutaneous Cryptococcus albidus infection. Int J Dermatol. 2017;56(4):452–4.
3. Hoang JK, Burruss J. Localized cutaneous Cryptococcus albidus infection in a 14-year-old boy on etanercept therapy. Pediatr Dermatol. 2007;24(3):285–8.
4. Lee YA, Kim HJ, Lee TW, Kim MJ, Lee MH, Lee JH, et al. First report of Cryptococcus albidus-induced disseminated cryptococcosis in a renal transplant recipient. Korean J Intern Med. 2004;19(1):53–7.
5. Narayan S, Batta K, Colloby P, Tan C. Cutaneous cryptococcus infection due to C albidus associated with Sezary syndrome. Br J Dermatol. 2000;143(3):632–4.

**Primary Author(s):**
Corey Georgesen, MD, University of Pittsburgh Medical Center

## TNF alpha inhibitor-induced folliculotropic granulomatous inflammation

TNF-alpha inhibitors have been associated with paradoxical dermatologic reactions, which can rarely manifest as granulomatous inflammation. Here we present a case of an Adalimumab-associated follicular eruption.

Patient History: A 51-year-old woman with a history of rheumatoid arthritis on multiple immunosuppressive therapies, including low-dose prednisone, methotrexate, sulfasalazine, and hydroxychloroquine developed an atypical folliculocentric papular eruption with hyperkeratotic spicules on the bilateral lateral trunk and breasts approximately two months after the

initiation of adalimumab.

Biopsies: A punch biopsy of the rash demonstrated a band-like distribution of loosely formed dermal granulomas containing multinucleated giant cells with associated dilated follicles containing columns of hyperkeratotic material. PAS stains and stains for acid-fast bacilli were negative

Laboratory Data: Studies demonstrated an unremarkable complete blood count and non-elevated erythrocyte sedimentation rate and C-reactive protein levels

Diagnosis: TNF-alpha inhibitor-induced folliculotropic granulomatous inflammation

Treatment: The patient was initially treated with topical betamethasone and a course of oral prednisone with minimal improvement. Following biopsy results, adalimumab was discontinued, however the rash has persisted.

Granulomatous skin eruptions are a rare complication of TNF-alpha inhibitor therapy and should be considered in patients who develop inflammatory eruptions after starting this class of medication.

**References:**


1. Garcovich, S., De Simone, C., Genovese, G., Berti, E., Cugno, M., & Marzano, A. V. (2019). Paradoxical Skin Reactions to Biologics in Patients With Rheumatologic Disorders. Frontiers in Pharmacology, 10, 282. https://doi.org/10.3389/fphar.2019.00282
2. Sakai, H., Nomura, W., & Sugawara, M. (2017). Certolizumab Pegol-Induced Folliculitis-Like Lichenoid Sarcoidosis in a Patient with Rheumatoid Arthritis. Case Reports in Dermatology, Vol. 9, pp. 158–163. https://doi.org/10.1159/000477957
3. Friedman, B. E., & English, J. C. 3rd. (2018, July). Drug-induced sarcoidosis in a patient treated with an interleukin-1 receptor antagonist for hidradenitis suppurativa. JAAD Case Reports, Vol. 4, pp. 543–545. https://doi.org/10.1016/j.jdcr.2018.03.007



**Primary Author(s):**
Alison Moynihan, MD, PhD, Department of Dermatology, University of Pittsburgh

**Co-Author(s):**
Xiaoxiao Li, MD, PhD, UPMC; Hannah Chang, University of Pittsburgh School of Medicine; Joseph English, III, MD, University of Pittsburgh Department of Dermatology


## Acquired ichthyosis as a paraneoplastic presentation of peripheral T-cell lymphoma

A 75-year-old Caucasian man presented to the hospital with six months of worsening xeroderma in the setting of chronic fatigue and 30-lbs unintentional weight loss. Physical exam revealed an extensive ichthyosiform eruption with large brown polygonal scales and underlying pink erythema primarily on the extensor surfaces. Additional findings included perioral fissures, decreased facial wrinkling, and bilateral ectropion.

Skin punch biopsy from the chest wall showed diffuse parakeratosis with hypogranulosis, spongiosis, dyskeratosis, and dermal perivascular/periadnexal lymphoid infiltrates. Peripheral blood analysis showed significant leukocytosis, normocytic anemia, and elevated erythrocyte sediment rate and lactate dehydrogenase. Serum protein electrophoresis revealed increased kappa/lambda light chains but no M-band; flow cytometry revealed no monoclonal B or T-cell populations. Chest positron emission tomography-computed tomography detected paratracheal, subcarinal, and supraclavicular lymphadenopathy with associated fluorodeoxyglucose uptake. Endobronchial ultrasound-guided biopsy of mediastinal nodes revealed CD30+; CD4+; ALK- large pleomorphic lymphocytes. Based on the clinical and histopathologic findings, a diagnosed of CD30+ peripheral T-cell lymphoma with a paraneoplastic acquired ichthyosis was made. Frequent applications of petrolatum improved the patient's skin laxity and decreased scaling; however, definitive resolution requires treatment of the underlying malignancy. Systemic chemotherapy with brentuximab-vedotin, cyclophosphamide, doxorubicin, and prednisone was initiated.

Acquired ichthyosis is a rare presentation observed primarily in association with lymphoproliferative disorders. This case highlights the importance of recognizing acquired ichthyosis as a paraneoplastic dermatosis that could lead to the diagnosis of underlying malignancies. The discussion will focus on the clinical and histopathologic findings of acquired ichthyosis, its disease associations, work-up, management, and review of current literature.

**References:**

1. Chung, V. Q., Moschella, S. L., Zembowicz, A., & Liu, V. (2006). Clinical and pathologic findings of paraneoplastic dermatoses. Journal of the American Academy of Dermatology, 54(5), 745-762.
2. Katoa, N., Yasukawaa, K., Kimuraa, K., & Yoshidab, K. (2000). Anaplastic large-cell lymphoma associated with acquired ichthyosis. Journal of the American Academy of Dermatology, 42(5), 914-920.
3. Word, A. P., Cayce, R., & Pandya, A. G. (2014). Beware of underlying malignancy: acquired ichthyosis. The American journal of medicine, 127(3), 202-204.

**Primary Author(s):**
Edward Li, Harvard Medical School

**Co-Author(s):**
Cristy Garza-Mayers, Harvard Combined Dermatology Residency Program; Lyn McDivitt Duncan, Mass General Hospital/Harvard Medical School; Daniela Kroshinsky, HArvard Medical School, Massachusetts General Hospital

## Metastatic Crohn Disease: An Unusual Presentation of a Rare Condition

A 16-year-old female presented with a nodule on her medial left lower extremity that progressed to a painful ulceration after swimming in brackish waters in South Carolina. After numerous courses of antibiotics, based on cultures suggesting superinfection with S. aureus and P. aeruginosa, the wound was debrided and healed over the course of 6 months. She subsequently developed an indurated pink nodule with superficial ulceration on her left pretibial area. Punch biopsy showed granulomatous panniculitis with caseating necrosis and superficial and deep perivascular and interstitial mixed infiltrate. Special stains and tissue cultures were negative for fungi and mycobacteria and PCR was negative for atypical mycobacteria. Multiple subsequent biopsies showed similar histopathologic features and negative microbiologic studies of tissue. One year after the initial nodule presented, the patient experienced abdominal pain, decreased appetite and unintentional 10-pound weight loss over a month. Colonoscopy revealed extensive colitis and terminal ileitis consistent with Crohn disease, confirmed by biopsy. She was treated with infliximab and methotrexate and her skin lesions gradually resolved over three months.

The term, “metastatic Crohn disease” (cutaneous Crohn disease), was coined in 1965 to refer to cutaneous lesions seen in tissue non-contiguous to the gastrointestinal tract.[1,2] This case is unusual in that granulomatous panniculitis and leg ulceration antedated clinical symptoms of Crohn disease by nearly one year. Granulomatous panniculitis with negative special stains, tissue cultures and molecular studies for infectious organisms should prompt workup for Crohn disease.

**References:**

1. Campos S, Coutinho I, Cardoso JC, Portela F. Metastatic Crohn's disease despite infliximab therapy. An Bras Dermatol. 2017;92(5 Suppl 1):104–106. doi:10.1590/abd1806-4841.20175713
2. Bender-Heine A, Grantham JT, Zaslau S, Jansen R. Metastatic Crohn disease: a review of dermatologic manifestations and treatment. Cutis. 2017;99(6):E33-e40.

**Primary Author(s):**
Elisabeth A. George, BA, Warren Alpert Medical School of Brown University

**Co-Author(s):**
Leslie Robinson-Bostom, The Warren Alpert Medical School of Brown University; Lionel Bercovitch

## Rowell’s Syndrome in a 52-year-old Woman

A 52-year-old woman with a reported history of seronegative lupus and mixed connective tissue disease managed with hydroxychloroquine presented with a widespread, painful, blistering rash of one week's duration. She reported several similar, less severe episodes over the past nine years that resolved with steroids. Physical examination revealed well-demarcated periorificial erosions with cornflake-like scale on the forehead, glabella, nasolabial, and periorificial skin; impressive geometric plaques and erosions on the tongue; edematous and eroded lips, buccal mucosa, palate, and diffusely eroded anogenital mucosa; erythematous bullae with atypical targetoid appearance at her palms; and flaccid bullae and erosions of the dorsal hands, trunk, and extremities. Two 4-mm punch biopsies of the left shin showed orthokeratosis, full-thickness epidermal necrosis, a subepidermal split with focal perifollicular re-epithelialization, and a superficial predominantly lymphocytic infiltrate suggestive of a brisk interface process. Direct immunofluorescence demonstrated deposition of IgA, IgM, IgG, and C3 within the superficial dermis consistent with colloid bodies. An outside biopsy showed focal acantholysis and dyskeratosis with a lymphohistiocytic infiltrate in the papillary dermis. A complete blood count, C3, C4, ESR, and CRP were unremarkable. Anti-dsDNA antibodies were negative. A working diagnosis of Rowell's syndrome with possible concurrent pemphigus erythematosus was made, and the patient was started on a prednisone taper as a bridge to mycophenolate mofetil therapy. However, after initial improvement on prednisone for one week, she discontinued therapy and resumed follow-up with rheumatology.

**References:**


1. Rowell Nr, Beck Js, Anderson Jr. Lupus Erythematosus And Erythema Multiforme-Like Lesions. A Syndrome With Characteristic Immunological Abnormalities. Arch Dermatol. 1963 Aug;88:176-80. Doi: 10.1001/Archderm.1963.01590200064012. Pubmed PMID: 14043605.
2. Child Fj, Kapur N, Creamer D, Kobza Black A. Rowell's syndrome. Clin Exp Dermatol.1999 Mar;24(2):74-7. Review. Pubmed PMID: 10233657.
3. Zeitouni Nc, Funaro D, Cloutier Ra, Gagné E, Claveau J. Redefining Rowell's syndrome. Br J Dermatol. 2000 Feb;142(2):343-6. Doi: 10.1046/J.1365-2133.2000.03306.X. Pubmed PMID: 10730772.



**Primary Author(s):**

Brett Austin, MD, Texas Tech University Health Sciences Center, Department of Dermatology

**Co-Author(s):**

Usman Asad, BS, Texas Tech University Health Sciences Center School of Medicine; Ashley Sturgeon, MD, Texas Tech University Health Sciences Center


## A Three-Year-Old Female with Conical Teeth, Hypohidrosis, and Xerotic Patches

A 3-year-old female accompanied by her parents presented to dermatology with complaints of dry patches of skin since birth affecting the trunk and extremities. The patient was born full term and all milestones were met on schedule. The mother identified conical teeth and sought further care. The family reported hypohidrosis during exertion. The patient had two unaffected siblings and parents. On physical exam, the patient was found to have conical teeth, sparse, short blonde hair, onychorrhexis, and hypermobile joints. A skin biopsy was not performed due to a pre-identified mutation in WNT10A gene. The Wnt genes are involved in cell-cell interactions during embryogenesis and are important in the development of hair, skin, and teeth.[1] A diagnosis of odonto-onycho-dermal dysplasia was confirmed. Temperature control and external methods of cooling to avoid overheating were discussed. Regular use of moisturizers and avoidance of fragrances was recommended. Hydrocortisone 2.5% ointment twice daily was prescribed for eczematous patches. Referral for dental restoration was offered.

**References:**


1. Adaimy, L., et al., Mutation in WNT10A is associated with an autosomal recessive ectodermal dysplasia: the odonto-onycho-dermal dysplasia. Am J Hum Genet, 2007. 81(4): p. 821-8.



**Primary Author(s):**

Cynthia Nicholson, MD, Wayne State University Department of Dermatology

**Co-Author(s):**

Geoffrey Potts MD, FAAD, Wayne State University

## Cutaneous Presentation of ALK+ Anaplastic Large Cell Lymphoma in a 12-year-old Male with Regional Nodal Involvement

A 12-year-old male presented with a 5-month history of pink papules on the left upper back. They did not wax and wane or ulcerate. He had applied topical antibiotics, calamine lotion, and topical antifungals without improvement. He had seen an outside dermatologist and a biopsy showed T lymphocytes in the dermis with diffuse CD3, CD4, CD5, CD8, and CD30 positivity, thought to be consistent with lymphomatoid papulosis (LyP). CBC with differential and CMP were reassuring. He was referred to our pediatric oncology and pediatric dermatology clinics. Examination revealed a cluster of 3-4 erythematous, indurated, non-tender papules on the left upper back. One was atrophic. There was no adenopathy. Re-evaluation of the original biopsy showed ALK positivity, favoring anaplastic large cell lymphoma (ALCL). Repeat labs including CBC with differential, CMP, LDH, and flow cytometry were normal. PET-MRI showed uptake in the affected skin and left axillary lymph nodes. Bone marrow biopsy and lumbar puncture were negative. He was diagnosed with stage II ALK+ ALCL and treated as low risk with multi-agent chemotherapy. Subsequent PET showed a substantial decrease in metabolic activity within the skin and resolution of uptake in the left axillary nodes.

ALCL and LyP are on a spectrum of CD30+ lymphoproliferative disorders with overlapping clinical and histologic features.(1) While LyP follows an indolent course, ALCL must be distinguished between primary cutaneous (pcALCL) and systemic disease with cutaneous involvement.(1) Both pediatric pcALCL and systemic ALCL can be ALK+ and pcALCL can have regional nodal extension, making the diagnosis nuanced.(2)

**References:**


1. Sauder MB, O'Malley JT, LeBoeuf NR. CD30(+) Lymphoproliferative Disorders of the Skin. Hematol Oncol Clin North Am. 2017;31(2):317-334.
2. Montes-Mojarro IA, Steinhilber J, Bonzheim I, Quintanilla-Martinez L, Fend F. The Pathological Spectrum of Systemic Anaplastic Large Cell Lymphoma (ALCL). Cancers. 2018;10(4).



**Primary Author(s):**

Olivia M.T. Davies, BS, Medical College of Wisconsin

**Co-Author(s):**

Garrett N. McCoy, MD, Medical College of Wisconsin; Valerie M. Carlberg, MD, Medical College of Wisconsin, Children's Hospital of Wisconsin


## In vivo ANA in Palisaded Neutrophilic and Granulomatous Dermatitis

In vivo fluorescence staining of anti-nuclear antibodies (ANA) in keratinocytes is a useful adjuvant method in the diagnosis of connective tissue diseases (CTD). However, this is a relatively rare phenomenon with an incidence of 1-10% of skin biopsies taken from patients with known autoimmune disease.[1] Palisaded neutrophilic and granulomatous dermatitis (PNGD) is part of a spectrum of so-called “reactive granulomatous dermatitis,” and represents a cutaneous reaction pattern that occurs secondary to a number of systemic triggers, including CTD.[2] In vivo ANA has not been previously reported in PNGD.

We present two patients with skin rashes: a 27 year old female with a long-standing history of systemic lupus erythematosus (SLE) with overlapping features of Sjogrens, Scleroderma, and Rheumatoid arthritis, and a 54 year old female with a new diagnosis of SLE. Biopsies demonstrated histopathological changes of PNGD on H+E evaluation of biopsy material, and in vivo ANA on direct immunofluorescence (DIF) studies. DIF showed keratinocytic nuclear homogeneous IgG pattern in one patient, and cytoplasmic particulate IgG pattern in the other patient. Serum auto-antibodies correlated with DIF findings in the skin. Clinical examination and cutaneous response to treatment with corticosteroids substantiated the diagnosis of autoimmune CTD in both patients. In vivo ANA evaluation is an important tool in the diagnosis of PNGD in the setting of CTD.

**References:**


1. Sousa JX, Miyamoto D, Zimbres JM, Costa DV, Aoki V. Clinicopathological evaluation of in vivo epidermal nuclear fluorescence. Clinical and Experimental Dermatology. Volume 34, pp 314-318. March 2008. doi:10.1111/j.1365-

2230.2008.02947.x
2. Rosenbach M, English JC. Reactive Granulomatous Dermatitis: A Review of Palisaded Neutrophilic and Granulomatous Dermatitis, Interstitial Granulomatous Dermatitis, Interstitial Granulomatous Drug Reaction, and a Proposed Reclassification. Dermatologic Clinics; 33(3), pp 373-387. July 2015. doi: 10.1016/j.det.2015.03.005.

**Primary Author(s):**
Micaella R. Zubkov, MS3, University of Connecticut School of Medicine

**Co-Author(s):**
Jinhong Dong, MS2, University of Connecticut School of Medicine; Gillian Weston, MD, UConn Health; Michael Storonsky, MD, University of Connecticut Health Center; Michael Murphy, MD, UConn Health

## Syringotropic and Folliculotropic Mycosis Fungoides Presenting as a Challenging Case of an Adult Onset, Recalcitrant Acneiform Eruption

Folliculotropic Mycosis Fungoides (FMF) is a subtype of mycosis fungoides (MF) that differs histologically, clinically, and prognostically from classic MF. The histologic pattern may vary, and patients will often have multiple patterns found on different biopsies. This histologic variance often leads to delays in diagnosis of FMF, with common misdiagnoses of acne, epidermal inclusion cysts, comedos, or granulomatous dermatitis[(1)]. We present a challenging case of a 53-year-old female with a five-year history of a widespread acneiform eruption. She was previously treated by multiple outside dermatologists with topical retinoids, topical and oral antibiotics, and a nine-month course of oral isotretinoin with minimal benefit. Due to the late-onset, severity, and recalcitrance of her condition, chloracne was considered but she had no related exposures. Over a period of two. years, the patient had multiple biopsies consistent with milia and ruptured follicular cysts. She then developed a new eruption on her left hand and bilateral feet that that differed morphologically from her acneiform eruption. Biopsy of this eruption showed a focal lichenoid infiltrate with focal epidermotropism and a positive T-cell receptor (TCR) gene rearrangement. Six further punch biopsies were obtained, all which showed a perifollicular and peri-eccrine population of atypical lymphocytes consistent with syringotropic and FMF. Syringotropic MF (STMF) is a histologic variant of FMF that exhibits atypical lymphocytes infiltrating eccrine structures. About 4 to 33% of biopsies of FMF have syringotropism on histology[(1)] and STMF has been shown in small case studies to have a more favorable prognosis than non syringotropic FMF[(5)].

**References:**
1. Demirkesen C, Esirgen G, Engin B, et al. The clinical features and histopathologic patterns of folliculotropic mycosis fungoides in a series of 38 cases. Journal of cutaneous pathology 2015;42(1):22-31. doi: 10.1111/cup.12423 [published Online First: 2014/11/08]
2. Mitteldorf C, Stadler R, Sander CA, et al. Folliculotropic mycosis fungoides. Journal der Deutschen Dermatologischen Gesellschaft = Journal of the German Society of Dermatology : JDDG 2018;16(5):543-57. doi: 10.1111/ddg.13514 [published Online First: 2018/05/05]
3. van Santen S, Roach RE, van Doorn R, et al. Clinical Staging and Prognostic Factors in Folliculotropic Mycosis Fungoides. JAMA dermatology 2016;152(9):992-1000. doi: 10.1001/jamadermatol.2016.1597 [published Online First: 2016/06/09]
4. Bagot M. Folliculotropic mycosis fungoides is a heterogenous group. The British journal of dermatology 2017;177(1):17-18. doi: 10.1111/bjd.15664 [published Online First: 2017/07/22]
5. de Masson A, Battistella M, Vignon-Pennamen MD, et al. Syringotropic mycosis fungoides: clinical and histologic features, response to treatment, and outcome in 19 patients. Journal of the American Academy of Dermatology 2014;71(5):926-34. doi: 10.1016/j.jaad.2014.06.033 [published Online First: 2014/07/22]

**Primary Author(s):**
Jacquelyn Majerowski, MD, Medical College of Wisconsin

**Co-Author(s):**
Keri Chaney, Medical College of Wisconsin; Sun Young Ruggeri

## Pyoderma gangrenosum and Cushing’s syndrome: A Pathophysiological

## Paradox

Pyoderma gangrenosum is a challenging, rare, ulcerating skin disease characterized by neutrophilic abundance absent of infection and is often associated with systemic diseases [1,2]. We present a 25-year old female without prior medical history that presented with a 1.5-year history of pyoderma gangrenosum treated previously with oral prednisone with no known comorbid association. On exam, there were multiple underminable ulcerations on her right and left lower extremities and cribriform scarring. Macular purpura on the bilateral upper extremities, truncal striae, and plethora/moon facies were also observed. Treatment with Mycophenolate mofetil and local wound care was initiated, which resulted in limited improvement and preliminary laboratory testing revealed elevated cortisol and low ACTH levels, suggesting an ACTH-independent Cushing's syndrome. A CT-scan revealed a 3-cm adrenal nodule, and an adrenalectomy was performed subsequently, demonstrating an adrenal adenoma on pathology. Following surgery, her symptoms rapidly resolved and systemic immunosuppressants were discontinued with continued remission to date. This is an unusual, complex case of pyoderma gangrenosum. Although systemic steroids are often first-line for active disease, few cases report an association between Cushing's syndrome, a disorder caused by excess steroids, and pyoderma gangrenosum [3,4]. In this case, given her age, gender, and history of previous oral prednisone, exogenous Cushing's syndrome would usually be more common since only a few adrenal incidentalomas are cortisol-producing adenomas causing endogenous Cushing's syndrome [5,6]. This rare case highlights the importance of performing a complete workup of Cushing's syndrome for someone with Cushing's syndrome-like features and pyoderma gangrenosum even amidst the pathophysiologic paradox.

**References:**

1. Ahronowitz, I., Harp, J. & Shinkai, K. Am J Clin Dermatol (2012) 13: 191. https://doi.org/10.2165/11595240-000000000-00000
2. Pathophysiology of pyoderma gangrenosum (PG): An updated review. Braswell, Sara F. et al. Journal of the American Academy of Dermatology, Volume 73, Issue 4, 691 – 698
3. De Silva, B. and Doherty, V. (2000), Coexistence of pyoderma gangrenosum and Cushing's disease: a paradoxical association?. British Journal of Dermatology, 142: 1051-1052. doi:10.1046/j.1365-2133.2000.03499.x
4. Cole HG, Nelson RL, Peters MS. Pyoderma gangrenosum and adrenocortical carcinoma. Cutis. 1989 Sep;44(3):205-8.
5. Arnold, D. T., Reed, J. B., & Burt, K. (2003). Evaluation and management of the incidental adrenal mass. Proceedings (Baylor University. Medical Center), 16(1), 7–12. doi:10.1080/08998280.2003.11927882
6. Sharma, S. T., Nieman, L. K., & Feelders, R. A. (2015). Cushing's syndrome: epidemiology and developments in disease management. Clinical epidemiology, 7, 281–293. doi:10.2147/CLEP.S44336

**Primary Author(s):**
Chapman Wei, BS, George Washington University School of Medicine and Health Sciences

**Co-Author(s):**
Adam J. Friedman, GW School of Medicine and Health Sciences

## Fatal GNAQ-mutated CNS melanoma in an adolescent with nevus of Ota

We present the case of an 18-year-old Caucasian male with a history significant only for left-sided nevus of Ota. He presented with a worsening headache, previously intermittent and associated with left eye ptosis for three years. Symptoms intensified four weeks prior to presentation, and he developed nausea and vomiting.

Brain MRI showed a frontal mass, and a biopsy was performed. Pathology was consistent with melanoma, with immunohistochemistry positive MiTF, MART-1, and S100, and negative for BRAF V600E. DNA isolated from the excised specimen identified a GNAQ-R183Q mutation. Staging studies and a full-body skin exam revealed no evidence of metastatic disease or primary tumors outside the CNS. However, several small enhancing lesions were noted, consistent with leptomeningeal disease. Despite radiotherapy, ipilimumab/nivolumab, and temozolomide, his leptomeningeal disease progressed, causing hydrocephalus, seizures, altered mental status requiring intubation, and ultimately his death nine months after initial diagnosis.

Development of CNS melanoma in patients with nevus of Ota is exceedingly rare, usually arising in the fifth decade.[1-4] Primary noncutaneous melanoma often involves distinct genetic mutations compared to cutaneous melanoma. Nevus of

Ota and uveal melanomas are known to harbor GNAQ mutations.[5] Most commonly, somatic mutations in the Q209 and R183 residues of GNAQ likely induce tumorigenesis through upregulation of the MAP kinase pathway.[6] This case underscores the importance of elucidating neurologic symptoms early in patients with nevus of Ota, as a delayed presentation could portend a devastating outcome.

**References:**


1. Bhattacharya, S. K., Girgla, H. S., & Singh, G. (1973). Nevus of Ota. International Journal of Dermatology, 12(6), 344-347
2. Patel BC, Egan CA, Lucius RW, Gerwels JW, Mamalis N, Anderson RL. Cutaneous malignant melanoma and oculodermal melanocytosis (nevus of Ota): report of a case and review of the literature. J Am Acad Dermatol 1998;38:862-5.
3. Shaffer, D., Walker, K., & Weiss, G. R. (1992). Malignant melanoma in a Hispanic male with nevus of Ota. Dermatology, 185(2), 146-150.
4. Liubinas SV, Maartens N, Drummond KJ: Primary melanocytic neoplasms of the central nervous system. J Clin Neurosci 17:1227-1232, 2010
5. Toomey CB, Fraser K, Thorson JA, Goldbaum MH, Lin JH. GNAQ and PMS1 Mutations Associated with Uveal Melanoma, Ocular Surface Melanosis, and Nevus of Ota. Ocul Oncol Pathol. 2019 Jun;5(4):267-272.
6. Van Raamsdonk CD, Griewank KG, Crosby MB, et al. Mutations in GNA11 in uveal melanoma. N Engl J Med 2010; 363:2191.



**Primary Author(s):**

Andrew R. Blundell, MSc, Department of Dermatology, Massachusetts General Hospital

**Co-Author(s):**

Danna Moustafa, Harvard Medical School; Massachusetts General Hospital; Wesley R. Samore, MD; Elena B. Hawryluk, MD PhD, Massachusetts General Hospital, Harvard Medical School


## p-ANCA Positive Neutrophilic Dermatosis in Setting of NSCLC

A 55-year-old female with a history of rheumatoid arthritis (on chronic prednisone and hydroxychloroquine) and a 40-pack year smoking history presented with joint pains and skin lesions of 4 weeks duration. On bilateral malar cheeks, patient had erythematous cribriform hypertrophic plaques that were exquisitely tender to palpation and drained purulent material. In addition, on the right shin, was a large mottled, erythematous patch with atrophy. A biopsy of the left neck lesion was performed and demonstrated dense perifollicular and interstitial dermal mixed inflammation. At that time, a diagnosis of sweets/rheumatoid neutrophilic dermatosis was discussed. Initial lab work was performed, including RA, ANA, CCP. The ANA, RF and CCP were negative. Rheumatology considered a Sweets like arthritis. Methotrexate was started as a steroid sparing agent. Additional lab work was ordered including DS-DNA and an ANCA screen, p-ANCA was found to be positive. Despite therapy, lesions on cheeks continued to worsen with more drainage and erythema. Given worsening lesions, Dapsone 50 mg PO daily was started. During this time a chest x-ray was performed and demonstrated a lung nodule. Subsequent CT and biopsy were performed and demonstrated a lung adenocarcinoma. Patient continued to be managed with dapsone 200mg daily, MTX 20mg weekly, Topical hydrocortisone and betamethasone. We noticed significant improvement of the lesion on the right shin and moderate improvement on bilateral cheeks. The final diagnosis: p-ANCA positive neutrophilic dermatosis with components of sweets and pyoderma gangrenosum, likely paraneoplastic in setting of newly diagnosed Non-small cell lung cancer.


**Primary Author(s):**

Braden Candela, MD, UPMC Dermatology

**Co-Author(s):**

Braden Candela; Timothy Patton, University of Pittsburgh/Department of Dermatology


## Acute generalized exanthematous pustulosis secondary to Loxosceles reclusa envenomation

A 16-year-old female with no significant past medical history presented to an academic medical center with fever and a widespread pustular eruption. The patient reported a spider bite 6 days prior at a home known to be infested with Loxosceles reclusa. Over the next 2 days she developed a total body eruption and fevers. Her labs were significant for white blood cells 13.8, eosinophils 9.9%, hemoglobin 10.2, total bilirubin 1.9, direct Coombs negative. The patient was admitted due to concern for staphylococcal scalded skin syndrome and systemic loxoscelism. Dermatology was consulted to further evaluate the patient's erythroderma.

Examination was significant for a large ulceration on the left shoulder with overlying black eschar and minimal surrounding erythema. On the neck, chest, abdomen, back and extremities (approximately 80% BSA) was confluent blanching erythema studded with 1-2mm pustules.

Punch biopsy of the left shoulder ulceration showed epidermal necrosis with overlying diffuse dermal inflammation and fibroplasia consistent with an arthropod bite, including that of a brown recluse. Biopsy of the erythematous eruption on the left arm showed subcorneal pustules, spongiosis, and dermal eosinophils consistent with acute generalized exanthematous pustulosis (AGEP).

The patient was started on oral prednisone 60mg daily with resolution of fever as well as marked improvement in skin. The patient was ultimately felt to have AGEP secondary to a brown recluse bite. Though rare, this has been described in a few case reports throughout the literature, and is something to consider as an additional cause of AGEP[1-4].

**References:**


1. Davidovici BB, Pavel D, Cagnano E, Rozenman D, Halevy S, EuroSCAR et al. Acute generalized exanthematous pustulosis following a spider bite: report of 3 cases. J Am Acad Dermatol. 2006;55:525–529.
2. Lane L, McCoppin HH, Dyer J. Acute generalized exanthematous pustulosis and Coombs-positive hemolytic anemia in a child following Loxosceles reclusa envenomation Pediatr. Dermatol. 2011;28:685–688.
3. Makris M, Spanoudaki N, Giannoula F, Chliva C, Antoniadou A, Kalogeromitros D. Acute generalized exanthematous pustulosis (AGEP) triggered by a spider bite. Allergol Int. 2009;58:301–303.
4. Milman Lde M, Müller GP, Souza PR, et al. Acute generalized exanthematous pustulosis associated with spider bite. An Bras Dermatol. 2016;91(4):524–527.



**Primary Author(s):**

Rachel Barker, MD, Vanderbilt University Medical Center

**Co-Author(s):**

Anna Kristine Dewan, MD, Vanderbilt University Medical Center; Alan S. Boyd, MD, Depts of Dermatology and Pathology, Vanderbilt University Medical Center


## Bubble trouble: hair fragility in the setting of bubble hair

A 62-year-old female with history of hyperparathyroidism presented to dermatology clinic with 2 year history of increasing hair loss resulting in increased part-line width. The patient reported that her hair was more brittle and frequently broke into small fragments. Physical examination revealed numerous, approximately 9cm coarse hairs on the temporal, occipital, and parietal scalp, which were broken at the ends and easily broke with gentle palpation. Light microscopy of hair clippings demonstrated presence of 'bubbles' in nearly every hair shaft. Laboratory work-up including thyroid stimulating hormone, iron, ferritin, zinc, and complete blood count was unremarkable.

Bubble hair is an acquired hair shaft abnormality, characterized by gas bubbles within the hair shaft. These 'bubbles' are most notably seen in the medullary region under light microscopy. They occur upon exposure of wet hair to excessive heat, which results in rapid evaporation that creates vacuoles of steam within the hair shaft. Hairs may become weak and brittle as the 'bubbles' destroy the integrity of the hair shaft. Examination may reveal diffuse hair thinning and increased fragility, with breakage being more common in the parietal and occipital regions. As this thermal injury most commonly results from the use of hair dryers, curling irons and straighteners, and can occur after just one minute of use, treatment includes avoidance of excessive heat on the hair. This case highlights a common, yet rarely diagnosed or reported entity, which should be considered in the differential diagnosis of patients presenting with a history of hair loss.

**References:**
1. Mehregan, D. R., Sayoc, L., Ramos, D., & Misra-Higgins, I. (2006). “Bubble hair,” a report of two cases. International journal of dermatology, 45(11), 1319-1320.
2. Savitha, A. S., Sacchidanand, S., & Revathy, T. N. (2011). Bubble hair and other acquired hair shaft anomalies due to hot ironing on wet hair. International journal of trichology, 3(2), 118.
3. Wallace, M. P., & De Berker, D. A. (2010). Hair diagnoses and signs: the use of dermatoscopy. Clinical and Experimental Dermatology: Clinical dermatology, 35(1), 41-46.

**Primary Author(s):**
Daniel Michalik, MD, Cleveland Clinic

**Co-Author(s):**
Katherine Glaser; Mellisa Piliang

## Metastatic squamous cell carcinoma mimicking Wells’ Syndrome

A 66 year-old male with history of P16+ squamous cell carcinoma (SCC) of the tongue with right axillary metastases, presented with persistent pruritus and induration of his right breast of 8 weeks duration. He had completed radiation to the right axilla 4 months earlier. Biopsy revealed a prominent dermal perivascular eosinophilic and lymphocytic infiltrate with multiple flame figures. Laboratory values were remarkable for peripheral eosinophilia. The findings were compatible with Wells’ Syndrome (Eosinophilic Cellulitis) and the patient was started on systemic steroids. One month later, the patient’s condition remained unchanged. Exam was notable for non-tender induration and extensive nodularity of the right breast extending toward the axilla. Repeat biopsy was remarkable for obvious metastatic SCC with extensive lymphatic involvement. This prompted further review of the original biopsy, revealing micro-metastases surrounded by the unusually dense eosinophilic infiltrate. The patient subsequently received another course of radiation to his right chest wall with no adverse reactions.

Wells’ Syndrome is an uncommon inflammatory dermatosis characterized by distinct histopathologic features including dense dermal eosinophilic infiltrate, dermal edema, and “flame figures” (eosinophilic material deposited on collagen fibers). Clinically, lesions can appear as urticarial plaques, erythematous papules or nodules. Patients may report associated pruritus or burning. Wells’ syndrome has been associated with various hematologic diseases, solid tumors (SCC), and infections. Although micro-metastatic SCC was present on original biopsy, the dense eosinophilic infiltrate was extremely uncharacteristic for SCC. When considering a diagnosis of Wells’ Syndrome, clinicians should be aware of this unusual presentation of metastatic SCC.

**References:**
1. Räßler, F., J. Lukacs, and P. Elsner. "Treatment of eosinophilic cellulitis (Wells syndrome)–a systematic review." Journal of the European Academy of Dermatology and Venereology 30.9 (2016): 1465-1479.
2. Peckruhn, Melanie, et al. "Life of Lesions in Eosinophilic Cellulitis (Wells' Syndrome)—A Condition That May Be Missed at First Sight." The American Journal of Dermatopathology 37.2 (2015): e15-e17.
3. Farrar, C. W., D. M. Guerin, and N. J. E. Wilson. "Eosinophilic cellulitis associated with squamous cell carcinoma of the bronchus." British Journal of Dermatology 145.4 (2001): 678-679.
4. Lee, Un Ha, Jung Chul Choi, and Duk Kyu Chun. "Wells' syndrome associated with esophageal squamous cell carcinoma." Korean J Dermatol 43.8 (2005): 1130.

**Primary Author(s):**
Robert Simonds, MD, Cleveland Clinic Foundation Department of Dermatology

**Co-Author(s):**
Manisha Manmohan; Joshua Arbesman, Cleveland Clinic; Steven Billings, Cleveland Clinic, Department of Pathology; Wilma Bergfeld, Cleveland Clinic

## Neutrophilic eccrine hidradenitis secondary to antipsychotic use

A 35 year old woman was admitted to hospital with hyponatraemia. She had a background of severe depression with catatonia. Whilst she was an inpatient, she developed a vesicular rash across her neck, chest and abdomen.

A biopsy from the rash demonstrated a mild degree of perivascular and periadnexal inflammation. Most strikingly on histology, there was a moderately dense infiltrate around a group of eccrine glandular units in the deeper dermis tissue composed predominantly of neutrophils and some eosinophils. The histology was in keeping with a Neutrophilic Eccrine Hidradenitis (NEH) secondary to a drug eruption. In this case, the drug was Flupentixol.

NEH is a rare entity, most often associated with the administration of chemotherapy related agents, (usually Cytarabine used in the treatment of acute myeloid leukaemia).[1,2] In our case, the offending drug was Flupentixol (an antipsychotic drug), commenced two weeks prior to admission. This is a novel case of NEH, with typical histology findings caused atypically by an antipsychotic agent. Recently, Ticagrelor (an antiplatelet agent) has been reported as a causative agent for NEH.[3]

Classically in NEH, painful erythematous papules and plaques are found on the trunk, although the presentation can be variable.[1] The diagnosis is confirmed by the classical changes seen on histology with dense neutrophilic infiltrate around eccrine glands. The pathophysiology is not well understood but thought to be a cytotoxic process directed at sweat glands, initiated by administration of medication.[1] Cessation of the offending drug most often leads to resolution of symptoms.1

**References:**


1. Bolognia, J. Jorizzo, J. Schaffer, J. (2012) Dermatology, 3rd edition, Elsevier Saunders. Volume 1, 599-600
2. Bachmeyer, C. & Aractingi, S. (2000). Neutrophilic eccrine hidradenitis. Clinics in Dermatology, 18 (3), 319 – 330
3. Bishnoi, A et al. (2019) Ticagrelor induced neutrophilic eccrine hidradentis: a unique adverse effect of a new antiplatelet drug. Postgraduate Medical Journal; 95:279-280



**Primary Author(s):**
Zahra Haider, MBBS, iBSc, MRCP (UK), Birmingham Skin Centre, Sandwell and West Birmingham Hospital NHS Trust

**Co-Author(s):**
Anthony Abdullah


## Dermal pigment overlying an artificial joint

A 74-year-old female presented to dermatology clinic with chief complaint of an itchy, swollen eruption on the left arm of two years' duration. Exam revealed erythematous, somewhat indurated plaques studded with multiple foci of dull grey hyperpigmentation overlying the elbow, distal upper arm and proximal forearm.
The patient sustained a fall in 2014 which caused a left humeral fracture necessitating open reduction and internal fixation with placement of plates and screws. Due to chronic left elbow pain, swelling and rash, she underwent hardware removal and subsequent total arthroplasty in 2017. However, the skin eruption persisted. Infectious disease performed multiple joint aspirations which failed to reveal an infectious cause. Multiple courses of antibiotic therapy failed to alter the disease course.

A punch biopsy revealed superficial and deep lymphohistiocytic inflammation with numerous well-formed granulomas. Inflammation extended to but did not involve the subcutaneous fat. Dark pigment granules were scattered throughout the superficial and deep dermis. AFB, Fite and PAS stains were noncontributory. Tissue culture was negative.
The patient was subsequently diagnosed with cutaneous metallosis, a well-recognized, but rare sequela of metal device implantation which is usually associated with device failure[1, 2]. While well documented in the orthopedic literature, cutaneous metallosis is infrequently reported in the dermatology literature. Management is primarily surgical and usually involves debridement and replacement of hardware. However, the dermatologist and/or dermatopathologist may play a critical role in diagnosis and workup of these patients.

**References:**


1. Pritchett J.W. Adverse reaction to metal debris: metallosis of the resurfaced hip. Curr Orthop Pract. 2012;23(1):50–58
2. Sochol KM, Charen DA, Andelman SM, Parsons BO. Cutaneous metallosis following reverse total shoulder arthroplasty. Journal of Shoulder and Elbow Surgery. 2018 July 2018;27(7):e230-3.

**Primary Author(s):**
Gillian Weston, UConn Health

**Co-Author(s):**
Janelle Ricketts, MD; Campbell Stewart, MD

## Kaposi Sarcoma misdiagnosed as Granuloma Annulare : a Case of Mistaken Identity

A 47-year-old HIV-positive male on HAART therapy for 12 years, with virologic and immunologic control, presented with a 5-year history of asymptomatic erythematous to purple, annular patches and plaques on the dorsal hands and feet. Initial evaluation yielded two skin biopsies interpreted as granuloma annulare (GA). Treatments included intralesional and topical corticosteroids, oral antibiotics and excimer laser with continued progression. On presentation, he had infiltrative brown to purple papules coalescing into plaques on the legs, thighs and torso, with associated lower extremity edema. Prior and additional lesional skin biopsies were consistent with patch and nodular stages of Kaposi's sarcoma (KS) respectively. The vascular neoplasms demonstrated diffuse positivity for human herpes virus 8 (HHV-8).

GA and KS are distinct clinical entities with different prognostic and treatment implications, however, the clinical and pathologic distinction is challenging particularly in patch stage KS and in the setting of HIV infection. An increased incidence of GA has been reported in HIV, and it commonly manifests in a generalized distribution. KS is one of the most common malignancies in patients with HIV although HAART therapy significantly reduces this risk. The microscopic features of patch stage KS and interstitial GA may be difficult to distinguish with both exhibiting increased numbers of spindled cells situated between collagen bundles in the reticular dermis. HHV-8 immunoreactivity is a sensitive and specific marker for KS. This case underscores the importance of maintaining a high suspicion for KS especially in progressive and treatment resistant skin lesions particularly in HIV infected individuals.

**References:**

1. Wada DA, Perkins SL, Tripp S, Coffin CM, Florell SR. Human herpesvirus 8 and iron staining are useful in differentiating Kaposi sarcoma from interstitial granuloma annulare Am J Clin Pathol. 2007 Feb;127(2):263-70.
2. Hoffmann C, Sabranski M, Esser S: HIV-Associated Kaposi's Sarcoma. Oncol Res Treat 2017;40:94-98.
3. Toro JR, Chu P, Yen TB, LeBoit PE. Granuloma Annulare and Human Immunodeficiency Virus Infection. Arch Dermatol. 1999;135(11):1341–1346
4. Dalla Pria A, Pinato DJ, Bracchi M, Bower M. Recent advances in HIV-associated Kaposi sarcoma. F1000Res. 2019;8:F1000 Faculty Rev-970. Published 2019 Jun 26. doi:10.12688/f1000research.17401.1

**Primary Author(s):**
Nessa Aghazadeh Mohandesi, MD, Mayo Clinic Dermatology

**Co-Author(s):**
Alina Bridges, DO, Mayo Clinic; Michael J Camilleri, MD, Mayo Clinic; Nneka I. Comfere, M.D, Mayo Clinic

## Severe nutritional deficiency clinically mimicking Stevens-Johnson syndrome

We describe the case of a 56-year-old woman transferred to our facility for management of putative Steven-Johnson syndrome (SJS). Her past medical history was remarkable for legal blindness, Roux-en-Y gastric bypass, remote history of SJS to Bactrim, and recent exposure to clindamycin and cephalosporin 10 days prior to admission for a burning desquamative rash. On admission, she was found to have large epithelial defects in both eyes, perioral hyperpigmentation with angular cheilitis but lacking oral mucosal defects, "flaky paint" appearing hyperpigmentation and erosions on antecubital fossae, hands, thighs, shins, and external vulva but not affecting the vaginal mucosa. Most remarkable were beefy red exudative ulcers on her plantar feet without surrounding dusky erythema or inflammation. Timing of skin changes was obfuscated by patient blindness, but she had burning skin pain for two weeks prior to admission. She subsequently required intubation for altered mental status, renal failure, and respiratory distress associated with hyperammonemia and cerebral edema. Skin biopsy revealed epidermal atrophy with confluent parakeratosis, slightly diminished granular layer,

focal clear cell changes in superficial epidermis and few basal vacuoles. The dermis showed scant inflammation and dilated capillaries. This pattern was most suggestive of a nutritional deficiency. Laboratory data revealed megaloblastic anemia with low total protein, albumin, zinc, vitamin C, copper, and several amino acids. Hyperammonemia and organ failure were attributable to L-carnitine deficiency. Her severe multi-nutritional deficiency was repleted with resolution of multi-organ failure over a 3-week period. This case highlights the vital role dermatology can play in inpatient diagnosis.

**Primary Author(s):**
Whitney Vinson, MD, Indiana University

**Co-Author(s):**
Rugvedita Parakh, Indiana University; Ahmed K. Alomari, Indiana University School of Medicine. Departments of Pathology and Dermatology; Lawrence A. Mark, Indiana University School of Medicine

## A fisherman and the sun: A novel application of dupilumab for chronic actinic dermatitis

A 29 year-old fisherman with allergic rhinitis and asthma presented for evaluation of an itchy, painful, scaly dermatitis occurring with minimal sun exposure. He had no previous sun sensitivity until three years prior when the dermatitis began after a single episode of burning hogweed (a psoralen-containing Apiaceae). He was on no medications. Physical examination revealed eczematous excoriated and focally lichenified plaques on the ears, face, upper and lower extremities, with sparing of perioral, upper eyelid, postauricular, and submental areas. An extensive workup included negative antinuclear antibody panel and serum porphyrins. Skin biopsy demonstrated epidermal spongiosis and acanthosis, with focal epidermal necrosis consistent with excoriation. Phototesting revealed reduced minimal erythema dose to UVA of 6 J/cm2 and to UVB of 40 mJ/cm2. In addition to careful UV protection, he trialed topical steroids, oral prednisone, hydroxychloroquine, and mycophenolate mofetil, which were either intolerable due to adverse effects or ineffective in controlling his condition. Dupilumab was started, which resulted in rapid improvement and improved subjective quality of life.

Chronic actinic dermatitis is a rare eczematous photodermatosis believed to represent a reaction to an endogenous photoinduced antigen, often developing after a particular photosensitizing exposure, but perpetuated long after exposure has ended. Dupilumab, by inhibiting IL-4 and IL-13, reduces the Th2-mediated inflammation that drives atopic and allergic disease, and was effective in treating this patient’s chronic actinic dermatitis. Dupilumab may be a useful addition to the armamentarium in treating this difficult condition. Additional larger studies and evaluating MED after dupilumab would be helpful additional studies.

**References:**

1. Hawk JL. Chronic actinic dermatitis. Photodermatol Photoimmunol Photomed 2004; 20:312-314.
2. Beck et al. Dupilumab Treatment in Adults with Moderate-to-Severe Atopic Dermatitis. NEJM 2014; 371:130-139.
3. Verma et al. A case report of therapeutically challenging chronic actinic dermatitis. JCMS Case Reports 2019; 7:1-3.
4. Smith et al. Dupilumab for the treatment of severe photodermatitis. JAAD Case Reports 2019; 5(7):614-616.

**Primary Author(s):**
S. Max Vale, MD, University of Washington

**Co-Author(s):**
Gregory Wolgamot, MD, Northwest Pathology; Andrea Kalus, MD, University of Washington School of Medicine

## Treatment-refractory cutaneous leishmaniasis in an 8-year-old migrant from central Afghanistan

An 8 year old, otherwise healthy boy who moved from Herat, Afghanistan, to Virginia four months previously presented to Children's National Medical Center with a plaque on his right cheek which had enlarged over the past year. In Afghanistan, he was diagnosed with cutaneous leishmaniasis (CL) and had no improvement after intralesional meglumine antimoniate

and intramuscular sodium stibogluconate.

On exam, he was afebrile and well-appearing. There was a 6x6 cm verrucous, dry keratotic, butterfly-shaped plaque with an erythematous rim and a similar papule inferiorly on his right cheek. He had no abdominal distension.

PCR and culture media were received from the CDC. Two punch biopsies were obtained. H&E stained slides revealed a superficial mixed inflammatory infiltrate with parasitized histiocytes. After PCR was positive for Leishmania tropica, he was started on miltefosine by the Infectious Disease department at the National Institutes of Health.

Afghanistan has the largest foci of CL in the world, where anthroponotic CL due to L. tropica is widespread. Poor housing and human displacement are key factors. Children are at increased risk of CL and frequently have more resistant disease. CL due to L. tropica commonly occurs on the face and is often recalcitrant to topical treatments. Facial scarring after healing can place significant psychosocial burden on affected children. Early diagnosis and treatment is vital to minimize disfigurement. Given international large-scale migrations in recent years, it is critical to maintain awareness of cutaneous manifestations of infectious diseases endemic to other global regions.

**References:**


1. Aksoy M, et al. Pediatric cutaneous leishmaniasis in an endemic region in Turkey: A retrospective analysis of 8786 cases during 1998-2014. PLoS Negl Trop Dis. 2016; 10:e0004835.
2. Aronson N, et al. Diagnosis and treatment of leishmaniasis: clinical practice guidelines by the infectious disease society of America (IDSA) and the American Society of Tropical Medicine and Hygiene (ASTMH). Clin Infect Dis. 2016 ;63:1539-57.
3. Fakhar M, et al. Distribution pattern of anthroponotic cutaneous leishmaniasis caused by Leishmania tropica in Western Afghanistan during 2013-2014. Acta Trop. 2017 Dec;176:22-28.
4. Handler MZ, et al. Cutaneous and mucocutaneous leishmaniasis: Differential diagnosis, diagnosis, histopathology, and management. J Am Acad Dermatol. 2015 Dec;73(6):911-26; 927-8.
5. Sharifi I, et al. A comprehensive review of cutaneous leishmaniasis in Kerman province, southeastern Iran. Iran J Public Health. 2015 Mar;44(3):299-307.
6. Solomon M, et al. Leishmania tropica in children: a retrospective study. J Am Acad Dermatol. 2014 Aug;71(2):271-7.



**Primary Author(s):**
Jennifer Gregory, Walter Reed National Military Medical Center

**Co-Author(s):**
Scott Norton, Children's National Medical Center, Washington, DC


## Contrast-Induced Generalized Fixed Drug Eruption Mimicking Recurrent Stevens-Johnson Syndrome

Dermatology was consulted for a 63-year-old male with recurrent Stevens-Johnson Syndrome (SJS). His history was also significant for end-stage renal disease on hemodialysis and coronary artery disease. The patient initially presented to the emergency department with odontalgia for which he received hydromorphine and subsequently developed pulseless electrical activity. He recovered with naloxone and CPR and underwent a significant cardiac workup, including a CT angiogram (CTA). Twenty-four hours following his CTA, he was reported to have mucosal erosions and a rash on his body concerning for his fourth case of SJS. The first occurrence was 12 years prior following a coronary artery bypass procedure. The subsequent two cases also followed major cardiac procedures involving iodinated contrast. On physical exam, the patient was found to have round, violaceous plaques, many with an erythematous border, on the face, buttocks, hands and feet, as well as erosions on the oral and genital mucosa. A biopsy from a representative lesion showed normal basket-weave stratum corneum, interface and perivascular dermatitis with pigment incontinence, and rare eosinophils. This, in conjunction with patient's history and physical exam, rendered a diagnosis of generalized fixed drug eruption (FDE). Thorough chart review identified iodinated contrast as the likely culprit. Our patient improved significantly with oral prednisone and hemodialysis. This is the first reported case of recurrent, generalized FDE secondary to iodinated contrast in the literature. Knowledge of this rare trigger of FDE can facilitate appropriate treatment, alleviate unnecessary patient anxiety, and reduce healthcare cost associated with a misdiagnosis of SJS.

**References:**
1. Tasker F, Fleming H, McNeill G, Creamer D, Walsh S. Contrast media and cutaneous reactions. Part 2: Delayed hypersensitivity reactions to iodinated contrast media. Clin Exp Dermatol. 2019.

**Primary Author(s):**
Tyler J. Willenbrink, MD, The University of Texas at Austin

**Co-Author(s):**
Brett H. Keeling, Dell Medical School at the University of Texas at Austin, Clinical Pathology Associates

## A Rapidly Growing Chest Wall Mass in a Middle-Aged Gentleman

A 62-year-old gentleman with a past medical history of untreated hepatitis C and chronic obstructive pulmonary disease presented to the emergency department with a 3-month history of a rapidly growing, painful left chest wall mass. He denied fevers, chills, sweats, nausea, and vomiting, but he did endorse loss of appetite and recent 20-pound weight loss. Physical exam was notable for multiple large, tender, red, lobulated tumors on the anterior left chest wall wrapping to the posterior aspect. Complete blood count was within normal limits. A four millimeter punch biopsy revealed dense dermal atypical lymphoid infiltrate composed of large, atypical lymphoid cells with open vesicular nuclear chromatin, inconspicuous nucleoli, and abundant clear to eosinophilic cytoplasm. Immunohistochemistry studies were positive for CD45, CD20, CD10, BCL-6, C-MYC and CD30 (subset) and negative for CD5, BCL-2, MUM-1 and ALK, consistent with diffuse large B cell lymphoma (DLBCL), germinal center immunophenotype.[1]

Initial staging with PET CT and bone marrow biopsy showed no evidence of marrow involvement but did reveal bulky hypermetabolic lymphadenopathy throughout the left chest, axillary region, and anterosuperior mediastinum, as well as involved periportal lymph nodes, consistent with Ann Arbor Stage IV DLBCL and revised international prognostic index score of 3 suggesting a 53% four-year progression free survival rate.[2]

He received four cycles of rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone chemotherapy with excellent tumor burden response, however, his course was complicated by acute gout, pancytopenia, persistent neutropenia, multiple episodes of herpes zoster, as well as prolonged hospitalizations for multifocal pneumonia, cellulitis, and colitis.

**References:**
1. Hans, C. (2004). Confirmation of the molecular classification of diffuse large B-cell lymphoma by immunohistochemistry using a tissue microarray. Blood, 103(1), pp.275-282.
2. Sehn, L. H., Berry, B., Chhanabhai, M., Fitzgerald, C., Gill, K., Hoskins, P., Klasa, R., Savage, K. J., Shenkier, T., Sutherland, J., Gascoyne, R. D., & Connors, J. M. (2007). The revised International Prognostic Index (R-IPI) is a better predictor of outcome than the standard IPI for patients with diffuse large B-cell lymphoma treated with R-CHOP. Blood, 109(5), 1857-1861

**Primary Author(s):**
Miranda Rosenberg, MD, Frost Department of Dermatology, University of Miami

**Co-Author(s):**
Julio Poveda, University of Miami/Jackson Health System

## Neutrophilic dermatosis induced by FLT3 inhibitor midostaurin in the treatment of AML

Neutrophilic dermatoses (ND) such as Sweet Syndrome in the setting of acute myeloid leukemia (AML) can be malignancy-related or drug-related. FMS-like tyrosine kinase 3 (FLT3), which regulates the differentiation of myeloid progenitors, is mutated in nearly 1/3 of AML. An internal tandem duplication (ITD) mutation, which causes higher relapse rates, is present in 70% of FLT3-AML patients; the remainder have a mutation in tyrosine kinase domain (TKD). The prognostic significance of FLT3-TKD mutations in AML is likely similar to wild-type FLT3 and better than FLT3-ITD

mutations.

FLT3 inhibition in FLT3-mutated AML may cause terminal differentiation syndrome of FLT3-mutated myeloid blasts to neutrophils, and may relate similarly to ND from all-trans-retinoic acid for the treatment of acute promyelocytic leukemia. Prior literature of FLT3-inhibitor ND have been reported in FLT3-ITD mutations. To our knowledge, a ND secondary to FLT3 inhibition with a FLT3-TKD mutation has not been reported.

A 50-year-old woman with FLT3-TKD AML was started on standard 7+3 induction. Midostaurin, a FLT3 inhibitor approved in 2017 for newly-diagnosed AML, was then initiated for 14 days. Three days prior to completing midostaurin, she developed fevers with pink, mildly painful, edematous-appearing papules and plaques. The rash continued to generalize in distribution and turned a dusky red. A biopsy performed on her last day of midostaurin revealed prominent perivascular neutrophilic infiltration with few 'monocytoid' appearing cells, which was consistent with a ND. When her biopsy result returned 2 days later, the patient's fevers had stopped and her rash was resolving.

**References:**


1. Fathi AT, Le L, Hasserjian RP, Sadrzadeh H, Levis M, Chen Y-B. FLT3 inhibitor-induced neutrophilic dermatosis. Blood. 2013 Jul 11;122(2):239–42.
2. Kaur A, Jacobs MS, Raza S. Characteristics of Sweet's syndrome associated with novel acute myeloid leukemia targeted drugs—Midostaurin and Enasidenib. Advances In Cell and Gene Therapy. 2019 Apr 29;0(0):e61.
3. Nelson CA, Noe MH, McMahon CM, Gowda A, Wu B, Ashchyan HJ, et al. Sweet syndrome in patients with and without malignancy: A retrospective analysis of 83 patients from a tertiary academic referral center. J Am Acad Dermatol. 2018;78(2):303–309.e4.
4. Sakaguchi M, Yamaguchi H, Kuboyama M, Najima Y, Usuki K, Ueki T, et al. Significance of FLT3-tyrosine kinase domain mutation as a prognostic factor for acute myeloid leukemia. Int J Hematol. 2019 Aug 20;
5. Varadarajan N, Boni A, Elder DE, Bagg A, Micheletti R, Perl AE, et al. FLT3 Inhibitor-Associated Neutrophilic Dermatoses. JAMA Dermatol. 2016 Apr;152(4):480–2.



**Primary Author(s):**
Yun Tong, MD, University of California San Diego

**Co-Author(s):**
Charisse Orme, MD, PhD, Department of Dermatology, University of California, San Diego


## Cutaneous T-cell lymphoma transformation into cutaneous gamma-delta T-cell lymphoma with associated metastatic disease

We present a rare case of a 57-year-old African American man with a longstanding history of patch stage cutaneous T-cell lymphoma that underwent transformation into cutaneous gamma-delta T-cell lymphoma with associated metastatic disease.

He was diagnosed eleven years prior via skin biopsy and was initially managed on topical class I corticosteroids and narrowband UVB phototherapy. However, he discontinued phototherapy early on due to side effects of a burning sensation at treated sites. His subsequent treatment course involved intermittent monotherapy with topicals. Around eleven years after initial diagnosis, he was noted to have developed a hard two-centimeter nodule on his right buttock. The nodule developed an expanding ulceration within a several-month timespan, and the patient experienced associated weight loss, fevers, and night sweats.

A punch biopsy revealed atypical lymphocytes positive for CD3 and CD7 and negative for CD4, CD5, and CD8. There was a positive stain pattern for TIA-1 of the deeper dermal lymphocytes and some epidermal lymphocytes. These findings were consistent with a gamma-delta phenotype.

PET/CT imaging of the chest, abdomen, and pelvis revealed an increase in mediastinal and hilar adenopathy and innumerable ground-glass nodules. A lung wedge biopsy showed findings that were histologically and immunophenotypically similar to that observed in his cutaneous biopsy, which confirmed metastatic disease of gamma-delta origin.

Clinical and pathological correlation supported a diagnosis of mycosis fungoides transformation into cutaneous gamma-delta T-cell lymphoma. This is a very unusual and highly aggressive variant of disease progression that can clinically present with deep dermal or subcutaneous ulceronecrotic plaques or nodules.[1,2,3] Our case demonstrates involvement of systemic lymph nodes, which is also unusual for gamma-delta phenotypes.[2,3] Appropriate immunohistochemical staining selections for biopsy samples, imaging, and clinical findings lead to diagnosis confirmation.

**References:**


1. Prillinger KE, Trautinger F, Kitzwögerer M, et alTwo faces of gamma–delta mycosis fungoides: before and after renal transplantationCase Reports 2017;2017:bcr2016216990.
2. Fujii K. New Therapies and Immunological Findings in Cutaneous T-Cell Lymphoma. Front. Oncol., 04 June 2018.
3. Rubio-Gonzalez B et al. Clinical manifestations and pathogenesis of cutaneous lymphomas: current status and future directions. British Journal of Haematology. 26 October 2016.



**Primary Author(s):**

Jehan Shah, MS, Chicago Medical School at Rosalind Franklin University of Medicine and Science

**Co-Author(s):**

Sophia Akhiyat, MD, Medical College of Wisconsin Affiliated Hospitals; Keri Chaney, MD, FAAD, Medical College of Wisconsin


## Microscopic Polyangiitis with Iododerma Masquerading as Cryptococcosis

A 67-year-old, African-American female with a history of hypertension, coronary artery disease, atrial fibrillation, congestive heart failure, and type II diabetes presented to the emergency department with eye pain, photophobia, and progressive facial rash for the past 48 hours. Review of systems was positive for 40 lbs of unintentional weight loss in the last 3 months. The patient's PCP had recently obtained a chest CT, which demonstrated a new sub-centimeter lung nodule.

On exam, there were multiple umbilicated papules and nodules on the face. Punch biopsy was performed. Preliminary histopathology was suggestive of cryptococcosis with a neutrophilic dermal infiltrate and multiple acellular bodies surrounded by capsule-like vacuolated spaces, which resembled the yeast forms of Cryptococcus neoformans. Subsequent stains including GMS, PAS, Hucker-Twort, Fite, and spirochete immunostains were negative for microorganisms. The presumed fungal forms were degenerated human cells, rather than evidence of cryptococcosis. A subsequent work-up with HIV and Cryptococcus serum antigens was negative. The patient had no risk factors or additional evidence of infection.

Labs were notable for elevated ESR and CRP with positive RF, ANA, MPO, and pANCA serologies. Patient also had evidence of nephritic-range protienuria. An EMG demonstrated mononeuritis multiplex and a sural nerve biopsy showed lymphocytic microvasculitis.

Taken together, the patient was diagnosed with iododerma in the setting of severe microscopic polyangiitis. She was treated with stress dose steroids and rituximab with improvement prior to discharge. Given history of hydralazine use, drug-induced ANCA vasculitis was suspected. Patient continues to follow-up with rheumatology with quiescent disease.

**References:**


1. Chang MW, Miner JE, Moiin A, Hashimoto K. Iododerma after computed tomographic scan with intravenous radiopaque contrast media. J Am Acad Dermatol. 1997Jun;36(6 Pt 1):1014-6. PubMed PMID: 9204072.
2. Ko JS, Fernandez AP, Anderson KA, Burdick LM, Billings SD, Procop GW, McMahon JT, Bergfeld WF, Piliang MP. Morphologic mimickers of Cryptococcus occurring within inflammatory infiltrates in the setting of neutrophilic dermatitis: a series of three cases highlighting clinical dilemmas associated with a novel histopathologic pitfall. J Cutan Pathol. 2013 Jan;40(1):38-45. doi: 10.1111/cup.12019. PubMed PMID: 23278725.



**Primary Author(s):**

A. Nichole Sullivan, MD, The University of Michigan Department of Dermatology

**Co-Author(s):**
May Chan, MD, University of Michigan

## Unusual variant of Rosai-Dorfman

An 80 year old man presented with scattered firm violaceous papules and nodules on the right hip and flank of 5 year duration. He complained of brief tenderness upon palpation of the lesions. Histopathology revealed a pan-dermal sheet-like proliferation of spindle cells and a diffuse mixed infiltrate that included plasma cells, histiocytes, lymphocytes, and neutrophils with sclerotic areas. Notably, there were numerous S100+, CD1a- histiocytes with clusters of IgG4+ plasma cells ranging from >10 to >100/high power field (total IgG4+ fraction <40%). SMA, Factor 13a, desmin, PAS, AFB, Fite, spirochete, and Giemsa stains were negative. Tissue culture for bacteria, mycobacteria and fungi was negative. The combined clinical and histopathologic findings were most consistent with Rosai-Dorfman with features of IgG4 related disease.

Rosai-Dorfman (RD) is a rare non-Langerhans cell histiocytosis that is generally self-limiting but can affect almost any organ. The exact cause is unknown, however, there have been reports of lesional mutations in NRAS, KRAS, MAP2K1, and ARAF along with possible associations including lymphomas, systemic lupus, and IgG4 related diseases. The sclerosis seen on histopathology in this case raised the question of associated IgG4 disease. Some proposed diagnostic criteria include: >10 IgG4+ plasma cells/high power field, IgG4+ plasma cell ratio > 40%, or a combination of serum IgG4 < 135 mg/dL with more than 40% IgG4+ and >10 IgG4+ plasma cells/high power field. More research needs to be done to further elucidate this unusual variant of Rosai-Dorfman to determine more definitive diagnostic criteria and treatment options.

**References:**

1. Zhang X, Hyjek E, Vardiman J. A Subset of Rosai-Dorfman Disease Exhibits Features of IgG4-Related Disease. Am J of Clin Pathol. 2013;139(5):622-632. doi:10.1309/AJCPARC3YQ0KLIOA
2. Abla O, Jacobsen E, Picarsic J, et al. Consensus recommendations for the diagnosis and clinical management of Rosai-Dorfman-Destombes disease. Blood. 2018;131(26):2877-2890. doi:10.1182/blood-2018-03-839753
3. Frater JL, Maddox JS, Obadiah JM, Hurley MY. Cutaneous Rosai-Dorfman Disease: Comprehensive Review of Cases Reported in the Medical Literature since 1990 and Presentation of an Illustrative Case. J Cutan Med Surg. 2006;10(6):281-290. doi:10.2310/7750.2006.00067
4. Kuo T, Chen T-C, Lee L-Y, Lu P-H. IgG4-positive plasma cells in cutaneous Rosai-Dorfman disease: an additional immunohistochemical feature and possible relationship to IgG4-related sclerosing disease. J of Cutan Pathol. 2009;36(10):1069-1073. doi:10.1111/j.1600-0560.2008.01222.x
5. Kutlubay Z, Bairamov O, Sevim A, Demirkesen C, Mat MC. Rosai–Dorfman Disease: A Case Report With Nodal and Cutaneous Involvement and Review of the Literature. Am J of Dermatopathol. 2014;36(4):353-357. doi:10.1097/DAD.0b013e31829e5564
6. Thawerani H, Sanchez RL, Rosai J, Dorfman RF. The cutaneous manifestations of sinus histiocytosis with massive lymphadenopathy. Arch Dermatol. 1978;114(2):191-197.

**Primary Author(s):**
Gloria Lin, MD, MS, University of Connecticut

**Co-Author(s):**
Campbell Stewart, MD; Katalin Ferenczi, MD; Jacqueline Junkins-Hopkins, MD, Geisinger Medical Center

## Cutaneous Rosai-Dorfman disease

A 29-year-old man with history of ulcerative colitis diagnosed one-year prior on prednisone 40mg and adalimumab presented to clinic with a six-month history of a nodule on his right dorsal forearm. The nodule appeared around the time he was started on adalimumab, was tender to the touch and occasionally pruritic. On physical exam there was a solitary pink-red dome shaped 1cm nodule with central erosion. An excisional biopsy was performed which showed a well-circumscribed dense dermal infiltrate of histiocytes and mixed inflammatory cells; histiocytes exhibited emperipolesis and stained positively for S100, CD68 and CD163 and negatively for CD1a. No lymphadenopathy was appreciated on exam

and there was no evidence of systemic disease on CT imaging. Based on clinical presentation, histopathology and imaging studies, he was diagnosed with single-site, cutaneous Rosai-Dorfman disease (C-RDD). Rosai-Dorfman disease is a benign disorder of histiocyte proliferation of unknown etiology. In about 10% of cases it presents in association with immunologic disease although it is not known to be reported in association with ulcerative colitis. The systemic form of the disease generally affects children and young adults and presents with painless, massive cervical lymphadenopathy and systemic symptoms with or without other organ involvement. Purely C-RDD is rare and has a wide range of clinical manifestations and presents more commonly in middle-aged women. Treatment of C-RDD can include excision or observation as 20-50% with nodal and/or cutaneous disease have spontaneous resolution.

**References:**


1. Kutlubay Z, Bairamov O, Sevim A, et al. Rosai-Dorfman disease: a case report with nodal and cutaneous involvement and review of the literature. Am J Dermatopathol. 2014;36(4):353-357.
2. Abla O, Jacobsen E, Picarsic J, et al. Consensus recommendations for the diagnosis and clinical management of Rosai-Dorfman-Destombes disease. Blood. 2018;131(26):2877-2890.
3. Brenn T, Calonje E, Granter SR, et al. Cutaneous Rosai-Dorfman disease is a distinct clinical entity. Am J Dermatopathol. 2002;24:385–91.


**Primary Author(s):**


Jessika Davis, MD, Cook County Health and Hospital System


**Co-Author(s):**


Shilpa Mehta, John Stroger Hospital; Evan Stokar


## A 45 year old woman with a growing painful subungual tumor

A 45 year old woman presented to the emergency department for evaluation of a lesion under her left thumbnail. This lesion had been slowly growing for many months but had lately become intolerably painful.

On exam, the L1 finger had a firm, markedly tender, 6mm crusted pink subungual papule at the junction of the nail bed and hyponychium. X-ray of the digit revealed a radiolucent area of the distal phalanx underlying the tumor. MRI did not reveal frank osteomyelitis but was unable to further characterize the tumor.

Biopsy of the lesion revealed an endophytic lesion comprised of eosinophilic, enlarged, dyskeratotic keratinocytes, consistent with a diagnosis of a subungual keratoacanthoma. This is histologically indistinguishable from the subungual tumors of incontinentia pigmenti, but the patient had no other findings to suggest this as an alternative diagnosis.

The tumor was treated with Mohs surgery and cleared after 2 stages with the defect extending to the periosteum but not into bone. The defect was repaired with a full thickness skin graft. At 1 month follow up, the graft was fully healed with preservation of the digit and nail plate. The patient's pain had completely resolved with full restoration of function.

A key hallmark of subungual keratoacanthomas is local bone resorption without malignant bone invasion, possibly due to the pressure exerted by the growing tumor. It is essential to distinguish subungual keratoacanthoma from bone-invasive squamous cell carcinoma, as its treatment is substantially less morbid. Imaging findings can be helpful in guiding evaluation, but the diagnosis must be definitively rendered by combination of clinical and histopathologic findings.

**References:**


1. Baran R, Goettmann S. Distal digital keratoacanthoma: a report of 12 cases and a review of the literature. Br J Dermatol. 1998;139(3):512-5.
2. Choi JH, Shin DH, Shin DS, Cho KH. Subungual keratoacanthoma: ultrasound and magnetic resonance imaging findings. Skeletal Radiol. 2007;36(8):769-72.
3. Gonzalez-Rodriguez AJ, Gutierrez-Paredes EM, Montesinos-Villaescusa E, Burgues Gasion O, Jorda-Cuevas E. [Subungual keratoacanthoma: the importance of distinguishing it from subungual squamous cell carcinoma]. Actas Dermosifiliogr. 2012;103(6):549-51.


**Primary Author(s):**

Ian W. Tattersall, MD, PhD, Yale University Medical Center

**Co-Author(s):**
Gauri Panse, MBBS, Yale School of Medicine; Amanda E. Zubek, MD, PhD, Yale School of Medicine Department of Dermatology; Sean R. Christensen, MD, PhD, Yale University School of Medicine

## A Diagnosis of Pediatric Spitz Melanoma That Defied Consensus Among Experts

A 9-year-old girl presented with a growing rough papule of the left lower leg. Initially presumed to be a wart, the lesion failed to improve with three months of salicylic acid and cryotherapy, before biopsy of the 8 mm papule was pursued. Histopathology demonstrated a severely atypical compound spitzoid melanocytic proliferation with ulceration which was transected containing >30 mitoses/mm2, a Breslow depth of at least 3.8 mm (Clark's level IV), adnexal extension and deep margin involvement. Immunohistochemical staining showed retained p16 and BAP1, and FISH testing showed clonal copy number gains in 6p25 in greater than 50% of enumerated cells.

Pathology was reviewed by five major institutions, including two international experts on Spitz melanoma. Of the five reports, three classified the lesion as Spitz melanoma and two as indeterminate, with one of the latter two reports formally recommending lymph node biopsy. The patient underwent wide local excision and sentinel lymph node biopsy of which both lymph nodes sampled were positive. A subsequent PET-CT initially indicated increased uptake in a suspicious left external iliac lymph node, but needle biopsy was negative, and follow-up imaging at one year indicated uptake returned to physiologic levels.

The diagnostic delineation within the spectrum of Spitz melanoma, atypical Spitz tumor, and Spitz nevus is often challenging, and can introduce disagreement even amongst experts. Ancillary testing can be helpful in cases of discrepant reports, and further research is needed to better inform the utilization of such testing in patients with disputed diagnoses.

**References:**

1. Bartenstein DW, Fisher JM, Stamoulis C, Weldon C, Huang JT, Gellis SE, Liang MG, Schmidt B, Hawryluk EB. Clinical features and outcomes of spitzoid proliferations in children and adolescents. Br J Dermatol. 2018 Nov 22. PubMed PMID: 30467833.
2. Massi D, Tomasini C, Senetta R, Paglierani M, Salvianti F, Errico ME, Donofrio V, Collini P, Tragni G, Sementa AR, Rongioletti F. Atypical Spitz tumors in patients younger than 18 years. J Am Acad Dermatol. 2015;72(1):37-46. PubMed PMID: 25446807.
3. Luo S, Sepehr A, Tsao H. Spitz nevi and other Spitzoid lesions part II. Natural history and management. J Am Acad Dermatol. 2011 Dec;65(6):1087-92. PubMed PMID: 22082839.

**Primary Author(s):**
Danna Moustafa, BS, Harvard Medical School; Massachusetts General Hospital

**Co-Author(s):**
Kristine Cornejo, MD, Massachusetts General Hospital; Elena B. Hawryluk, MD, PhD, Massachusetts General Hospital, Harvard Medical School

## Carcinoma Erysipeloides from Adenocarcinoma of the Esophagus

A 55-year-old male with history of metastatic adenocarcinoma of the esophagus status post chemotherapy was admitted for lower extremity weakness and rash. The patient relayed a one-month history of a localized plaque on the right upper chest which subsequently expanded. The patient was hospitalized two weeks prior, at which time the erythema was thought to be due to cellulitis. As a result, the patient's port was removed from the right upper chest, and he was given clindamycin. The patient reported itching of the skin, but no pain. There was no preceding history of radiation or trauma of the right shoulder or chest.

Physical examination revealed a blanching erythematous to violaceous indurated plaque on the right upper chest, right shoulder, and right flank extending to the right thigh. A red, firm, smooth nodule was noted on the right upper chest. Two

4mm punch biopsies were performed on the right chest and right shoulder, which showed sheets of atypical epithelioid cells with overt nuclear atypia and high-grade features as well as focal ductal differentiation. The diagnosis was consistent with carcinoma erysipeloides.

Carcinoma erysipeloides is a rare presentation of cutaneous metastasis most frequently associated with breast cancer, but also uncommonly seen in other cancers.[1] The pathogenesis is thought to be due to neoplastic cells obstructing the superficial and deep dermal lymphatics, leading to this inflammatory morphology.[1] To date, only one other case of carcinoma erysipeloides due to esophageal carcinoma has been reported,[2] demonstrating this unusual and likely under-recognized manifestation of metastasis.

**References:**


1. Heath MS, Slaught C, Ortega-Loayza AG, Mengden S. Carcinoma Erysipeloides From Metastatic Cutaneous Squamous Cell Carcinoma Initially Mistaken for Intralymphatic Histiocytosis. Am J Dermatopathol. 2019 Jul;41(7):522-525. doi:10.1097/DAD.0000000000001369.
2. Tabrizi MA, Mckeown J, Siew K. Management of persistent pruritus in carcinoma erysipeloides associated with oesophageal cancer. Intern Med J. 2017 Jul;47(7):829-831. doi: 10.1111/imj.13476.



**Primary Author(s):**
Kimberly Chun, MD, University of California, San Diego

**Co-Author(s):**
Jeremy Schneider, MD, University of California San Diego, Department of Dermatology


## Puzzling Pathergy: A Case of Unilateral Subcorneal Pustular Dermatosis

A 61 year old male with a history of well controlled subcorneal pustular dermatosis (SPD) on dapsone was hostpitalized for a left trimalleolar ankle fracture and underwent external fixation. Several days after admission, he developed numerous flaccid, fragile 2mm to 8mm pustules on the left lower extremity where his injury was, with only 4 to 5 pustules noted on the right lower extremity and a few grouped on the left abdomen and right flank. Of note, the patient had discontinued his dapsone one week prior to admission. SPD is a rare neutrophilic disease characterized by sterile superficial pus filled vesicles and bullae most often on the trunk and extremities. Interestingly, his recurrence was predominantly in the area of his injury, suggesting pathergy as one would expect with other neutrophilic dermatoses. There has only been one other case of pathergy associated with SPD reported in the literature, specifically a patient with Crohn's disease who developed pustules around an unhealed incisional wound. Though the pathogenesis of SPD is not fully understood, if in fact SPD can be induced by pathergy, it gives insight into the which inflammatory mediators may be responsible, particularly neutrophil related cytokines such as interleukin (IL) 1, IL 6 and tumor necrosis factor-a, and highlights the potential for systemic associations given our understanding of other pathergy associated conditions.

**References:**


1. Bonifati C, Trento E, Fei PC, Muscardin L, Amantea A, Carducci M. Early but not lasting improvement of recalcitrant subcorneal pustular dermatosis (Sneddon-Wilkinson disease) after infliximab therapy: relationships with variations in cytokine levels in suction blister fluids. Clinical and Experimental Dermatology. 2005;30(6):662-665. doi:10.1111/j.1365-2230.2005.01902.x.
2. García-Salces I, Baldellou R, Hörndler C, Zubiri M. Subcorneal pustular dermatosis with pathergy phenomenon in a patient with Crohns disease. Journal of the European Academy of Dermatology and Venereology. 2009;23(3):349-350. doi:10.1111/j.1468-3083.2008.02866.x
3. Mountziaris PM, Mikos AG. Modulation of the Inflammatory Response for Enhanced Bone Tissue Regeneration. Tissue Engineering Part B: Reviews. 2008:110306231744007. doi:10.1089/teb.2008.0038.



**Primary Author(s):**
Angela Hou, MD, George Washington University

**Co-Author(s):**
Adam Friedman, MD, GW School of Medicine and Health Sciences

# Successful treatment of recalcitrant plaques and tumors in Cutaneous T Cell Lymphoma with combination intralesional 5-fluorouracil and topical imiquimod: a series of 8 patients

Cutaneous T-cell lymphoma (CTCL) is generally regarded as an indolent form of cancer with treatments targeting management of symptoms and slowing progression rather than cure. While the majority of patients never develop extracutaneous disease, progression beyond the skin within 20 years of diagnosis can be up to 40%, depending on stage.[6] Cutaneous lesions manifest as patches, plaques and tumors and the morphology and distribution of lesions largely drives treatment selection. Many patients experience a partial response to therapy and present with low density recalcitrant plaques and tumors.

Regarding the use of topical 5% imiquimod for recalcitrant plaques, there are several case series, ranging from one to six patients, demonstrating complete response rates ranging from 50-100% depending on study.[1-5,7-11] Despite the well documented efficacy of intralesional 5-fluorouracil in nonmelanoma skin cancer, there are no reports of intralesional 5-fluorouracil as a treatment for CTCL.

We present a case series of 8 patients with CTCL with recalcitrant thick plaques and tumors treated with combination intralesional 5-fluorouracil and topical imiquimod. A broad range of disease stages and phenotypes, including post-stem cell transplant recurrence and large cell transformed lesions were represented. Patients received between 1-5 injections 2 weeks apart of 5-fluorouracil with concomitant topical 5% imiquimod daily for a duration of 2 weeks to 3 months. Seven patients have achieved a complete response in index lesions, and one has had a good partial response after initial treatment with follow-up pending. This novel combination treatment is relatively inexpensive, well tolerated, and effective, warranting additional investigation.

**References:**


1. Chiam, L., & Chan, Y. (2007). Solitary plaque mycosis fungoides on the penis responding to topical imiquimod therapy. British Journal of Dermatology, 156, 560-562.
2. Coors, E. A., Schuler, G., & Von Den Driesch, P. (2006). Topical imiquimod as treatment for different kinds of cutaneous lymphoma. European Journal of Dermatology, 16(4), 391-393.
3. Deeths, M. J., Chapman, J. T., Dellavalle, R. P., Zeng, C., & Aeling, J. I. (2005, Feb). Treatment of patch and plaque stage mycosis fungoides with imiquimod 5% cream. Journal of the American Academy of Dermatology, 52, 275-280.
4. Didona, B., Benucci, R., Amerio, P., Canzona, F., Rienzo, O., & Cavalieri, R. (2004). Primary cutaneous CD30+ T-cell lymphoma responsive to topical imiquimod (Aldara). British Journal of Dermatology, 150, 1198-1201.
5. Dummer, R., Urosevic, M., Kempf, W., Kazakov, D., & Burg, G. (2003). Imiquimod Induces Complete Clearance of a PUVA-Resistant Plaque in Mycosis fungoides. Dermatology, 207, 116-118.
6. Foss, F. (2003). Overview of cutaneous T-cell lymphoma: prognostic factors and novel therapeutic approaches. Leukemia & Lymphoma, 44, S55-61.
7. Gordon, M. C., Sluzevich, J. C., & Jambursaria-Pahlajani, A. (2015). Clearance of folliculotropic and tumor mycosis fungoides with topical 5% imiquimod. Journal of the American Academy of Dermatology, 348-350.
8. Lewis, D. J., Byekova, Y. A., Emge, D. A., & Duvic, M. (2017). Complete resolution of mycosis fungoides tumores with imiquimod 5% cream: a case series. Journal of Dermatological Treatment, 28, 567-569.
9. Martinez-Gonzalez, M. C., Verea-Hernando, M. M., Yebra-Pimentel, M. T., Del Pozo, J., Mazaira, M., & Fonseca, E. (2008). Imiquimod in mycosis fungoides. European Journal of Dermatology, 18(2), 148-152.
10. Soler-Machin, J., Gilaberte-Calzada, Y., Vera-Alverez, J., Coscojuela-Santaliestra, C., Martinez-Morales, J., & Osan-Tello, M. (2006). Imiquimod in Treatment of Palpebral Mycosis Fungoides. Archivos de la Sociedad Espanola de OFtalmologia, 81, 221-224.
11. Sunchin, K. R., Junkins-Hopkins, J. M., & Rook, A. H. (2002, Sept). Treatment of Stage IA Cutaneous T-Cell Lymphoma With Topical Application of the Immune Response Modifier Imiquimod. Archives of Dermatology, 138, 1137-1139.


**Primary Author(s):**


Ashley DiLorenzo, MD, Medstar Washington Hospital Center

**Co-Author(s):**
Lorena Dollani, MD; Jennifer DeSimone

## A case of epithelioid angiosarcoma, a rare and unique morphologic variant of angiosarcoma

Angiosarcoma is an aggressive vascular malignancy typically described on the head and neck of elderly patients, after radiotherapy, and in association with lymphedema. Epithelioid angiosarcoma (EAS) is a distinct subtype of angiosarcoma that occurs in deep soft tissues, but can occur as visceral or primary cutaneous lesions. Although limited, reports suggest that primary cutaneous angiosarcoma arising outside conventional settings tends to be epithelioid and may portend poor prognosis. A 43-year-old man without a history of prior radiation or lymphedema presented with a painful enlarging mass on the forearm. On exam, there was a 4 cm ulcerated nodule overlying the antecubital fossa. CT scan showed a hypodense mass in the superficial soft tissues, not arising from muscle. On histopathology, there were sheets of atypical epithelioid cells filling the dermis and extending to the subcutis. Lesional cells stained with CD31 and CAM5.2. Ki67 staining was present in about 40% of the cells. The immunoprofile confirmed the diagnosis of EAS. He underwent surgical resection, taxane chemotherapy and radiation, and has remained disease-free after 10 months. EAS is characterized by sheets of epithelioid endothelial cells with abundant eosinophilic cytoplasms. Cells stain with vascular markers, with CD31 most sensitive. EAS can mimic other epithelioid neoplasms that occur more commonly in the skin, such as melanoma, necessitating complete immunohistochemical profiling. Although several series suggest that EAS has 3-year mortality rates exceeding 55%, the rarity of reports limits definitive prognostication. Knowledge of the clinicopathologic and immunohistochemical features of this rare cutaneous tumor can help avoid diagnostic pitfalls.

**References:**

1. Suchak et al. Primary cutaneous epithelioid angiosarcoma: a clinicopathologic study of 13 cases of a rare neoplasm occurring outside the setting of conventional angiosarcomas and with predilection for the limbs. Am J Surg Pathol. 2011 Jan; 35(1):60-9.
2. Hart J, Mandavilli S. Epithelioid Angiosarcoma: A Brief Diagnostic Review and Differential Diagnosis. Arch Pathol Lab Med. 2011 Feb; 135(2):268-72.
3. Meis-Kindblom JM, Kindblom LG. Angiosarcoma of soft tissue: a study of 80 cases. Am J Surg Pathol. 1998; 22(6):679-83
4. Fletcher CDM. Diagnostic Histopathology of Tumors. Philadelphia, PA: Elsevier Limited. 2007; 1(3):66–7.
5. Fata F, O'Reilly E, Ilson D. et al. Paclitaxel in the treatment of patients with angiosarcoma of the scalp and face. Cancer. 1999; 86(10):2034–37.

**Primary Author(s):**
Christine N. Schafer, MD, Washington University School of Medicine in St. Louis

**Co-Author(s):**
Yevgeniy Semenov, M.D, Massachusetts General Hospital/Harvard Medical School; Ilana S. Rosman, M.D., Washington University School of Medicine

## A refractory hand cellulitis in an immunocompromised woman

A 72-year-old Caucasian woman with rheumatoid arthritis on chronic immunosuppression with tofacitinib and prednisone was admitted to the hospital for right hand swelling. The swelling and pain began 8 weeks ago, and had been progressively worsening. Prior to hospitalization, she was treated with a 10-day course of cephalexin for suspected cellulitis, which did not improve the swelling. Several pustules developed over the dorsum of the hand, which revealed no bacterial growth after culture. Upon admission, she was started on vancomycin without any improvement. On examination, the right dorsal hand had a well-defined erythematous plaque extending from dorsal wrist to the PIP joints. Several pustules were noted. The chronicity of the symptoms, as well as the refractory nature despite antibacterial treatment raised the concern for atypical or opportunistic infection. 4mm punch biopsies of the hand were performed, which initially revealed dermal inflammation and fibroplasia with no visible microorganisms. Her antibiotic regimen was switched to linezolid while awaiting bacterial tissue cultures, which revealed no growth. She was initially discharged on no antimicrobial therapy; however, fungal tissue culture later revealed Mycobacterium chelonae, and patient was readmitted for targeted treatment.

The patient was started on oral azithromycin, oral linezolid, and IV tigecycline. The patient's hand swelling and erythema began to improve, and she was ultimately discharged on a two-month course of this regimen. We present this case to urge Dermatologists to consider atypical Mycobacteria infections when forming their differential diagnoses, especially in the setting of refractory, chronic skin and soft tissue infections in the immunocompromised patient population.[1,2,3] Early tissue culture to confirm the diagnosis is key in initiation of appropriate antimicrobials.

**References:**

1. Diaz F, Urkijo JC, Mendoza F, et al. Mycobacterium chelonae infection associated with adalimumab therapy. Scand J Rheumatol. 2008; 37(2):159-60.
2. Henkle E, Winthrop KL. Nontuberculous mycobacteria infections in immunosuppressed hosts. Clinic Chest Med. 2015 Mar; 36(1):91-9.
3. Uslu U, Böhm O, Heppt F, et al. Skin and SOft Tissue Infections Caused by Mycobacterium chelonae: More Common Than Expected?. Acta Derm Venereol. 2019 May 29.

**Primary Author(s):**

Lisa Ishii, MD, Vanderbilt University Medical Center/Department of Dermatology

**Co-Author(s):**

Rachel P. Barker, MD, Vanderbilt University Medical Center; Alan S. Boyd, MD; Anna K. Dewan, MD, Vanderbilt University Medical Center; Jami L. Miller, MD

## Eosinophilic fasciitis in an auto repair mechanic with prior exposure to organic solvents

Patient History: A 19-year-old male auto mechanic with a past medical history of hypertension and obesity presented with an eight-month history of pain and stiffness of the hands, forearms, and legs. His occupational exposure included trimethylbenzene, benzene, naphthane, toluene, and xylene, some of which are chemical solvents. Dermatological examination revealed tightening of the skin and subcutaneous tissue from his elbows to fingers, and knees to feet bilaterally. Musculoskeletal examination revealed limited range of motion of the upper and lower extremities. Distal forearm musculature was extremely taut. MRI of the upper extremities was significant for diffuse fascial thickening and edema bilaterally.

Biopsy: Deep excisional biopsy including fascia of the left forearm demonstrated subcutaneous fibrosis with perivascular and interstitial inflammation with lymphocytes and plasma cells spilling into sclerosed fascia with focal fibrinoid necrosis. Eosinophils were not identified.

Laboratory Data: Labs were significant for an absolute eosinophil count of 1.09x10^9/L (reference range: 0-0.2x10^9/L). Complete blood count and erythrocyte sedimentation rates were normal. Rheumatoid factor, antinuclear antibody, and cyclic citrullinated peptide antibody were negative.

Diagnosis: Eosinophilic fasciitis (EF).

Treatment: Treatment included pulsed intravenous methylprednisolone, daily prednisone, weekly methotrexate, and exposure avoidance. At four week follow up, he reported decreased pain and increased range of motion.

Discussion: EF is a fibrosing disorder that may mimic or overlap with localized scleroderma. EF is most commonly triggered by strenuous exercise, but some cases of fibrosing disorders have been linked to organic solvents and other chemicals. Thus, it is essential to gather a careful history of potential exposures.

**References:**

1. Aryal BK, Khuder SA, Schaub EA. Meta-analysis of systemic sclerosis and exposure to solvents. Am J Ind Med. 2001;40(3):271-274.
2. Borghini A, Poscia A, Bosello S, et al. Environmental Pollution by Benzene and PM10 and Clinical Manifestations of Systemic Sclerosis: A Correlation Study. Int J Environ Res Public Health. 2017;14(11).
3. Brasington RD, Jr., Thorpe-Swenson AJ. Systemic sclerosis associated with cutaneous exposure to solvent: case

report and review of the literature. Arthritis Rheum. 1991;34(5):631-633.
4. Diot E, Lesire V, Guilmot JL, et al. Systemic sclerosis and occupational risk factors: a case-control study. Occup Environ Med. 2002;59(8):545-549.
5. Falanga V, Medsger TA, Jr. Frequency, levels, and significance of blood eosinophilia in systemic sclerosis, localized scleroderma, and eosinophilic fasciitis. J Am Acad Dermatol. 1987;17(4):648-656.
6. Hanami Y, Ohtsuka M, Yamamoto T. Paraneoplastic eosinophilic fasciitis with generalized morphea and vitiligo in a patient working with organic solvents. J Dermatol. 2016;43(1):67-68.
7. Ohtsuka T. Organic solvent-induced myopathy simulating eosinophilic fasciitis and/or dermatomyositis. J Dermatol. 2009;36(6):358-359.

**Primary Author(s):**
Alison M Treichel, Jacobs School of Medicine and Biomedical Sciences at University at Buffalo

**Co-Author(s):**
Geraldine C Ranasinghe, Cleveland clinic foundation; Wilma F Bergfeld, Cleveland Clinic; Cheryl Bayart, Cleveland Clinic Foundation

## A pigmented neurofibroma mimicking a giant congenital melanocytic nevus in a 3-year-old female

A 3 year-old female with genetically confirmed Neurofibromatosis type 1 (NF-1) presented for evaluation of a darkening, hairy, brown patch over her back. It was not congenital, but exact onset was unknown.

On exam, she had a large brown hypertrichotic patch with uniform pigment on dermoscopy over her lumbosacral back and buttocks. Within the patch were several uniform brown macules with globular pigment on dermoscopy, as well as a single firm pink papule. Over twenty café-au-lait macules were noted on her trunk and extremities. The differential diagnosis of the lumbosacral lesion included a giant melanocytic nevus, a plexiform neurofibroma, or a combination thereof [(1)].

MRI of the brain and spine showed optic and brainstem gliomas, a thoracic plexiform neurofibroma, and small neurofibromas at the right S1 and S2 neural foramina.

Pathology of both the pink papule and encompassing brown patch showed dermal and subcutaneous proliferation of spindled mononuclear cells and scattered mast cells within a myxomatous stroma. These stained diffusely for SOX-10 and S100. Several pigmented dendritic cells were noted in the upper dermis. Melan-A highlighted a minority of scattered spindled cells.

A diagnosis of pigmented (melanocytic) neurofibroma was made, a rare entity that accounts for less than 1% of all neurofibromas and may present with hypertrichosis [(2)]. It is important to establish this diagnosis and rule out giant congenital melanocytic nevi, which can occur more frequently in the setting of NF-1 and lead to increased risk of malignant melanoma [(3,4,5)]. No treatment was necessary for the patient's pigmented neurofibroma.

**References:**
1. Silfen R, Skoll PJ, Hudson DA. Congenital giant hairy nevi and neurofibromatosis: the significance of their common origin. Plast Reconstr Surg. 2002 Oct;110(5):1364-5.
2. Fetsch JF, Michal M, Miettinen M. Pigmented (melanotic) neurofibroma: a clinicopathologic and immunohistochemical analysis of 19 lesions from 17 patients. Am J Surg Pathol 2000; 24: 331-43.
3. Friedrich RE, Hagel C. Pigmented (melanotic) diffuse neurofibroma of the back in neurofibromatosis type 1. GMS Interdiscip Plast Reconstr Surg DGPW 2018; 7: Doc 04.
4. Bin Amer Y, Al-Khenaizan S. Fatal malignant melanoma in a child with neurofibromatosis type 1. Int J Dermatol 2007; 46: 967-70.
5. Schaffer JV1, Chang MW, Kovich OI, Kamino H, Orlow SJ. Pigmented plexiform neurofibroma: Distinction from a large congenital melanocytic nevus. J Am Acad Dermatol. 2007 May;56(5):862-8. Epub 2007 Feb 5.

**Primary Author(s):**

Rachel Dunlap, Oregon Health & Science University

**Co-Author(s):**
Alison Small, Oregon Health and Science University; Kevin White, Oregon Health & Science University

## Unusual umbilicated papules: Langerhans cell histiocytosis masquerading as molluscum contagiosum in an adult

A 20-year-old male presented with two years of asymptomatic umbilicated papules on the face, neck, chest, and back. Each lesion persisted for 2-4 weeks before spontaneously regressing. Some lesions healed with scarring. Clinical concern was raised for molluscum contagiosum and a biopsy was preformed of a lesion on the neck. Pathology revealed proliferation of cells in the papillary dermis that stained positive with S100, CD1a, and Langerin (CD207). He was diagnosed with Langerhans Cell histiocytosis (LCH) and referred to hematology-oncology. CT scan of the chest, abdomen, and pelvis was normal. Standard laboratory tests were unremarkable. He was diagnosed with skin-limited LCH and treated with topical steroids.

LCH is a rare disorder characterized by clonal proliferation of immature myeloid precursor cells in one or more organs. LCH is most common in pediatric patients with peak incidence at 0 to 3 years.[1] LCH most commonly affects the bone, skin, pituitary, liver, spleen. Multisystem LCH portrays up to a 20% mortality rate.[1] Cutaneous lesions occur in approximately 40% of patients with LCH and are often a part of multisystem disease.[1] Isolated cutaneous involvement is only seen in 2% of cases of LCH.1 The morphology of cutaneous lesions in LCH is extremely variable. LCH cutaneous lesions mimicking molluscum have been reported in case reports in the literature.[2,3,4] While pseudo-molluscum presentations of Langerhans cell histiocytosis are rare, inclusion of LCH in the differential for umbilicated papules is critical to the timely diagnosis and management of LCH.

**References:**

1. Krooks J, Minkov M, Weatherall AG. Langerhans cell histiocytosis in children: History, classification, pathobiology, clinical manifestations, and prognosis. J Am Acad Dermatol. 2018;78(6):1035-1044.
2. Armenteros JMF, Huguet NA, Novell VS, et al. Langerhans cell histiocytosis mimicking molluscum contagiosum: A case series. Pediatr Blood Cancer. 2018; 65:e27047.
3. Huang JT, Mantagos J, Kapoor R, Schmidt B, Maguiness S. Langerhans cell histiocytosis mimicking molluscum contagiosum. J Am Acad Dermatol. 2012;67(3):e117-8.
4. Karpman MS, AlJasser MI, Lam, JM. Molluscum Contagiosum-Like Presentation of Langerhans Cell Histiocytosis: A Case and Review. Pediatr Dermatol, 34: e288-e289.

**Primary Author(s):**
Michelle Croda, BS, Georgetown School of Medicine

**Co-Author(s):**
Lauren Mihailides, MD, University of Pennsylvania; Nicholas Sebes, MD, Geisinger; William James, MD, University of Pennsylvania

## A differential diagnosis for the congenital midline mass: striated muscle hamartoma

Patient history: A 5-day old black male full-term neonate born via vacuum-assisted delivery for non-reassuring fetal heart rate presented with congenital presentation of two asymptomatic midline lesions. On the midline submental chin there was a soft, brown dome-shaped plaque measuring 0.8-centimeters with a circumferential ring of light brown pigmentation; on the midline upper chest there was a light brown 2-millimeter dome-shaped papule. There was no history of seizures, ophthalmologic findings, abnormalities in head circumference, height, weight or limb size. Newborn screening examination was unremarkable.

Biopsies: Punch biopsies of the submental chin and the midline upper chest revealed haphazardly arranged striated

muscle fibers in the dermis, some of which inserted directly into the epidermis. The muscle fibers were highlighted by Masson's trichrome and myogenin. Alcian blue revealed increased dermal mucin.

Laboratory data: Ultrasound of the submental chin lesion revealed a 0.5 x 0.8 x 0.4-centimeter heterogeneously hypoechoic structure with a peripheral soft tissue rind.

Diagnosis: Striated muscle hamartoma (SMH)

Treatment: Punch biopsy of the SMH on the midline upper chest was both diagnostic and excisional. Conservative management with clinical monitoring for the remaining SMH on the midline submental chin was preferred by the parents as recurrence after excision and spontaneous resolution has been reported.

**References:**


1. Rosenberg AS, Kirk J, Morgan MB. (2002). Rhabdomyomatous mesenchymal hamartoma: an unusual dermal entity with a report of two cases and a review of the literature. J Cutan Pathol. 2002;29(4):238-243.
2. Mazza JM, Linnell E, Votava HJ, Wisoff JH, Silverberg NB. Biopsy-proven spontaneous regression of a rhabdomyomatous mesenchymal hamartoma. Pediatr Dermatol. 2015;32(2): 256-262.
3. Crippa BL, Bedeschi MF, Cantarella G, Colombo L, Agosti V, Amodeo I, Fumagalli M, Mazzola I, Mosca F. Congenital midline cervical cleft: clinical approach to a congenital anterior neck defect. Congit Anom (Kyoto). 2015 May;55(2):112-5.



**Primary Author(s):**

Allison Zarbo, MD, Henry Ford Health System

**Co-Author(s):**

Kevin Luk, MD, MPH, Henry Ford Health System Department of Dermatology; Tor Shwayder, MD, Henry Ford Hospital Dermatology; Ben Friedman, MD, Henry Ford Health System


## Being KIND with appropriate monitoring of Kindler patients: a representative case

Kindler syndrome (KS) is a very rare, autosomal recessive subtype of epidermolysis bullosa (EB) characterized by trauma-induced blisters, progressive poikiloderma, variable photosensitivity, cutaneous atrophy, dyspigmentation and skin fragility and a propensity for cutaneous malignancies.[1,2] We present a case of a 32-year-old female with a history of epidermolysis bullosa simplex diagnosed shortly after birth. As a child, she had a propensity to develop blisters secondary to even minor trauma. This was consistent throughout her childhood but decreased as she entered adulthood. From her adolescent years to present, her major symptoms included photosensitivity, skin atrophy, poikiloderma, and ectropion. On genetic testing, she was found to have a FERMT1 mutation. Kindler syndrome is difficult to diagnose at birth because of the overlap with other types of EB. The differential diagnosis for KS includes other inherited mechanobullous blistering disorders, Weary-Kindler syndrome, and congenital poikilodermas. Clinical findings can be suggestive of KS, but identification of loss-of-function mutations in the FERMT1 gene by gene sequencing confirms the diagnosis.[3,4] With the identification of kindlin-1 as a target protein in KS, labeling with anti-kindlin-1 antibody represents a new and useful diagnostic test when suspecting KS.[2,3] Management is largely symptomatic. We present this case to highlight this rare disorder that should be considered in patients presenting with similar characteristics. It is important to have this on your differential due to the increased risk of cutaneous malignancies and morbidities associated.

**References:**


1. Lai-Cheong JE and McGrath JA. Kindler Syndrome. Dermatol Clin (2010):119-124.
2. Handa N, Kachhawa D, Jain VK, Rao P and Das A. Kindler's syndrome: A tale of two siblings. Indian J Dermatol 2016;61:468
3. Siegel DH, Ashton GH, Penagos HG, Lee JV, Feiler HS, Wilhelmsen KC, et al. Loss of kindlin-1, a human homolog of the Caenorhabditis elegansactin-extracellular-matrix linker protein UNC-112, causes Kindler syndrome. Am J Hum Genet 2003;73:174-87.)
4. Kartal D, Borlu M, Has C, Fölster-Holst R. A novel mutation in the FERMT1 gene in Turkish siblings with Kindler syndrome. J Eur Acad Dermatol Venereol 2015. doi: 10.1111/jdv.13163.

**Primary Author(s):**
Misty G Eleryan, MD, MS, The George Washington University School of Medicine & Health Sciences

**Co-Author(s):**
Adam Friedman, GW School of Medicine and Health Sciences

## Pigmented epithelioid melancytoma in a patient with Costello Syndrome

A 17 year-old-male with Costello syndrome presented to the dermatology clinic with a 6-month history of a slow growing painful lesion on his lateral right ankle. The lesion was a 1cm verrucous brown nodule. There was no inguinal lymphadenopathy. A shave biopsy was performed which demonstrated proliferation of epithelioid and spindle-shaped melanocytes in the dermis without an apparent junctional component. The melanocytes appeared bland and homogenous with granulated melanin within and surrounding the cells. No mitotic figures were noted in the biopsied section and a reactive verrucous and pigmented epidermal surface was appreciated. The patient was diagnosed with a pigmented epithelioid melanocytoma (PEM), an intermediate-grade tumor with a predilection for young adults.[1] Although, PEM is notorious for regional lymph node involvement, distant metastasis is rare, and a case series of 26 patients indicated 100% disease free 5-year-survival rate.[2,3]

Costello syndrome (CS) is a rare genetic syndrome caused by activating germline mutations in HRAS. Children with CS have numerous nevi as part of their phenotype,[4] however PEM has never been reported. Furthermore, PEM has been associated with mutations in PRKCA, GNAQ, MAP2K1, BRAF, and NF.[1] Given the rarity of this tumor and the uncertain biologic behavior, the patient's case was presented at tumor board and a complete excision and sentinel-lymph node biopsy was recommended. Currently, genetic testing of the patient's PEM is pending, thus we are uncertain whether the PEM is a coincidental occurrence with CS or whether this is a genetic variant of PEM in association with CS.

**References:**

1. Isales MC, Mohan LS, Quan VL, et al. Distinct Genomic Patterns in Pigmented Epithelioid Melanocytoma: A Molecular and Histologic Analysis of 16 Cases. Am J Surg Pathol. 2019;43(4):480-488. doi:10.1097/PAS.0000000000001195
2. Moscarella E, Ricci R, Argenziano G, et al. Pigmented epithelioid melanocytoma: Clinical, dermoscopic and histopathological features. Br J Dermatol. 2016;174(5):1115-1117. doi:10.1111/bjd.14322
3. Mandal R V., Murali R, Lundquist KF, et al. Pigmented epithelioid melanocytoma: Favorable outcome after 5-year follow-up. Am J Surg Pathol. 2009;33(12):1778-1782. doi:10.1097/PAS.0b013e3181b94f3c
4. Gripp KW, Morse LA, Axelrad M, et al. Costello syndrome: Clinical phenotype, genotype, and management guidelines. Am J Med Genet A. 2019;179(9):1725-1744. doi:10.1002/ajmg.a.61270

**Primary Author(s):**
A. Yasmine Kirkorian, MD, Division of Dermatology, Children's National Health System

**Co-Author(s):**
Nidhi Shah, George Washington School of Medicine and Health Sciences; Aerang Kim, Children's National Medical Center; A. Yasmine Kirkorian, Children's National Health System

## Linear IgA Bullous Dermatosis Mimicking Stevens-Johnson Syndrome

Background: There are few reported cases of Linear IgA Bullous Dermatosis (LABD) mimicking Steven Johnson Syndrome/Toxic Epidermal Necrolysis (SJS/TEN) in the literature. The classic presentation of the disease is annular plaques and papules with blistering around the edges. However, the presentation of LABD varies greatly among patients. LABD may also mimic other diseases, such as bullous pemphigoid, pemphigus vulgaris, dermatitis herpetiformis, erythema multiforme, or SJS/TEN.

Observation: A 66-year-old woman presented to our hospital one day after she had developed erosions on her skin and in her mouth. Due to concern for SJS/TEN, the patient was admitted to the burn unit and was started on methylprednisolone 40 mg IV every eight hours. On day four of the hospital admission, the primary team consulted dermatology. The patient

had large patches of denuded skin in the axillae, inframammary area, and inguinal folds. Two punch biopsies were taken from the left axilla, one for histopathology and one for direct immunofluorescence. Biopsy results showed a pauci-inflammatory sub-epidermal blister. Direct immunofluorescence showed prominent (4+) linear IgA staining at the dermo-epidermal junction, which confirmed the diagnosis of LABD. The patient's records revealed she had received one dose of vancomycin ten days prior to the initial eruption of the erosions. The patient was started on dapsone 100 mg daily. After two weeks of dapsone treatment, significant improvement of the lesions was observed.

Key Message: The objective of this report is to promote the importance of considering LABD in the differential diagnosis of suspected cases of SJS/TEN. It is crucial that providers perform a biopsy with direct immunofluorescence analysis to confirm the correct diagnosis, especially since it may impact management.

**References:**


1. Chanal J, Ingen-Housz-Oro S, Ortonne N, Duong TA, Thomas M, Valeyrie-Allanore L, et al. Linear IgA bullous dermatosis: comparison between the drug-induced and spontaneous forms. Br J Dermatol. 2013;169(5):1041–1048.
2. Fortuna G, Salas-Alanis JC, Guidetti E, Marinkovich MP. A critical reappraisal of the current data on drug-induced linear immunoglobulin A bullous dermatosis: a real and separate nosological entity? J Am Acad Dermatol. 2012;66(6):988–994.
3. Adler NR, McLean CA, Aung AK, Goh MS. Piperacillin-tazobactam-induced linear IgA bullous dermatosis presenting clinically as Stevens-Johnson syndrome/toxic epidermal necrolysis overlap. British Association of Dermatologists; 2017 Apr 1;42(3):299–302.
4. Griffiths CEM, Barker J, Bleiker T, Chalmers R, Creamer D. Rook's Textbook of Dermatology. 8th ed. Oxford: Blackwell Publishing; 2010; Chapter 40, Immunobullous Diseases; p. 40.45-40.51.
5. Kakar R, Paugh H, Jaworsky C. Linear IgA bullous disease presenting as toxic epidermal necrolysis: a case report and review of the literature. Dermatology; 2013;227(3):209–213.
6. Pereira AR, Moura LH, Pinheiro JR, Pasin VP, Enokihara MM, Porro AM. Vancomycin-associated linear IgA disease mimicking toxic epidermal necrolysis. An Bras Dermatol. 2016 Oct 1;91(5 suppl 1):35–38.
7. Fortuna G, Marinkovich MP. Linear immunoglobulin A bullous dermatosis. Clin Dermatol. 2012 Feb 1;30(1):38–50.
8. Guide SV, Marinkovich MP. Linear IgA bullous dermatosis. Clin Dermatol. 2001 Dec 1;19(6):719–727.
9. Chorzelski TP, Jablonska S, Maciejowska E. Linear IgA bullous dermatosis of adults. Clin Dermatol. 1991 Sep 1;9(3):383–392.
10. Yamagami J, Nakamura Y, Nagao K, Funakoshi T, Takahashi H, Tanikawa A, Hachiya T, Yamamoto T, Ishida-Yamamoto A, Tanaka T, Fujimoto N, Nishigori C, Yoshida T, Ishii N, Hashimoto T, Amagai M. Vancomycin Mediates IgA Autoreactivity in Drug-Induced Linear IgA Bullous Dermatosis. J Invest Dermatol. 2018 Jul 1;138(7):1473–1480.



**Primary Author(s):**

Shaan Patel, MD, MBA, Temple University Lewis Katz School of Medicine

**Co-Author(s):**

Caitlin Hamilton, BS, Lewis Katz School of Medicine at Temple University; Sylvia Hsu, MD; Jason Lee, MD


## Mycosis fungoides palmaris et plantaris, a clinical challenge

A 63 year-old man presented to the emergency department for a one-year history of pruritic, painful, pustular plaques that began acrally and then extended to the arms and legs. Two prior skin biopsies showed impetiginized eczematous dermatitis and psoriasis, respectively. He was treated in the Dominican Republic with intramuscular corticosteroids, methotrexate, and cyclosporine of unknown dose or duration without improvement. Examination revealed erythematous plaques with overlying yellow scale-crust on the palms, soles, dorsal hands, dorsal feet, and lower extremities as well as erythematous plaques with pinpoint pustules circumferentially on the left 4th finger and right 2nd toe associated with yellowing and hyperkeratosis of all nails. Labs were unremarkable and x-rays of the hands were negative for arthritis. He was treated empirically with intravenous antibiotics and systemic corticosteroids. Biopsy demonstrated a tumefactive atypical epitheliotropic CD4 positive, CD7 negative T-cell lymphocytic infiltrate with focal adnexal involvement consistent with tumor-stage mycosis fungoides without large cell transformation. T-cell gene rearrangement studies are pending. The patient was diagnosed with clinical stage IIB (T3N0M0B0) mycosis fungoides after whole body PET-CT scan and peripheral blood flow studies were performed. He is currently being treated with steroid taper and weekly methotrexate by oncology.

Mycosis fungoides palmaris et plantaris (MFPP) is a rare variant of cutaneous T-cell lymphoma that is primarily localized to the palms and soles. The morphology is diverse and can mimic benign dermatoses such as palmoplantar pustulosis, dyshidrotic eczema, and keratoderma. This case highlights the importance of considering MFPP when presented with a recalcitrant palmoplantar dermatosis.

**References:**


1. Nakai N, Hagura A, Yamazato S, Katoh N. Mycosis fungoides palmaris et plantaris successfully treated with radiotherapy: case report and mini-review of the published work. J Dermatol. 2014;41(1):63-7.
2. Toritsugi M, Satoh T, Higuchi T, Yokozeki H, Nishioka K. A vesiculopustular variant of mycosis fungoides palmaris et plantaris masquerading as palmoplantar pustulosis with nail involvement. J Am Acad Dermatol. 2004;51(1):139-41.


**Primary Author(s):**


Kalee Shah, MD, NYP-Cornell


**Co-Author(s):**


Joanna Harp; Cynthia Magro, Weill Cornell Medicine, Cornell University


## Cutaneous Gnathostomiasis Presenting as a Cyst

A 60-year-old Vietnamese man with a history of diabetes and unexplained transaminitis for several years presented with a six month history of a pruritic nodule on the left flank. He frequently travels to Vietnam and regularly consumes sushi. Review of systems indicated recent onset of headaches. Physical exam revealed a firm, mobile subcutaneous nodule measuring 10 x 14 mm on the left flank, in addition to several smaller firm subcutaneous nodules scattered on the trunk. The lesion was conservatively excised. Histology revealed a parasite deep in the dermis with a head bulb covered in transverse rows of hooklet spines, an undulating cuticular layer, and intestinal and esophageal parts suspicious for gnathostoma larva. The parasite was accompanied by a granulomatous mixed inflammatory infiltrate, with eosinophils and neutrophils. The parasite was confirmed to be gnathostoma via morphologic analysis by the CDC. MRI imaging revealed no brain lesions. The patient was treated with oral albendazole.

Gnathostomiasis is a parasitic infection associated with the ingestion of undercooked freshwater fish or certain types of animal meat. It is endemic to Southeast Asia but can be found in other parts of the world. Infection in the human host starts with ingestion of the parasite, with subsequent migration of the nematode to other organs including the skin, eyes and brain. Diagnosis is confirmatory with a skin biopsy if the elusive larva can be captured on histology, but larva may be absent given its migratory nature. Treatment consists of an oral anti-parasitic agent, such as albendazole or ivermectin.

**References:**


1. Korekawa A, Nakajima K, Makita E, Aizu T, Hara K, Maruyama H, Morishima Y, Nakano H, Sawamura D. Two cases of cutaneous gnathostomiasis after eating raw Salangichthys microdon (icefish, shirauo). J Dermatol. 2019 Jun 27 Epub.
2. Leroy J, Cornu M, Deleplancque AS, Loridant S, Dutoit E, Sendid B. Sushi, ceviche and gnathostomiasis - A case report and review of imported infections. Travel Med Infect Dis. 2017 Nov - Dec;20:26-30.
3. Eichelmann K, Tomecki KJ, Martínez JD. Tropical dermatology: cutaneous larva migrans, gnathostomiasis, cutaneous amebiasis and trombiculiasis. Semin Cutan Med Surg. 2014 Sep;33(3):133-5.
4. Orduna TA, Lloveras SC, Echazarreta SE, Garro SL, González GD, Falcone CC. Foodborne dermatosis after traveling: gnathostomiasis. Medicina (B Aires). 2013;73(6):558-61.
5. Laga AC, Lezcano C, Ramos C, Costa H, Chian C, Salinas C, Salomon M, del Solar M, Bravo F. Cutaneous gnathostomiasis: report of 6 cases with emphasis on histopathological demonstration of the larva. J Am Acad Dermatol. 2013 Feb;68(2):301-5.


**Primary Author(s):**


Justin Nguyen, 1Cooper Medical School of Rowan University. Camden, NJ, USA


**Co-Author(s):**

Justin Nguyen BS, Cooper Medical School of Rowan University; Natasha Mesinkovska MD, PhD, University of California Irvine; Linda Doan MD, PhD, University of California, Irvine; Vivian Laquer MD, Department of Dermatology, University of California, Irvine

## Crospovidone Induced Vasculopathy of the Skin

A 46-year-old man with history of hepatitis C presented with four days of tender left hand edema. On exam, violaceous macules and patches were appreciated on the left thenar eminence including the first and second digits. The asymmetric distribution along the distal radial artery was noted, raising concern for a thromboembolic etiology: the patient subsequently endorsed a history of IV drug use. Laboratory workup demonstrated negative rheumatoid factor, cryoglobulins and blood cultures. The patient underwent extensive consultation including infectious disease, general surgery and plastic surgery, all before biopsy demonstrated intravascular basophilic non-birefringent material within the vascular lumen of the deep dermis consistent with crospovidone.

Opioid abuse continues to rise with over 4 million cases of non-medical use of prescriptions every year[1]. This case represents acute vasculopathy secondary to intra-arterial crushed opioid tablet injection, causing foreign body thromboembolism with crospovidine mimicking other forms of microvascular occlusion. Crospovidone is an insoluble disintegrant commonly found in pharmaceutical tablets. When introduced intravenously, the excipient's cross-linked structure causes immediate absorption of surrounding fluid resulting in destruction of arterial wall and thrombosis. Crospovidone has been reported to cause angiothrombosis in lungs[2] and found incidentally in gastrointestinal tract biopsies[3], but to our knowledge is an unrecognized cause of vasculopathy of the skin. This unique case highlights the integral role of the dermatologist in recognizing the cutaneous manifestations of illicit substance abuse which not only provided an accurate diagnosis but directed the patient to appropriate therapy, sparing unnecessary procedures and avoiding further health care expenses.

**References:**

1. Mathis SM, Hagemeier N, Hagaman A, Dreyzehner J, Pack RP. A Dissemination and Implementation Science Approach to the Epidemic of Opioid Use Disorder in the United States. Curr HIV/AIDS Rep. 2018.
2. Ganesan S, Felo J, Saldana M, Kalasinsky VF, Lewin-Smith MR, Tomashefski JF, Jr. Embolized crospovidone (poly[N-vinyl-2-pyrrolidone]) in the lungs of intravenous drug users. Mod Pathol. 2003;16(4):286-292.
3. Shaddy SM, Arnold MA, Shilo K, et al. Crospovidone and Microcrystalline Cellulose: A Novel Description of Pharmaceutical Fillers in the Gastrointestinal Tract. Am J Surg Pathol. 2017;41(4):564-569.

**Primary Author(s):**

John E. Call, MD, Dartmouth-Hitchcock Medical Center

**Co-Author(s):**

Andrew J. Johnson, MD, Dartmouth-Hitchcock Medical Center; Brian J. Simmons, MD, Dartmouth Hitchcock Medical center; Brian S. Hoyt, MD; Konstantinos Linos, MD, Dartmouth Hitchcock Medical Center and Geisel School of Medicine at Dartmouth; Shaofeng Yan, MD, Department of Pathology and Laboratory Medicine, Dartmouth Hitchcock Medical Center, Dartmouth Geisel School of Medicine; Kathryn A. Zug, MD

## A Case of Calciphylaxis Treated with Intralesional Sodium Thiosulfate

A 56-year-old man with a history of recent liver and kidney transplants presented to our clinic for management of calciphylaxis. Previous treatment included debridement and IV sodium thiosulfate, but the course of treatment was not completed due to pain with infusions. On physical exam, there was an irregularly shaped ulcer with a craggy pink base and smooth violaceous to light purple border and associated fibrinous material over medial surface of the right leg measuring 11.1 x 10.0 x 5.1 cm  Due to the pain the patient experienced while receiving IV sodium thiosulfate, treatment was started with intralesional sodium thiosulfate to the periphery of the ulcer on a weekly and then biweekly basis. Over 5 months, the ulcer dramatically decreased in size.  Calciphylaxis is a condition defined by calcium deposition in the media of small blood vessels resulting in downstream ischemic necrosis. Patients with end-stage renal disease and diabetes have the highest risk. Classically, this condition has been attributed to altered calcium metabolism and secondary hyperparathyroidism. Signs and symptoms begin with simple induration or retiform purpura that progresses to tissue necrosis. Treatment options are few. Abnormalities in serum calcium or phosphorous should be addressed. Intravenous sodium thiosulfate has been

successful in case reports. There are few case series of patients treated with intralesional sodium thiosulfate. Doses range from 1 to 20 ml once to three times weekly with some patients treated for up to 10 months. Results of these case reports are promising, though further research is needed.

**References:**

1. Bolognia, J. (2018). Dermatology. [Philadelphia]: Elsevier.
2. Isoherranen, K. (2017). Benefits of intralesional injections of sodium thiosulfate in the treatment of calciphylaxis. International Wound Journal, 14(6), pp.955-959.
3. Strazzula, L. (2013). Intralesional Sodium Thiosulfate for the Treatment of Calciphylaxis. JAMA Dermatology, 149(8), p.946.

**Primary Author(s):**
Angelo Landriscina, MD, George Washington University School of Medicine and Health Sciences

**Co-Author(s):**
Jennifer Aronica, MD, George Washington University; Pooja Khera, MD, George Washington School of Medicine and Health Sciences; Mary Maiberger, MD, VA Medical Center, Washington, D.C. and George Washington University Department of Dermatology

## Diffuse cutaneous acanthamoebiasis in an immunodeficient patient

A 24-year-old Caucasian male with a history of immunodeficiency associated with an IL- 2 mutation and characterized by a IgG subclass 2 deficit, elevated IgM, and absolute lymphopenia was admitted for syncope. Two days prior, he developed scattered 0.5- 1.0 cm erythematous, indurated pseudovesicles and pustules on his face, trunk, and extremities. Examination revealed erythematous, indurated plaques with superficial ulcerations on bilateral lower extremities and reticulate hyperpigmentation and erythema on the trunk and proximal extremities.

Biopsy of a representative lesion on the abdomen revealed a dermal infiltrate of amebic organisms in both cyst and trophozoite forms, with neutrophilic inflammation. GMS and PAS- F marked the cyst walls. Bacterial, fungal, mycobacterial, and viral tissue cultures were negative. Tissue sections demonstrated positive indirect immunofluorescence for acanthamoeba spp. Acanthamoeba CSF- PCR was negative.

A diagnosis of cutaneous acanthamoebiasis was made. Acanthamoeba are ubiquitous, largely opportunistic organisms that exist in stable cyst and infective trophozoite forms.[1] Clinical manifestations include blinding keratitis and fatal granulomatous amoebic encephalitis (GAE).[1] Cutaneous involvement is rarely reported and includes papules, pustules, nodules, and ulcers.[2-5] Importantly, cutaneous findings can predate CNS disease.[1-3] Diagnosis via H&E is often challenging, and multi-drug therapy is employed but often futile.

Over the next 48 hours, our patient's neurologic status rapidly deteriorated despite miltefosine, voriconazole, Bactrim, azithromycin, and topical chlorhexidine and ketoconazole. MRI could not rule out GAE, but biopsy was deferred. The patient died shortly after diagnosis. Autopsy revealed disseminated acanthamoeba infection involving the skin, lungs and brain.

**References:**

1. Anita, K., Brian, B., & Upinder, S. Free-Living Amebae. Mandell, Douglas, and Bennetts Principles and Practice of Infectious Disease: 2-volume set. 2015. 8th ed., pp. 3059–3065. ELSEVIER. Philadelphia, PA. doi: 9780323482554
2. Sison, JP, Kemper, CA, Loveless, M, McShane, D, Visvesvara, GS, and Deresinki, SC. Disseminated Acanthamoeba infection in patients with AIDS: case reports and review. Clin Infect Dis. 1995; 20: 1207–1216
3. Torno MS, Babapour R, Gurevitch A, Witt MD. Cutaneous acanthamoebiasis in AIDS. J Am Acad Dermatol. 2000;42(2 Pt 2):351-4.
4. Friedland, LR, Raphael, SA, Deutsch, ES, Johal, J, Martyn, LJ, Visvesvara, GS et al. Disseminated Acanthamoeba infection in a child with symptomatic human immunodeficiency virus infection. Pediatr Infect Dis J. 1992; 11: 404–407
5. Winsett F, Dietert J, Tschen J, Swaby M, Bangert CA. A rare case of cutaneous acanthamoebiasis in a renal transplant patient. Dermatol Online J. 2017;23(3)

**Primary Author(s):**
Thomas Scharnitz, MD, University of Michigan

**Co-Author(s):**
Alexandra Hristov, MD, University of Michigan; Robert Eilers, MD FAAD; Johann Gudjonsson, MD PhD

## Subcutaneous panniculitis-like T-cell lymphoma presenting with hemophagocytic syndrome, parotitis, and nodal involvement

A 59-year-old man with systemic lupus erythematosus (SLE), diagnosed 15 years prior based on skin biopsy of a photosensitive rash on his back and positive autoantibodies, presented with six weeks of fever, weight loss, dizziness, bilateral parotid enlargement, and dyspnea on exertion. He was initially hospitalized with concerns for lupus enteritis and received methylprednisolone, though biopsies were ultimately negative. After discharge, he continued to have fevers and developed an asymptomatic rash that started on his legs and spread to his trunk and arms.

On exam, there were smooth, pink-red indurated papules on the dorsal arms, thighs, and shins, and blanching erythema on the trunk. Notable labs included pancytopenia, ferritin 12,053 ug/L, triglycerides 226 mg/dl, elevated liver enzymes, elevated soluble IL-2 receptor, and unremarkable rheumatologic and infectious workup. Deep skin biopsy showed lobular panniculitis with adipocyte spaces rimmed by atypical lymphocytes with a CD3+, CD8+, CD2+, perforin+ immunophenotype with dim expression of CD5 and T-cell receptor (TCR) beta chain, without TCR delta chain, consistent with subcutaneous panniculitis-like T-cell lymphoma (SPTCL). PET scan revealed inguinal and femoral lymph nodes suspicious for nodal disease, and bone marrow biopsy revealed hemophagocytosis.

The patient was started on cyclophosphamide, doxorubicin, etoposide, vincristine, and prednisone. This case highlights a unique presentation of SPTCL with hemophagocytic syndrome, parotitis, and nodal involvement. SPTCL may be associated with SLE and the skin findings are often difficult to distinguish between lupus erythematosus panniculitis. SPTCL patients rarely develop hemophagocytic syndrome, and those that do have a poorer prognosis.

**References:**

1. LeBlanc RE, Tavallaee M, Kim YH, Kim J. Useful Parameters for Distinguishing Subcutaneous Panniculitis-like T-Cell Lymphoma From Lupus Erythematosus Panniculitis. Am J Surg Pathol. 2016;40(6):745-754. doi:10.1097/PAS.0000000000000596
2. Pincus LB, LeBoit PE, McCalmont TH, et al. Subcutaneous Panniculitis-Like T-Cell Lymphoma With Overlapping Clinicopathologic Features of Lupus Erythematosus: Coexistence of 2 Entities? Am J Dermatopathol. 2009;31(6):520-526. doi:10.1097/DAD.0b013e3181a84f32
3. Wu X, Subtil A, Craiglow B, Watsky K, Marks A, Ko C. The coexistence of lupus erythematosus panniculitis and subcutaneous panniculitis-like T-cell lymphoma in the same patient. JAAD Case Reports. 2018;4(2):179-184. doi:10.1016/j.jdcr.2017.08.021
4. Willemze R, Jansen PM, Cerroni L, et al. Subcutaneous panniculitis-like T-cell lymphoma: definition, classification, and prognostic factors: an EORTC Cutaneous Lymphoma Group Study of 83 cases. Blood. 2008;111(2):838-845. doi:10.1182/blood-2007-04-087288
5. Go RS, Wester SM. Immunophenotypic and molecular features, clinical outcomes, treatments, and prognostic factors associated with subcutaneous panniculitis-like T-cell lymphoma. Cancer. 2004;101(6):1404-1413. doi:10.1002/cncr.20502

**Primary Author(s):**
Connie S. Zhong, MSc, Harvard Medical School

**Co-Author(s):**
Oyetewa Oyerinde, MD, Harvard Combined Dermatology Residency Training Program; Steven T. Chen, MD, MPH, MS-HPEd, Mass General Hospital/Harvard Medical School; Jeffrey A. Barnes, MD, PhD, Massachusetts General Hospital Cancer Center; Lyn M. Duncan, MD, Mass General Hospital/Harvard Medical School; Megan M. Lockwood, MD, Massachusetts General Hospital; Tasos Gogakos, MD, PhD, Department of Pathology, Massachusetts General Hospital; David M. Miller, MD, PhD, Massachusetts General Hospital

## Subcutaneous Panniculitis Like T cell Lymphoma In Association with Lupus Panniculitis

We present a case of a 28 year old hispanic female with a two year history of lipoatrophy and biopsy proven traumatic fat necrosis on right arm, who subsequently deep seated painful nodules in the same location. Biopsy confirmed lobular lymphocytic panniculitis. Further immunohistochemical stains were performed and demonstrated evidence of a clonal T cell population (CD 2+, CD 3+, CD 5+, CD 7+ T cell infiltrate with a predominance of CD8+ cells over CD4+ cells). Noteworthy, TCR-delta was also positive in a small percentage of lymphocytes. This constellation of findings was difficult to interpret as there were features of both lupus panniculitis and subcutaneous panniculitis like T cell lymphoma. TCR-alpha/beta receptor immunohistochemistry is expected to be positive in cases of subcutaneous panniculitis like T cell lymphoma, however it is possible for expression to be lost. We did not favor a diagnosis of gamma-delta T cell lymphoma, given that there was a lack of diffuse TCR-delta and the morphology/clinical picture was inconsistent.

Several cases of lobular panniculitis with overlapping histopathologic features of subcutaneous panniculitis like T cell lymphoma and lupus panniculitis have been reported in the literature. Clinical manifestations in these patients were similar, including morphologic evidence of lupus panniculitis with subcutaneous nodules healing with lipoatrophy. We suspect this patient developed subcutaneous panniculitis like T cell lymphoma within lesions of long standing lupus panniculitis.

**References:**


1. Shiau CJ, Abi Daoud MS, Wong SM, Crawford RI. Lymphocytic panniculitis: analgorithmic approach to lymphocytes in subcutaneous tissue. J Clin Pathol. 2015Dec;68(12):954-62. doi: 10.1136/jclinpath-2014-202849. Review. PubMed PMID:26602413.
2. Pincus LB, LeBoit PE, McCalmont TH, Ricci R, Buzio C, Fox LP, Oliver F,Cerroni L. Subcutaneous panniculitis-like T-cell lymphoma with overlapping clinicopathologic features of lupus erythematosus: coexistence of 2 entities? Am J Dermatopathol. 2009 Aug;31(6):520-6. doi: 10.1097/DAD.0b013e3181a84f32. PubMed PMID: 19590424.
3. Ohtsuka M, Miura T, Yamamoto T. Clinical characteristics, differentialdiagnosis, and treatment outcome of subcutaneous panniculitis-like T-celllymphoma: a literature review of published Japanese cases. Eur J Dermatol. 2017Feb 1;27(1):34-41. doi: 10.1684/ejd.2016.2914. Review. PubMed PMID: 28120776.
   R Willemze, PM Jansen, L Cerroni, et al. Subcutaneous panniculitis-like T-celllymphoma: definition, classification, and prognostic factors: an EORTC Cutaneous Lymphoma Group Study of 83 cases. Blood. 111:838-845 2008 88
4. F Bosisio, S Boi, V Caputo, et al.: Lobular panniculitic infiltrates with overlapping histopathologic features of lupus panniculitis (lupus profundus) and subcutaneous T-cell lymphoma: a conceptual and practical dilemma. Am J Surg Pathol. 39:206-2112015
5. Willemze R, Jansen PM, Cerroni L, Berti E, Santucci M, Assaf C, Canninga-vanDijk MR, Carlotti A, Geerts ML, Hahtola S, Hummel M, Jeskanen L, Kempf W, MassoneC, Ortiz-Romero PL, Paulli M, Petrella T, Ranki A, Peralto JL, Robson A, SenffNJ, Vermeer MH, Wechsler J, Whittaker S, Meijer CJ; EORTC Cutaneous LymphomaGroup. Subcutaneous panniculitis-like T-cell lymphoma: definition,classification, and prognostic factors: an EORTC Cutaneous Lymphoma Group Studyof 83 cases. Blood. 2008 Jan 15;111(2):838-45. Epub 2007 Oct 12. PubMed PMID:17934071.



**Primary Author(s):**
Andrea R. Waldman MD, Albert Einstein College of Medicine

**Co-Author(s):**
David Ciocon MD; Bijal Amin MD, Albert Einstein College of Medicine


## Rapidly Growing Mycobacterial Infection Masquerading as a Keratoacanthoma—An Often Delayed Diagnosis

A 61-year-old Vietnamese female with a history of renal transplantation on immunosuppression presented with a 2-month history of an asymptomatic nodule on her right dorsal foot. Examination of the right dorsal foot showed a 1.5 centimeter exophytic erythematous-violaceous nodule with a friable appearance concerning for a keratoacanthoma.
Shave biopsy revealed numerous fite and gram-positive bacilli compatible with mycobacterial infection with overlying

pseudocarcinomatous epithelial hyperplasia. GMS special stain was negative for any fungal elements. Repeat shave biopsy was performed for tissue culture, which was positive for Mycobacterium chelonae. X-ray of the right foot was negative for osteomyelitis. The patient was started on a multidrug regimen of clarithromycin plus moxifloxacin for a 4-month course. Sensitives showed resistance to moxifloxacin and the patient was subsequently switched to Linezolid and continued to show clinical improvement.

M. chelonae is rapidly growing mycobacterium (RGM) most commonly associated with skin, soft tissue, and lung infections, with the highest incidence in the Gulf Coast region of the US.[1-4] Cutaneous infection is seen most commonly on the lower extremities and in immunocompromised patients (up to 60% of cases).5 Diagnosis is often delayed, with a median time between initial evaluation and diagnosis of 12 weeks.[4-5] Management involves multidrug antibiotic treatment, and surgical therapy may be required in some cases.[6-7]

This case emphasizes that a high index of suspicion is needed for RGM infections in patients presenting with eruptive nodules on the extremities, especially in patients with a history of immunosuppression, recent trauma, invasive procedures, or environmental exposure.[4]

**References:**


1. Gonzalez-Santiago TM, Drage LA. Nontuberculous Mycobacteria: Skin and Soft Tissue Infections. Dermatologic Clinics. 2015; 33 (3).
2. Misch EA, Saddler C, Davis JM. Skin and Soft Tissue Infections Due to Nontuberculous Mycobacteria. Current Infectious Disease Reports. April 2018; 20 (6).
3. Jones MM, Winthrop KL, Nelson SD, et al. Epidemiology of nontuberculous mycobacterial infections in the U.S. Veterans Health Administration. PLoS One. 2018;13(6).
4. Philips RC, Hoyer PE, White SM, et al. Cutaneous nontuberculous mycobacteria infections: A retrospective case series of 78 patients from the Texas Gulf Coast region. Journal of the American Academy of Dermatology, 2019; 81(3).
5. Uslan DZ, Kowalski TJ, Wengenack NL, et al. Skin and Soft Tissue Infections Due to Rapidly Growing Mycobacteria Comparison of Clinical Features, Treatment, and Susceptibility, JAMA Dermatology, 2006;142:1287-1292.
6. Wallace RJ Jr, Brown-Elliott BA, Ward SC, et al. Activities of linezolid against rapidly growing mycobacteria. Antimicrob Agents Chemotherapy, 2001; 45:764.
7. Brown BA, Wallace RJ Jr, Onyi GO, et. Al. Activities of four macrolides, including clarithromycin, against Mycobacterium fortuitum, Mycobacterium chelonae, and M. chelonae-like organisms. Antimicrob Agents Chemother. 1992;36(1):180.



**Primary Author(s):**
Anna-Marie Hosking, MD, UC Irvine Department of Dermatology

**Co-Author(s):**
Brianne Daniels, DO; Jessica Sprague, MD


## Acitretin Therapy for Galli-Galli Disease

A 75-year-old female presented with a 40-year history of intermittent eruptions of pruritic crusted and scaling pink papules that progressed to tan macules over the neck, trunk, flexor and extensor surfaces of the extremities. Flares cleared with topical corticosteroids. Histopathology revealed suprabasilar acantholysis, dyskeratosis, and elongated rete ridges. Direct DNA sequencing was negative for KRT5 mutations. Whole-exome sequencing demonstrated a heterozygous nonsense mutation in POGLUT1, p.Arg218*; c.652>T.[1] The same mutation was found in the patient's symptomatic son. The constellation of findings supported a diagnosis of Galli-Galli Disease (GGD).

Nine years later, the patient presented for follow-up after an acute, severely pruritic eruption. Exam demonstrated hundreds of excoriated and crusted pink to violet papules over the posterior neck, back, chest, abdomen, bilateral arms, and legs. Laboratory workup revealed mild eosinophilia (6.4%; 0.5 K/cu mm). Immunofluorescent staining was negative and lesional skin biopsy again showed suprabasilar acantholysis, dyskeratosis and lentiginous changes. The patient's presentation was consistent with a severe flare of GGD. The eruption did not improve with oral and topical corticosteroids.

She was started on acitretin. The patient's skin improved significantly after two months, and cleared after eight months, with the exception of chronic pigmentary changes over the proximal bilateral upper and lower extremities, chest, and back.

GGD is a rare genodermatosis that is considered an acantholytic variant of Dowling-Degos Disease.[2,3] Treatment is exceedingly difficult. There are no reports of successful medical treatment. We present a case of a severe flare of GGD that was successfully treated with acitretin.

**References:**

1. Wilson NJ, Cole C, Kroboth K, et al. Mutations in POGLUT1 in Galli–Galli/Dowling–Degos disease. Br J Dermatol. 2017;176(1):270-274. doi:10.1111/bjd.14914
2. Müller CSL, Pföhler C, Tilgen W. Changing a concept - controversy on the confusing spectrum of the reticulate pigmented disorders of the skin. J Cutan Pathol. 2009;36(1):44-48. doi:10.1111/j.1600-0560.2008.00995.x
3. Hanneken S, Rütten A, Pasternack SM, et al. Systematic mutation screening of KRT5 supports the hypothesis that Galli-Galli disease is a variant of Dowling-Degos disease. Br J Dermatol. 2010;163(1):197-200. doi:10.1111/j.1365-2133.2010.09741.x

**Primary Author(s):**
Solveig Ophaug, MD, Oregon Health & Science University

**Co-Author(s):**
Chandler Rundle, MD, University of Colorado Anschutz Medical Center; Eric Simpson, MD, Oregon Health & Science University

## Acquired Hemophilia A in the setting of Bullous Pemphigoid successfully treated with Rituximab

A 76-year-old female presented with a new onset bullous eruption over her trunk, proximal arms, and legs that progressed over one month. A biopsy was performed showing a subepidermal split with numerous eosinophils and neutrophils and a direct immunofluorescence displayed linear IgG, C3, and fibrinogen along the basement membrane zone, consistent with bullous pemphigoid. She was started on prednisone, doxycycline, and niacinamide. Over the next several weeks, she continued to develop extensive cutaneous and oral bullae. In addition, she developed large ecchymotic patches over her right abdomen, right thigh, and anterior neck. Her condition continued to decline and she experienced an episode of significant hematemesis. She was admitted and found to have hemoglobin of 5.8 g/dl, down from 14.1 g/dl one week prior. Hematology was consulted and extensive workup revealed a normal platelet count, INR, fibrinogen, D-dimer, haptoglobin, and prothrombin time. However, she had an elevated partial thromboplastin time (PTT) and diminished factor VIII function, consistent with acquired hemophilia A (AHA), which likely resulted secondary to her BP.

AHA has rarely been associated with autoimmune conditions, including BP. It is hypothesized that the anti-BP180 antibodies in BP bind to a homologous epitope on FVIII, leading to its destruction or inhibition. Reported treatments for AHA associated with BP include systemic steroids, azathioprine, mycophenolate mofetil, IVIg, and rituximab.

Given her lack of response to prior therapies, she received two doses of rituximab, which led to resolution of her BP and AHA when seen in follow up three months after this therapy.

**References:**

1. Binet Q, Lambert C, Sacre L, Eeckhoudt S, Hermans C. Successful Management of Acquired Hemophilia A Associated with Bullous Pemphigoid: A Case Report and Review of the Literature. Case Rep Hematol. 2017; 2017:2057019.
2. Bolognia J, Jorizzo J, Schaffer J, Callen J, Cerroni, L, Heymann R., ... Schwarz, T. (2017). Dermatology, 4th edition. London: Elsevier.
3. Caudron A, Chatelain D, Christophe O, Lok C, Roussel B, Viseux V. Favourable progression of acquired hemophilia-associated bullous pemphigoid. Eur J Dermatol. 2009;19(4):383-384.
4. Patel R, Harman K, Nichols C, Burd R, Pavord S. Acquired haemophilia heralded by bleeding into the oral mucosa in a patient with bullous pemphigoid, rheumatoid arthritis, and vitiligo. Postgrad Med J. 2006;82(963):e3.

**Primary Author(s):**
Michael J. Isaacs, MD, Indiana University School of Medicine

**Co-Author(s):**
Daniel Grove, Indiana University

## Borderline Lepromatous Leprosy, A Case Report and Discussion

Hansen's disease is a rare infectious disease caused by Mycobacterium leprae. Here, we report a 69-year-old male Caucasian rural Missourian without history of contact with armadillos who presented with a diffuse coalescing nodular rash, along with painful peripheral neuropathy of an indefinite time period. On exam, the lesions were palpable and hyperpigmented. The ulnar nerve was enlarged bilaterally at the medial epicondyle. Histopathology revealed numerous granulomas, globi, and Virchow cells. Fite staining demonstrated numerous acid fast organisms. Tissue PCR was positive for M. leprae. The findings were consistent with classical borderline lepromatous leprosy, rarely seen in the midwestern United States, especially in a US born and current US resident at this advanced disease state. The patient travels to resorts in Mexico yearly, but does not venture off the resort. He has no knowledge of infectious contacts, both locally and internationally. He was started on a course of minocycline, dapsone, and levofloxacin. Leprosy occurs on a spectrum from lepromatous to tuberculoid, depending on the host's immune response. After a lengthy incubation period, lepromatous leprosy arises due to an inappropriate Th2 T cell response to an intercellular infection, while tuberculoid leprosy is a Th1 T cell response. Under 200 cases are reported per year in the USA, the vast majority of which occur in immigrants. While a rare entity, maintaining a level of suspicion for Hansen's disease is warranted when nodular lesions present along with nerve involvement.

**References:**

1. Bolognia J, Jorizzo JL, Schaffer JV. (2017). Dermatology, 4th edition. Philadelphia: Elsevier Saunders.
2. Saini C et al. T helper cells in leprosy: An update. Immunology Letters. 2017 February. 184:61-6.
3. Gaschignard et al. Pauci- and Multibacillary Leprosy: Two Distinct, Genetically Neglected Diseases. PLOS Neglected Tropical Diseases. 2016 May. 10(5): e0004345.
4. White C, Franco-Paredes, C. Leprosy in the 21st Century. Clinical Microbiology Reviews. 2015 January. 28(1):80-94

**Primary Author(s):**
Michael Fong, D.O., Northeast Regional Medical Center, STILL-OPTI

**Co-Author(s):**
Lloyd Cleaver, D.O.; David Cleaver, D.O., Northeast Regional Medical Center/ Still OPTI; Nathan Cleaver, D.O.

## Eosinophilic Granulomatosis with Polyangiitis (EGPA) with predominant skin manifestation: an unusual presentation

64 year-old Chinese male was admitted for left ankle swelling with erythema. Discrete purpuric papules over toes, dorsum of foot, fingers and faint purpura over glabella were noted. One month prior, he was diagnosed with COPD and sinusitis. Clinically, he was non-toxic. There were no neurological, cardiac or gastrointestinal symptoms. Eosinophilia was 6.38x109/L on admission. A clinical diagnosis of cutaneous vasculitis with possible etiology of EGPA was made. Other etiologies included Henoch-Schönlein purpura, other autoimmune vasculitis, septic emboli, paraneoplastic cause and hypereosinophilic syndrome.

Biopsy of lower limbs purpuric papules showed foci of epidermal necrosis with extensive vasculitis involving capillary-sized blood vessels of superficial dermis. Dermal inflammation contained admixed eosinophils. Direct immunofluorescence showed positive C3, C1q and fibrin granular deposits within blood vessel walls.

Progressive glabella vasculitic lesions and ear helix vasculitic papules were noted. Eosinophilia rose to 18.49x109/L. Blood cultures were clear. 2D-Echocardiography was normal. Anti-nuclear antibody was <1:80, C3 and C4 were normal. Lupus anticoagulant was positive. Bone marrow aspiration excluded primary hematological eosinophilic disorder. Nitrous oxide

measurement of lung function was significant, suggesting eosinophilic inflammation. CT scan of thorax, abdomen and pelvis showed no neoplasm but noted wedge-shaped hypodensities in kidneys.

The Anti-Myeloperoxidase returned positive supporting the diagnosis of EGPA. Paraneoplastic vasculitis was excluded. As lupus anticoagulant was positive, he likely developed secondary anti-phospholipid syndrome from EGPA leading to kidney infarcts.

The patient was commenced on systemic steroids of 60mg/day (1mg/kg/day) and warfarin, which led to rapid normalization of the eosinophil count. He also reported improvement of sinusitis and that skin lesions stabilized.

**Primary Author(s):**
Adinia Santosa, MD, MRCP(UK), NUH, Division of Dermatology

**Co-Author(s):**
A/ Prof. Anselm Mak, MMedSc(HK), MBBS(HK), MD(HK), PhD(NUS), MRCP(UK), FRCP (Lond), FRCP(Edin), FRCPI; Dr. Justin Wong Soon Boon, MBBS, FRCPA; Dr. Sue-Ann Ho Ju Ee, MBBS, MRCP (UK), National University Hospital, Singapore

## A Case of Congenital Pigmented Dermatofibrosarcoma Protuberans

An otherwise healthy 18-year-old female with Fitzpatrick skin type V presented to dermatology clinic for evaluation of a skin lesion on her right low back. The patient and her mother noted that the lesion was present at birth and had been growing with her over time. However, over the past two years, it became more elevated and slightly larger in size. On examination of the right low back, there was an irregular 3.0 x 2.3 cm thin dark brown plaque with asymmetrical pigmentation and slight increased induration of the superior and lateral edges. Excisional biopsy of the lesion was performed, which revealed tightly packed spindled cells arranged in a storiform pattern extending through the dermis and into the subcutaneous septa with many scattered pigmented epithelioid cells. The spindled cells are positive for CD34 and largely negative for factor XIIIA. An immunostain for S100 is positive within pigmented but not spindled cells. Histologically, this is consistent with pigmented dermatofibrosarcoma protuberans (DFSP) or Bednar tumor. The patient was subsequently referred to Mohs surgery for resection. Dermatofibrosarcoma protuberans (DFSP) is a rare variant of a fibroblast-derived sarcoma and reports of pigmented and congenital DFSP are even more infrequent within the literature. This case ultimately highlights both a rare diagnosis with unique histopathological findings and also provides a reminder to the clinician on the potential congenital nature of DFSP.

**Primary Author(s):**
Molly C. Goodier, MD, Health Partners Institute Dermatology Residency Program

**Co-Author(s):**
Lauren Brin-Hermans; Katherine Brick, Health Partners Medical Group

## Cutaneous B-cell post-transplantation lymphoproliferative disorder of the breast mimicking inflammatory breast carcinoma

Introduction: Post-transplantation lymphoproliferative disorders (PTLD) is a known complication in solid organ and hematopoietic stem cell transplant recipients. Cutaneous PTLD is rare and may present as erythematous nodules and plaques on trunk and extremities.

Case: A 61-year-old female with history of double lung transplantation and immunosuppression therapy presented with rash on the right breast for several weeks. The rash started as an erythematous patch and subsequently became more red, indurated and tender. The patient noticed the areola begin to ulcerate, but denied any nipple discharge or bleeding. Physical examination revealed a moderately demarcated, irregularly shaped erythematous plaque on the inferolateral right breast with dark brown crusty changes of the areola. Right breast ultrasound revealed an enlarged breast with diffuse skin thickening and edema with enlarged lymph nodes in right axilla, concerning for inflammatory breast cancer. Skin biopsy showed a dense infiltrate composed predominantly of B-cells, expressing CD20, PAX5, BCL6, MYC and MUM1 markers.

CD3 and BCL2 stained scattered background T-cells; kappa and lambda light chain stains, CD30 and CD138 were negative within the lymphoid cells. EBER (EBV in-situ) stain was negative. Similar features were identified in right axillary lymph node biopsy. These findings are consistent with EBV-negative, monomorphic B-cell PTLD. Whole-body imaging studies did not identify systemic involvement. The patient was treated with rituximab. The erythematous plaque completely regressed after four weekly rituximab infusions. Repeat full-body PET scan three weeks after treatment showed no right axillary adenopathy. This case demonstrates PTLD of the breast may present like inflammatory breast carcinoma.

**References:**
1. Dierickx, D. and Habermann, T.M. 2018. Post-Transplantation Lymphoproliferative Disorders in Adults. The New England Journal of Medicine 378(6), pp. 549–562.

**Primary Author(s):**
Li-Wei Chang, MD, DSc, University of Pittsburgh Medical Center

**Co-Author(s):**
Jonhan Ho; Arivarasan Karunamurthy, UPMC; Alaina J. James, UPMC, University of Pittsburgh

## Cutaneous Legionellosis After Well Water Exposure in an Allogeneic Hematopoietic Cell Transplantation Recipient

Patient History: A 50-year-old woman with acute myeloid leukemia developed fever, dry cough, and painful erythematous nodules with turbid drainage and surrounding erythema on bilateral lower extremities on day+78 following peripheral blood stem cell transplantation (PBSCT). Sputum culture was positive for pharyngeal flora. Incision and drainage of lesions was performed. Bacterial, fungal, and mycobacterial wound cultures were negative, though Gram stain revealed 1+ Gram-negative rods (GNR). While awaiting wound culture results, 10-day course of trimethoprim/sulfamethoxazole and topical mupirocin were empirically initiated for pustular skin/soft tissue infection. Empiric levofloxacin was also prescribed for the cough for one week. Skin nodules decreased in size, and drainage and pain improved and pulmonary symptoms resolved. Following completion of both antibiotics, cutaneous nodules recurred on day +112.

Pathology and Laboratory Data: Skin 4- mm punch biopsies of a left shin nodule revealed a dense acute inflammatory infiltrate with necrotic debris and forms suspicious for bacterial rods on Brown- Hopps stain, some of which appeared intracellular. Periodic Acid-Schiff- Diastase (PAS- D) and acid- fast bacilli (AFB) stains were negative. Biopsy tissue bacterial Gram stain again revealed 1+ GNR, and culture demonstrated 3+ coagulase- negative staphylococci, consistent with skin flora. Fungal and mycobacterial cultures were negative. Broad- range 16S rRNA gene amplification and sequencing of biopsy tissue confirmed Legionella species.

Diagnosis: Cutaneous Legionellosis

Treatment: A 28- day levofloxacin course was initiated given GNRs on Gram stain and prior improvement on levofloxacin. Because antimicrobials previously used had activity against Legionella, no additional treatment was initiated. Skin lesions resolved following treatment completion.

Conclusion: Cutaneous legionellosis is an uncommon but important differential diagnosis to consider in immunocompromised patients with culture-negative cutaneous lesions with histologic rods, and unresponsive to empiric antibiotics. Careful history and early initiation of macrolides or fluoroquinolones may reduce associated morbidity.

**References:**
1. Verykiou, S., et al., Legionella feeleii: an unusual organism associated with cutaneous infection in an immunocompromised patient. Clin Exp Dermatol, 2018. 43(3): p. 300-302.
2. Chow, J.W. and V.L. Yu, Legionella: a major opportunistic pathogen in transplant recipients. Semin Respir Infect, 1998. 13(2): p. 132-9.
3. Padrnos, L.J., et al., Cutaneous legionellosis: case report and review of the medical literature. Transpl Infect Dis, 2014. 16(2): p. 307-14.
4. Chen, A.F., et al., Prediction of postoperative pain after Mohs micrographic surgery with 2 validated pain anxiety scales. Dermatol Surg, 2015. 41(1): p. 40-7.

**Primary Author(s):**
Toral Vaidya, MPH, Memorial Sloan Kettering Cancer Center

**Co-Author(s):**
Elizabeth Schmidt, PA-C; Genovefa Papanicolaou, MD, Memorial Sloan Kettering cancer center; Jocelyn Hauser, PhD, Memorial Sloan Kettering Cancer Center, Microbiology Service; Cecilia Lezcano, MD; Yi-Wei Tang, MD, PhD; Alina Markova, MD, Memorial Sloan Kettering Cancer Center

## Papular Epidermal Nevus with "Skyline" Basal Cell Layer Syndrome in Siblings

Two brothers, 9 and 7 years of age presented with multiple asymptomatic scattered whitish skin lesions present since birth and gradually increasing in size. The 9-year-old has attention/behavioral issues, anxiety, history of toe-walking/gait disturbances, and sensory seeking behaviors. The 7-year-old has astigmatism, amblyopia, and speech issues. The 9-year-old had oval white papules coalescing into plaques distributed on the back, abdomen and right forearm, some in a linear arrangement. The 7-year-old had similar lesions on the right chest, right inguinal region, right shoulder, back, and right thigh. Punch biopsy from the abdomen of the 9-year-old revealed diffusely compact orthokeratosis, acanthosis with broad and rectangular rete ridges, and basal cell layer with palisading basal cell nuclei. MRI to rule out tethered cord was negative. A diagnosis of papular epidermal nevus with "skyline" basal cell layer syndrome (PENS) was made in the 9-year-old based on clinical and histologic findings, with a presumptive diagnosis of PENS in the 7-year-old based on dermatologic and neurologic picture. PENS is a rare neurocutaneous syndrome with epidermal nevi and extracutaneous manifestations of peculiar facies, achilles tendon shortening, and mild psychomotor delay[1-4]. Children with PENS are at risk for epilepsy and intellectual disability. poradic familial PENS could be explained by gonadal mosaicism or paradominant inheritance[3]. The lesions lack the common FGFR3 or PIK3CA mutations found in keratinocytic nevi [3]. There are only four cases of familial PENS reported, most being sporadic, making this case of interest[5-7].

**References:**

1. Zahn CA, Itin P. Papular epidermal nevus with "skyline" basal cell layer syndrome–natural course: Case report and literature review. Case Rep Dermatol, 2017;9(1), 1-5.
2. Rodríguez-Díaz E, Gonzalvo P, Colmenero I, Requena L., Hernández-Martín A, Torrelo A. ( Papular epidermal nevus with "skyline" basal cell layer (PENS) with extracutaneous findings. Pediatr Dermatol 2013; 30(4), e54-e56.
3. Torrelo A , Colmenero I., Kristal L, et al. Papular epidermal nevus with "skyline" basal cell layer (PENS). J Am Acad Dermatol 2011; 64(5), 888-892.
4. Tadini G. Restano L, Happle R, Itin P. PENS syndrome: a new neurocutaneous phenotype. Dermatol 2012; 224(1), 24-30.
5. Luna PC, Pannizardi AA, Martin, CI, Vigovich F, Casas JG, Larralde M. Papular epidermal nevus with skyline basal cell layer (PENS): three new cases and review of the literature. Pediatr Dermatol 2016; 33(3), 296-300
6. Beteta-Gorriti V, de Dios-Velázquez Á, Yuste M, Santos-Briz Á, Román-Curto C, Cañueto J. Familial papular epidermal nevus with "skyline" basal cell layer. Pediatr Dermatol, 2018;35(3), e191-e192.
7. Rizzoli L, Balestri R., Rech, G., et al. Familial papular epidermal nevus with "skyline" basal cell layer and multiple pilomatricomas: A new association?. 2018; Pediatr Dermatol, 2018;35(3), e147-e150

**Primary Author(s):**
Justin Remer MD, Brown University Warren Alpert School of Medicine Department of Dermatology, Providence VAMC

**Co-Author(s):**
Blake Friedman MD, Department of Dermatology, The Warren Alpert Medical School of Brown University; Hannah Chang BS, University of Pittsburgh School of Medicine; Lionel Bercovitch, Warren Alpert Medical School of Brown University; Leslie Robinson-Bostom MD, The Warren Alpert Medical School of Brown University

## Achenbach's Syndrome: A Case Of A Painful Blue Thumb

Patient History: A 65-year-old female, with a history of psoriatic arthritis and Raynaud's phenomenon, presented to clinic for evaluation of a tender, purple discoloration of her left thumb.

These symptoms have recurred monthly over the last two to three years. Each episode is preceded by an intense burning sensation followed by appearance of the discoloration several minutes later. The discoloration lasts for three to seven days before resolving spontaneously.

The patient has not noticed any triggers such as trauma, cold temperatures, or medications. She is not on any hormonal therapies. She does not have a history of clotting or bleeding disorders. She notes that these episodes present differently from her Raynaud's phenomenon, which has been quiescent.

A review of systems was negative for any systemic symptoms. The patient works as a veterinarian and has never been a smoker. Physical exam was notable for a well-appearing patient in no acute distress with a tender purpuric plaque on the palmar aspect of the left thumb extending onto the dorsal distal phalanx.

Pathology: Biopsy of the representative clinical lesion demonstrated dermal hemorrhage without evidence of vasculitis.

Laboratory: Initial laboratory testing showed a normal CBC with differential. BMP, LFTs, CRP, ESR, INR, PT, PTT were sent, and results are pending. An ultrasound of the left upper extremity was ordered to evaluate for venous thromboses.

Diagnosis: Achenbach's syndrome

Treatment: The disease is self-limiting and benign, so no intervention was recommended. The above work-up was ordered to rule out any concerning pathologies that would require treatment.

**References:**


1. Ada F, Kasimzade F. Analysis of 24 patients with Achenbach's syndrome. World J Clin Cases. 2019;7(10):1103-1110.
2. Ahmed Z, Elmallah A, Elnagar M, Dowdall J, Barry M, Sheehan SJ. Painful Blue Finger-Achenbach's Syndrome: Two Case Reports. EJVES Short Rep. 2018;40:1-2.
3. Takeuchi H, Uchida HA, Okuyama Y, Wada J. Acute idiopathic blue fingers: a young man with Achenbach's syndrome. BMJ Case Rep. 2016;2016:10.1136/bcr-2016-214491.
4. Suzuki J. Achenbach's Syndrome in a 30-year-old Healthy Woman. Intern Med. 2019;58(12):1807.
5. Yamada T. Achenbach's syndrome in an elderly woman. J Gen Fam Med. 2018;19(2):65-66.



**Primary Author(s):**
Yun Xue MD, Harvard Combined Dermatology Residency Training Program

**Co-Author(s):**
Thomas D. Horn, Mass General Hospital, Harvard Medical School; John Korman, Upstate Dermatology, P.A.


## Post-transplant Peripheral T-Cell Lymphoma in a Pediatric Patient

A 2 year old Caucasian male with congenital dilated cardiomyopathy status post orthotopic heart transplant and subtotal thymectomy, presented with worsening eczematous rash, diarrhea, low grade fevers, and neutropenia. A skin biopsy revealed atypical perivascular, peri-adnexal lymphoid infiltrate, consisting of medium-sized lymphocytes with highly irregular, elongated nuclei. The atypical lymphocytes demonstrated an abnormal immunophenotype with CD4 positive cells and rare CD30 positive large cells. A lymph node biopsy showed an atypical lymphoid infiltrate positive for CD3 with scattered positivity for CD30, and negative ALK-1. PAX-5 and CD-20 stains showed compressed B-cell aggregates and EBV stain was negative. The findings were consistent with post-transplant peripheral T-cell lymphoma. A CT chest showed multiple lung nodules; PET MRI showed a liver mass, lung nodules, and axillary, inguinal, and cervical lymphadenopathy.

Post-transplant lymphoproliferative disorders (PTLD) are a well-recognized complication in solid organ and hematopoietic stem cell transplant recipients. While most PTLDs are EBV positive B-cell proliferations, T-cell PTLDs are extremely rare.[1] PTLD may be associated with high morbidity and mortality.[2,3] Recent advances in medicine have led to increased awareness of PTLD and improved diagnostic tools, but the clinical and histological heterogeneity of PTLD often complicates diagnosis. In transplant patients, the cutaneous manifestations of lymphoproliferative disease may mimic other conditions such as eczematous dermatitis and graft-versus-host disease. Recalcitrance to typical treatment as well as

development of systemic signs such as adenopathy, masses, fever, pain, weight loss, or transplanted organ dysfunction should heighten suspicion for PTLD.

**References:**

1. Luskin MR, Heil DS, Tan KS, et al. The Impact of EBV Status on Characteristics and Outcomes of Posttransplantation Lymphoproliferative Disorder. Am J Transplant. 2015;15(10):2665-2673. doi:10.1111/ajt.13324.
2. Fischer A, Blanche S, Le Bidois J, et al. Anti-B-cell monoclonal antibodies in the treatment of severe B-cell lymphoproliferative syndrome following bone marrow and organ transplantation. N Engl J Med. 1991;324(21):1451-1456. doi:10.1056/NEJM199105233242102.
3. Armitage JM, Kormos RL, Stuart RS, et al. Posttransplant lymphoproliferative disease in thoracic organ transplant patients: ten years of cyclosporine-based immunosuppression. J Heart Lung Transplant. 10(6):877-86; discussion 886-7. http://www.ncbi.nlm.nih.gov/pubmed/1661607.

**Primary Author(s):**
Leah A. Cardwell, MD; Medical College of Wisconsin Affiliated Hospitals

**Co-Author(s):**
Yvonne Chiu, MD; Jacquelyn Majerowski, MD; Olayemi Sokumbi, MD, Mayo Clinic

## Scleroderma-like and ichthyosiform amyloid light chain amyloidosis

73-year-old male presented with six-months of rash and weakness. He complained of peeling skin on hands and inability to fully extend his fingers. He had asymptomatic, diffuse scaling on trunk and new leg swelling. His weakness has been gradual and started with his tongue and difficulty swallowing. He also endorses dry mouth, weight loss, and is only able to walk short distances. His exam revealed waxy keratoderma of bilateral palms with shallow fissures. There was tapering and flexion of the digits with normal nail fold capillaries. Trunk and proximal extremities with thin, plate-like scale separated with erythematous fissures. There were a few scattered echymoses on bilateral forearms. There was enlargement of the tongue and decreased oral aperture. Submandibular adenopathy was present.

A punch biopsy from the back and lateral palm revealed perivascular and dermal deposition of amorphous material that was highlighted with Congo red stain and predominantly lambda staining. Laboratory studies revealed elevated serum creatinine, with unremarkable serologies, SPEP, and inflammatory markers. Urine IFE showed monoclonal free lambda light chains. Subsequent bone marrow biopsy demonstrated 20-25% clonal plasma cells.

Diagnosis is amyloid light chain amyloidosis presenting with scleroderma-like and ichthyosiform changes. Patient treated with six cycles of cyclophosphamide, bortezomib and dexamethasone with partial response and is currently on adjuvant doxycycline. AL amyloidosis is a multisystem disease characterized by deposition of misfolded antibody components and can affect numerous organs including the skin. Ichthyosiform and scleroderm-like presentations of amyloidosis are rare but should be considered in multisystem processes.

**References:**

1. Kim KJ, et al. Ichthyosiform amyloidosis. J Dermatol. 2002 Mar;29(3):182-3.
   Sun L1, Zhang L, Hu W, Li TF, Liu S. Case report: One case of primary AL amyloidosis repeatedly misdiagnosed as scleroderma. Medicine (Baltimore). 2017 Dec;96(50):e8771.

**Primary Author(s):**
Joshua J. Clark, MD, University of Utah Department of Dermatology

**Co-Author(s):**
Jamie Zussman, University of Utah, Department of Dermatology; Marta Petersen, University of Utah school of Medicine

## 46-year-old Woman with Extensive Rock-Hard Nodules and Progressive Muscle Weakness

Background: The phenotype of nuclear Matrix Protein-2 (NXP-2) dermatomyositis has recently been described and is associated with an increased risk of calcinosis cutis, severe muscle disease, dysphagia, malignancy, and peripheral edema [1,2]. Despite the increased risk of calcinosis, patients often have minimal skin disease.

Case: A 46-year-old woman presented for evaluation of diffuse, rock-hard nodules. In 2012, she developed hip pain, weakness, and fatigue, for which she was diagnosed with osteoarthritis. In 2014, she experienced worsening muscle weakness and dysphagia, resulting in an 80-pound weight loss and a lengthy hospitalization with no clear diagnosis. Muscle enzymes were normal, and the patient lacked a cutaneous eruption. Two years later, she presented with extensive painful subcutaneous nodules. Biopsy revealed extensive dermal calcification consistent with dystrophic calcinosis cutis, and CT of the pelvis revealed prominent fascial calcifications. Dermatomyositis was suspected, and MRI of the thighs showed fascial edema bilaterally, consistent with persistent muscle disease activity despite the lack of cutaneous findings other than calcinosis. Right deltoid muscle biopsy demonstrated classic histologic features of dermatomyositis, and a myositis panel revealed anti-NXP-2 antibodies. The patient improved dramatically after initiation of pulse intravenous methylprednisolone, mycophenolate mofetil, and intravenous immunoglobulin for myositis, and colchicine and diltiazem for calcinosis.

Conclusion; Recognizing the unique phenotype of NXP-2 dermatomyositis is crucial to provide early, aggressive treatment of frequently severe muscle disease. This is particularly important given that the traditionally mild skin disease in this patient subset may impair clinicians' ability to suspect a diagnosis of dermatomyositis.

**References:**


1. Rogers, Anna, et al. "Cutaneous and systemic findings associated with nuclear matrix protein 2 antibodies in adult dermatomyositis patients." Arthritis care & research 69.12 (2017): 1909-1914.
2. Albayda, Jemima, et al. "Dermatomyositis patients with anti-nuclear matrix protein-2 autoantibodies have more edema, more severe muscle disease, and increased malignancy risk." Arthritis care & research 69.11 (2017): 1771.



**Primary Author(s):**

Sheena Desai, BS, Brigham & Women's Hospital

**Co-Author(s):**

Kelly Lo, Department of Dermatology, Brigham and Women's Hospital, Harvard Medical School; Gabriela Cobos; Avery LaChance, Brigham and Women's Hospital, Harvard Medical School; Joanie Pinard, Department of medicine, division of dermatology, Hotel-Dieu de Levis and CHU de Quebec – CHUL; Ruth Ann Vleugels


## A novel presentation of acid sphingomyelinase deficiency (Niemann-Pick disease type B) with sclerodermoid changes and angiokeratoma of Fordyce

We present a case of a 21-year-old male with acid sphingomyelinase deficiency (ASMD), also known as type B Niemann-Pick disease (NPB) who presented with progressively worsening diffuse skin thickening on his face, upper trunk and arms of several years' duration. Examination was additionally notable for numerous purple to black small papules scattered over his scrotum, buttocks and gluteal cleft clinically consistent with angiokeratomas. A skin biopsy from the upper back showed a subtle perivascular and interstitial inflammatory infiltrate with occasional eosinophils, with deeper sections revealing a sparse population of macrophages and fibroblasts with foamy cytoplasm. Within the foamy cells, there was PAS-positive diastase-resistant material compatible with sphingomyelin, also highlighted by toluidine blue staining.

ASMD is caused by deficient activity of acid sphingomyelinase, resulting in intralysosomal accumulation of sphingomyelin. Type A Niemann-Pick disease (NPA) is a rapidly progressive, neurodegenerative disorder which causes death in infancy. Patients with NPB typically lack central nervous system involvement, but have hepatosplenomegaly, pulmonary infiltration, and dyslipidemia, all of which can range from mild to severe. Skin manifestations are uncommon in all forms of ASMD. There are rare case reports of yellow-brown discoloration, papular lesions, waxy induration of the skin and xanthomas in NPA. Reports of specific skin lesions which show characteristic histologic features of ASMD, namely foamy histiocytes containing distended lysosomal bodies, are extremely rare. Our case represents the first report of ASMD presenting with sclerodermoid changes and angiokeratoma of Fordyce. To our knowledge, this also represents the first description of specific skin lesions in NPB.

**References:**
1. Crocker AC, Farber S. Niemann-Pick disease: a review of eighteen patients. Medicine (Baltimore) 1958;37:1-95.
2. Mardini MK, Gergen P, Akhtar M, Ghandour M. Niemann-Pick disease: report of a case with skin involvement. Am J Dis Child 1982;136:650-1.
3. Raddadi AA, Al Twaim AA. Type A Niemann-Pick disease. J Eur Acad Dermatol Venereol 2000;14:301-3.
4. Samuel GH, Lenna S, Bujor AM, Lafyatis R , Trojanowska M. Acid sphingomyelinase deficiency contributes to resistance of scleroderma fibroblasts to Fas-mediated apoptosis. J Dermatol Sci 2012;67:166-72.
5. Schuchman EH. The pathogenesis and treatment of acid sphingomyelinase-deficient Niemann-Pick disease. J Inherit Metab Dis 2007;30:654-63.
6. Schuchman EH, Desnick RJ. Types A and B Niemann-Pick disease. Mol Genet Metab 2017;120:27-33.
7. Sibulkin D, Olichney JJ. Juvenile xanthogranuloma in a patient with Niemann-Pick disease. Arch Dermatol 1973;108:829-31.
8. Teixeira VB, Coutinho I, Cardoso JC, Tellhechea O. Generalized lichen nitidus in a boy with Niemann-Pick disease type B. An Bras Dermatol 2013;88:977-8.
9. Toussaint M, Worret WI, Drosner M, Marquardt KH. Specific skin lesions in a patient with Niemann-Pick disease. Br J Dermatol 1994;131:895-7.
10. Wasserstein MP, Schuchman EH. Acid Sphingomyelinase Deficiency. In: M. P. Adam, H. H. Ardinger, R. A. Pagon, S. E. Wallace, L. J. H. Bean, K. Stephens, et al. editors. GeneReviews((R)). Seattle (WA)1993.

**Primary Author(s):**
Imge Hulur, MD, PhD, Montefiore Medical Center/Albert Einstein College of Medicine

**Co-Author(s):**
Yiang Hui, Memorial Sloan Kettering Cancer Center; Bijal Amin, Albert Einstein College of Medicine; Melissa Wasserstein; Diana H. Lee, Albert Einstein College of Medicine/Montefiore Medical Center

## Kaposi Sarcoma with Tripe Palm

An 89-year-old Ethiopian male presented for evaluation of chronic leg swelling and mildly pruritic rash for five years on his trunk and extremities, with asymptomatic thickening of his palms. Physical examination revealed scattered violaceous plaques on upper extremities and trunk, with bilateral lower extremity non-pitting edema and overlying verrucous, lichenified and cobblestoned plaques extending to dorsal feet. His left palm had velvety hyperkeratosis with accentuation of dermatoglyphics.

Two 4 mm punch biopsies were obtained from violaceous plaques on upper extremities. H&E showed flattened endothelial cells forming thin vascular spaces dissecting through collagen bundles, with a patchy lymphoplasmacytic infiltrate surrounding pre-existing vessels. Immunohistochemical stains were positive for CD31, CD34 and HHV-8, consistent with patch stage Kaposi sarcoma (KS). The patient additionally underwent an extensive workup including chest-x-ray, EGD, colonoscopy, and laboratory studies – all of which were negative- to rule out an underlying malignancy to explain palmar findings.

He was referred to oncology, who initiated chemotherapy with liposomal doxorubicin 20 mg/mL IV every three weeks with improvement in clinical appearance of KS lesions.

Tripe palm is a cutaneous paraneoplastic disorder most commonly associated with visceral malignancies of the lung, stomach, genitourinary system, breast and soft tissues [1,2]. Around 90% of cases of tripe palm are associated with underlying cancer and may be an initial presenting sign [2]. To our knowledge, there are no cases in the published literature of Kaposi sarcoma associated with tripe palm.

**References:**
1. Wick MR, Patterson JW. Cutaneous neoplastic syndromes. Semin Diagn Pathol. 2019 Jul;36(4):211-228.
2. Cohen, PR, Grossman, ME, et al. Tripe palms and cancer. Clinics in Dermatology. 1993 January;11(1): 165-173.

**Primary Author(s):**
Vassiliki Papastavros, MD, Howard University Hospital

**Co-Author(s):**
Ginette Okoye, MD

## Hidradenocarcinoma

A 65 year old male with a medical history of diabetes, hypertension, and hypercholesterolemia presented to a general surgery clinic with a non-tender subcutaneous mass on his right hip, measuring approximately 3 x 4cm. The lesion had enlarged over the course of several years and had also developed overlying skin color changes, prompting the patient's concern. He subsequently underwent surgical excision of the lesion, with pathology revealing hidradenocarcinoma. Sections revealed a traumatized solid and cystic proliferation of poroid cells with increased mitoses and areas of necrosis. Immunostaining revealed AE1/3 positivity throughout, and was focally positive for EMA. The excisional biopsy was followed by sentinel lymph node biopsy with no disease noted. PET/CT did not show evidence of metastasis. The patient is currently planned for Mohs microsurgery for re-excision for treatment, in lieu of a wide local excision with 3cm margins.

Hidradenocarcinoma is a rare malignant tumor which typically presents as a solitary nodule on the head, trunk, or extremity. These lesions do tend to metastasize, often involving the regional lymph nodes, bone, viscera, and skin. Immunostaining usually reveals positive AE1/AE3, CK5, CK6. Treatment has usually involved regional lymph node dissection with radical surgical excision, however Mohs micrographic surgery is increasingly being recognized as an excellent treatment modality in recent years.

**References:**

1. Tolkachjov SN, Hocker TL, Hochwalt PC, et al. Mohs micrographic surgery for the treatment of hidradenocarcinoma: the Mayo Clinic experience from 1993 to 2013. Dermatol Surg. 2015;41(2):226-31.
2. Soni A, Bansal N, Kaushal V, Chauhan AK. Current management approach to hidradenocarcinoma: a comprehensive review of the literature. Ecancermedicalscience. 2015;9:517.

**Primary Author(s):**
Sayeeda Ahsanuddin, MD, University Hospitals Cleveland Medical Center

**Co-Author(s):**
Christina Wong

## Primary cutaneous aggressive epidermotropic cutaneous T-cell lymphoma

History: A 59-year-old Caucasian woman presented with erythematous scaly plaques initially comprising 10% body surface area. Biopsy demonstrated an epidermotropic infiltrate of hyperchromatic, haloed, atypical CD3+CD4-CD8+ lymphocytes. Basilar tagging and papillary dermal fibrosis were also present. There was no lymphadenopathy and blood flow cytometry did not reveal aberrant T-cell immunophenotypes. She was diagnosed with T2N0M0B0 Stage IB CD8+ mycosis fungoides (MF). Topical corticosteroids and nbUVB phototherapy were initiated, then oral bexarotene 75mg twice daily was added for recalcitrant disease. Over the next several months, she progressed to ulcerating tumors. Repeat biopsy showed a moderately epidermotropic infiltrate of CD3+, CD4 and CD8 weak lymphocytes, which were TIA-1/granzyme/BF1+ and CD30/CD56-. Flow and imaging remained unremarkable. She was upstaged to T3N0M0B0 Stage IIB CD8+ MF and transitioned to chlorambucil. After favorable initial response, she developed diffusely distributed ulcerating tumors and superimposed polymicrobial infection. Chlorambucil was discontinued and she started antimicrobials. Following initiation of liposomal doxorubicin, she was hospitalized for rapidly worsening disease and pain. Repeat biopsy found CD3/CD8/TIA1/granzyme/BF1+ and CD4/CD30/CD56/EBER- atypical strikingly epidermotropic lymphocytes with enlarged, misfolded nuclei throughout the spinous layer.

Diagnosis: Primary cutaneous aggressive epidermotropic CD8+ cytotoxic T-cell lymphoma (PCAECTCL)

Treatment: She received two cycles of romidepsin with slight improvement and was discharged to a long-term care facility

for wound and pain management. She subsequently succumbed to pneumonia.

Discussion: PCAECTCL is a rare, aggressive cutaneous lymphoma which may initially mimic CD8+ MF. Rapid progression of ulcerations should prompt consideration of this highly morbid condition and initiation of appropriate workup and treatment.

**References:**


1. Robson A, Assaf C, Bagot M, Burg G, Calonje E, Castillo C, et al. Aggressive epidermotropic cutaneous CD8+ lymphoma: a cutaneous lymphoma with distinct clinical and pathological features. Report of an EORTC Cutaneous Lymphoma Task Force Workshop. Histopathology. 2015 Oct;67(4):425-41.
2. Kempf W, Zimmermann AK, Mitteldorf C. Cutaneous lymphomas-An update 2019. Hematol Oncol. 2019 Jun;37 Suppl 1:43-47.
3. Geller S, Myskowski PL, Pulitzer M, Horwitz SM, Moskowitz AJ. Cutaneous T-cell lymphoma (CTCL), rare subtypes: five case presentations and review of the literature. Chin Clin Oncol. 2019 Feb;8(1):5.
4. Al Aoun SM, Iqbal S, AlHalouli TM, Zaidi SZ, Motabi IH. Durable remission of a patient with primary cutaneous CD8+ aggressive epidermotropic cytotoxic T-cell lymphoma. Hematol Oncol Stem Cell Ther. 2018 Sep 28.
5. Tomasini C, Novelli M, Fanoni D, Berti EF. Erythema multiforme-like lesions in primary cutaneous aggressive cytotoxic epidermotropic CD8+ T-cell lymphoma: A diagnostic and therapeutic challenge. J Cutan Pathol. 2017 Oct;44(10):867-873.
6. Cyrenne BM, Subtil A, Girardi M, Foss F. Primary cutaneous aggressive epidermotropic cytotoxic CD8+ T-cell lymphoma: long-term remission after brentuximab vedotin. Int J Dermatol. 2017 Dec;56(12)1448-1450.
7. Guitart J, Martinex-Escala ME, Subtil A, Duvic M, Pulitzer MP, et al. Primary cutaneous aggressive epidermotropic cytotoxic T-cell lymphomas: reappraisal of a provisional entity in the 2016 WHO classification of cutaneous lymphomas. Mod Pathol. 2017 May;30(5):761-772.
8. Berti E, Tomasini D, Vermeer MH, Meijer CJ, Alessi E, Willemze R. Primary cutaneous CD8-positive epidermotropic cytotoxic T cell lymphomas. A distinct clinicopathological entity with an aggressive clinical behavior. Am J Pathol. 1999 Aug;155(2):483-92.



**Primary Author(s):**

Alexandra M Streifel, BA, University of North Dakota School of Medicine and Health Sciences

**Co-Author(s):**

Laurel Wessman, MD, University of Minnesota; Kevin Gaddis, MD, University of Minnesota Department of Dermatology; David R Pearson, MD, University of Minnesota


## Prompt identification of primary cutaneous nocardiosis utilizing immunohistochemical staining: a case report

A 72 year-old male with a history of renal transplant (maintained on mycophenolate, tacrolimus, and prednisone) sustained a laceration to the right forearm after a fall onto gravel. Three weeks later, he reported onset of a painful, pustular rash of the right extensor arm. Prior to admission, he did not respond to outpatient clindamycin or ceftriaxone. HSV/VZV PCR swabs, blood cultures, and tissue fungal stain were negative. Preliminary hematoxylin and eosin evaluation showed extensive dermal neutrophilic infiltrate. Acid-fast bacilli (AFB) culture smear showed 2+ AFB with initial concern for a rapidly growing non-tuberculosis mycobacterium. However, tissue gram and acid-fast stains showed rare, equivocal and weakly staining filamentous structures within dermal abscesses, which were highlighted and confirmed by immunohistochemical (IHC) staining. Consequently, the patient was diagnosed with primary cutaneous nocardiosis, and the antimicrobial regimen was altered, resulting in gradual clinical improvement on linezolid and amoxicillin-clavulanate.

The presented case demonstrates the diagnostic challenge of distinguishing Nocardia from mycobacteria, as both grow on the same media, show similar colony morphology, and demonstrate acid-fast staining. Unfortunately, features of Nocardia such as acid-fast staining and filamentous cell morphology can be equivocal. We utilized a mycobacterium tuberculosis IHC stain with cross-reactivity to Nocardia to rapidly confirm our suspicion. In the current case, the utilization of an IHC stain allowed for prompt presumptive identification of Nocardia (initially thought to be NTM) and subsequent timely alteration of antimicrobials prior to confirmation of Nocardia brasiliensis via culture.

**References:**

1. Biocare Medical, “Mycobacterium tuberculosis antibody,” 902-140-072817; CP140 A,C, 06/21/2017. https://biocare.net/wp-content/uploads/PDF%20Data%20Sheets/140-RUO.pdf
2. McHugh KE, Sturgis CD, Procop GW, Rhoads DD. The cytopathology of Actinomyces, Nocardia, and their mimickers. Diagn Cytopathol. 2017 Dec;45(12):1105-1115. doi: 10.1002/dc.23816. Epub 2017 Sep 9.
3. Muricy, Edna & Lemes, Romilda & Bombarda, Sidney & Ferrazoli, Lucilaine & Chimara, Erica. (2014). Differentiation between Nocardia spp. and Mycobacterium spp.: Critical aspects for Bacteriological Diagnosis. Revista do Instituto de Medicina Tropical de Sao Paulo. 56. 397-401. 10.1590/S0036-46652014000500005.
4. Queipo-Zaragozá JA, Broseta-Rico E, Alapont-Alacreu JM, Santos-Durantez M, Sánchez-Plumed J, JiménezCruz JF. Nocardial infection in immunosuppressed kidney transplant recipients. Scand J Urol Nephrol. 2004;38(2):168-73.
5. Solomon, Isaac H. MD, PhD; Johncilla, Melanie E. MD; Hornick, Jason L. MD, PhD; Milner, Danny A. Jr MD, MSc. The Utility of Immunohistochemistry in Mycobacterial Infection: A Proposal for Multimodality Testing. The American Journal of Surgical Pathology: October 2017 - Volume 41 - Issue 10 - p 1364–1370; doi:
6. 10.1097/PAS.0000000000000925 Stevens, D. (1983). Clinical and clinical laboratory aspects of nocardial infection. Journal of Hygiene, 91(3), 377-384. doi:10.1017/S0022172400060423

**Primary Author(s):**
Mark Ash, MD, MS, UNC Dermatology

**Co-Author(s):**
Carolyn Ziemer, University of North Carolina at Chapel Hill; Paul B Googe, University of North Carolina School of Medicine Dermatology Department

## Cutaneous Tuberculosis Masquerading as Sarcoid

A 20-year-old Ecuadorian male living in the United States for 5 years presented to clinic with a left-sided neck mass. It had developed over many years and would occasionally drain clear fluid. Over the past year deeper, firm, fixed nodules arose in adjacent areas. He denied fevers, cough, and weight loss. Computed tomography revealed a mass overlying the sternocleidomastoid muscle with extensive lymphadenopathy. A skin biopsy demonstrated primarily sarcoidal granulomas with negative acid-fast bacillus and fungal stains. Quantiferon gold testing was positive. Chest x-ray was clear and further work-up for sarcoidosis was negative. A sterile tissue culture later grew Mycobacterium tuberculosis and he was then diagnosed with scrofuloderma. The patient was referred to infectious disease and treated with a 6 month course of isoniazid, rifampin, pyrazinamide, ethambutol and pyridoxine.

Despite positive quantiferon gold testing, the finding of sarcoidal granulomas was confusing for the primary team. This contributed to delayed diagnosis until the sterile tissue culture resulted. As histopathologic findings can mimic other granulomatous processes, clinicians should maintain an elevated level of suspicion for cutaneous tuberculosis in the setting of subcutaneous nodules or draining lymph nodes in patients from endemic areas.

**Primary Author(s):**
Samantha Gardeen, MD, University of Minnesota

**Co-Author(s):**
Christina Boull, MD, FAAD, University of Minnesota; Alessio Giubellino, M.D., PhD, University of Minnesota

## Oh Boy! Incontinentia Pigmenti in a Male

Incontinentia pigmenti (IP) is a rare X-linked dominant genodermatosis most commonly seen in female patients. Males who inherit the deletion mutation in IKBKG (inhibitor of nuclear factor kappa B kinase subunit gamma, previously NEMO), typically die in-utero. We report a case of a newborn male who was transferred to our hospital NICU for evaluation of atypical skin rash noted at birth. Physical exam revealed erythematous thin papules some with yellow crust, coalescing into linear and whorled plaques on the abdomen, arms, chest and flank. Histopathological examination showed rare dyskeratotic cells, intraepithelial eosinophils, focal vacuolar-type interface dermatitis, and mixed inflammatory infiltrate (lymphocytes and eosinophils) within upper dermis. A diagnosis of incontientia pigmenti was made. Genetic evaluation

revealed a normal 46, XY karyotype, and gene sequencing that was negative for the common deletion in IKBKG gene and other hypomorphic mutations. Serial monthly ophthalmologic evaluations and neurologic evaluations with MRI imaging have been unrevealing. Three mechanisms have been proposed to account for males who survive IP: abnormal karyotypes, such as Klinefelter syndrome (47, XXY), hypomorphic mutations, and somatic mosaicism. Post-zygotic mutation/somatic mosaicism is the likely explanation for survival of this male patient. Less than 100 male patients with IP have been reported in the literature. Somatic mosaicism is one explanation for survival in these patients, and may allow for a presentation with fewer extracutaneous manifestations. Despite this, continued multi-disciplinary follow-up is necessary to monitor for complications that may arise later in life.

**References:**


1. Smahi A, Courtois G, Vabres P, et al; The International Incontinentia Pigmenti (IP) Consortium. Genomic rearrangement in NEMO impairs NF-κB activation and is a cause of incontinentia pigmenti. Nature. 2000;405(6785):466-472.
2. Succi IB, Rosman FC, Oliveira EF. Do you know this syndrome? An Bras Dermatol. 2011;86(3):608-610.
3. Paller, A. S., et al. "Genetic and Clinical Mosaicism in a Type of Epidermal Nevus." The New England journal of medicine 331.21 (1994): 1408-15.
4. Berlin AL, Paller AS, Chan LS. Incontinentia pigmenti: a review and update on the molecular basis of pathophysiology. J AmAcad Dermatol. 2002;47(2):169-187, quiz 188-190.
5. Carney RG Jr. Incontinentia pigmenti: a world statistical analysis. Arch Dermatol. 1976;112(4):535-542.
6. Goldberg MF. The skin is not the predominant problem in incontinentia pigmenti. Arch Dermatol. 2004;140(6):748-750.
7. Kenwrick S,Woffendin H, Jakins T, et al; International IP Consortium. Survival of male patients with incontinentia pigmenti carrying a lethal mutation can be explained by somatic mosaicism or Klinefelter syndrome. Am J Hum Genet. 2001;69(6):1210-1217.
8. Pacheco TR, LevyM, Collyer JC, et al. Incontinentia pigmenti in male patients. J AmAcad Dermatol. 2006;55(2):251-255.
9. Wang, R., et al. "Unraveling Incontinentia Pigmenti: A Comparison of Phenotype and Genotype Variants." Journal of the American Academy of Dermatology (2019) Accepted Manuscript.



**Primary Author(s):**

Katherine Burke, MD, MedStar Washington Hospital Center/Georgetown University Hospital

**Co-Author(s):**

Cynthia M DeKlotz, MD, Georgetown University School of Medicine/ MedStar Washington Hospital Center/ Georgetown University Hospital; Rachel E Maiman, MD; Helena B Pasieka, MD, MedStar Washington Hospital Center


## Ewing-like sarcoma masquerading as an epidermal inclusion cyst

A healthy 16-year-old boy was referred to dermatology for evaluation of an enlarging 'cyst' located in the mid- back. A prior ultrasound noted a 2.1 x 1.8 cm hypoechoic mass without involvement of underlying muscle, consistent with sebaceous cyst. Physical exam at the time of excision three months later was significant for a 5.5 x 6 cm firm, fixed, non-tender subcutaneous tumor without central punctum or overlying skin changes. Intraoperative findings included lipomatous appearing tissue with firm fibrotic texture and some light grey discoloration.

Histologic evaluation revealed atypical round blue cells with numerous mitotic figures and areas of necrosis. Immunohistochemical stains were positive for CD99, ERG, and DUX4. EWSR1 gene rearrangement was not detected. These combined findings were suggestive of an aggressive Ewing-like tumor with the leading differential being a CIC-DUX4 round cell sarcoma. Tissue was sent for CIC (19q13) rearrangement by FISH, as well as NexGen sequencing. Results pending at time of submission.

Ewing-like sarcoma is a rare subgroup of small round blue cell sarcomas that shares many clinical and histologic features of Ewing sarcoma but lacks its hallmark translocation. The disease occurs more frequently in young adults, preferentially on the trunk and extremities.

As dermatologists regularly treat cysts and other subcutaneous masses, it is imperative to consider malignant processes on the differential, even with reassuring imaging. Factors such as rapid growth or unexpected intraoperative findings

should prompt further evaluation, such as intraoperative pathology consult for fresh tissue samples or more detailed imaging if there is high pre-operative suspicion.

**References:**
1. Lehane F, Tsikleas G, et al. 'Cyst' on the forearm of a 28-year-old female: case report of a CIC-rearranged sarcoma. J Cutan Pathol. 2019 Feb;46:599-602.
2. Renzi S, Anderson ND, et al. Ewing-like sarcoma: an emerging family of round cell sarcomas. J Cell Physiol. 2019 Jun;234(6):7999-8007.
3. Siegele B, Roberts J, et al. DUX4 immunohistochemistry is a highly sensitive and specific marker for CIC-DUX4 fusion-positive round cell tumor. Am J Surg Pathol. 2017 Mar;41(3):423-429.

**Primary Author(s):**
Samantha Bartling, D.O., Walter Reed National Military Medical Center

**Co-Author(s):**
Jason Marquart, M.D., Walter Reed National Military Medical Center; Margaret Green, MD; Elizabeth Taylor, D.O., National Capital Consortium Walter Reed Bethesda

## IRF2BP2-NTRK1 associated cutaneous histiocytosis

A 49-year-old male with a history of double hit (MYC and BCL2) stage IV diffuse large B-cell lymphoma status-post autologous hematopoietic cell transplantation one year ago presented to the dermatology clinic with a one month history of growing, asymptomatic lesions on the skin. Skin examination revealed hundreds of yellow-orange 3-9 mm smooth papules studding his trunk, face, and upper and lower extremities. He denied any systemic symptoms. Two skin biopsies demonstrated an exuberant dermal proliferation of histiocytes, including several Touton-like multinucleated giant cells. Cholesterol clefts, necrosis, mitotic activity, and angiodestructive features were not present. Targeted next generation sequencing of the tissue using the Solid Tumor Actionable Mutation Panel (STAMP) revealed an interferon regulatory factor 2 binding protein 2 and neurotrophic receptor tyrosine kinase 1 (IRF2BP2-NTRK1) gene fusion. Labs including CBC, peripheral blood smear, CMP, SPEP and immunofixation were all within normal limits. A PET-CT scan did not show any abnormal uptake or abnormally enlarged lymph nodes. The patient was diagnosed with an IRF2BP2-NTRK1 associated cutaneous histiocytosis. The patient was referred to oncology, started on hydroxyurea 1000 mg daily, and is being considered for treatment with a targeted oral NTRK inhibitor.

**References:**
1. Emile J-F, Abla O, Fraitag S, et al. Revised classification of histiocytoses and neoplasms of the macrophage-dendritic cell lineages. Blood. 2016;127(22):2672-2681. doi:10.1182/blood-2016-01-690636.
2. Nofal A, Assaf M, Tawfik A, et al. Progressive nodular histiocytosis: a case report and literature review. Int J Dermatol. 2011;50(12):1546-1551. doi:10.1111/j.1365-4632.2011.04904.x.
3. Glavin FL, Chhatwall H, Karimi K. Progressive nodular histiocytosis: a case report with literature review, and discussion of differential diagnosis and classification. J Cutan Pathol. 2009;36(12):1286-1292. doi:10.1111/j.1600-0560.2009.01454.x.
4. Durham BH. Molecular characterization of the histiocytoses: Neoplasia of dendritic cells and macrophages. Semin Cell Dev Biol. 2019;86:62-76. doi:10.1016/J.SEMCDB.2018.03.002.
5. Durham BH, Diamond EL, Abdel-Wahab O. Histiocytic neoplasms in the era of personalized genomic medicine. Curr Opin Hematol. 2016;23(4):416-425. doi:10.1097/MOH.0000000000000256.
6. Diamond EL, Durham BH, Haroche J, et al. Diverse and Targetable Kinase Alterations Drive Histiocytic Neoplasms. Cancer Discov. 2016;6(2):154-165. doi:10.1158/2159-8290.CD-15-0913.
7. Janku F, Diamond EL, Goodman AM, et al. Molecular Profiling of Tumor Tissue and Plasma Cell-Free DNA from Patients with Non-Langerhans Cell Histiocytosis. Mol Cancer Ther. 2019;18(6):1149-1157. doi:10.1158/1535-7163.MCT-18-1244.
8. Lee LH, Gasilina A, Roychoudhury J, et al. Real-time genomic profiling of histiocytoses identifies early-kinase domain BRAF alterations while improving treatment outcomes. JCI Insight. 2017;2(3):e89473. doi:10.1172/jci.insight.89473.
9. Pinney SS, Jahan-Tigh RR, Chon S. Generalized eruptive histiocytosis associated with a novel fusion in LMNA-NTRK1. Dermatol Online J. 2016;22(8). http://www.ncbi.nlm.nih.gov/pubmed/27617936. Accessed August 27, 2019.

10. Taylor J, Pavlick D, Yoshimi A, et al. Oncogenic TRK fusions are amenable to inhibition in hematologic malignancies. J Clin Invest. 2018;128(9):3819-3825. doi:10.1172/JCI120787.

**Primary Author(s):**
Gordon Bae, MD, Stanford University

**Co-Author(s):**
Warren Chan, Stanford University, Baylor College of Medicine; Aatman Shah, Stanford University - Department of Dermatology; Ryanne Brown, Stanford University; Roberto Novoa; Bernice Kwong

## An Atypical Presentation of Hand, Foot, and Mouth Disease: Coxsackie Eruption in Areas of Pitryiasis Rubra Pilaris

A 9-year-old female with a history of pityriasis rubra pilaris (PRP), and a known variant in CARD14 [(1)], presented with a 4-day history of a pruritic vesiculopapular rash. On exam, she was noted to have numerous 4mm-1.5cm bright pink edematous papules and plaques, some with central 2-5mm vesicles or superficial erosion, confined to areas affected by PRP over the arms and legs. A punch biopsy demonstrated superficial epidermal spongiosis with ballooning, reticular degeneration, and focal necrosis, concerning for viral eruption. Bacterial culture and PCR for varicella zoster virus and herpes simplex virus were negative. Several days later, her siblings developed an exanthem, consisting of vesicles around the mouth and on the hands and feet, and were diagnosed with classic hand, foot, and mouth disease.

The diagnosis of an atypical presentation of hand, foot, and mouth disease (HFMD) in the setting of PRP was made clinically given the negative workup for other infectious etiologies, the histopathologic findings, and the temporal relationship with her siblings classic coxsackie eruptions. The patient was treated symptomatically and cleared over the following week.

In the pediatric population, the majority of atypical HFMD cases arise in areas of atopic dermatitis, a condition termed eczema coxsackium [(2)]. Coxsackie eruptions have also been documented in areas of mosaic epidermolytic ichthyosis [(3)], intertrigo [(4)], incontinentia pigmenti [(5)], and in areas of sunburn, irritant dermatitis, tinea pedis, and scars or lacerations [(2)]. To our knowledge, this is the only case of “PRP coxsackium” and highlights the spectrum of atypical HFMD.

**References:**

1. Craiglow, B. G., Boyden, L. M.,et al. CARD14-associated papulosquamous eruption: A spectrum including features of psoriasis and pityriasis rubra pilaris. Journal of the American Academy of Dermatology. 2018;79(3):e487-494.
2. Mathes EF, Oza V, Frieden IJ, et al. "Eczema coxsackium" and unusual cutaneous findings in an enterovirus outbreak. Pediatrics. 2013;132(1):e149-157.
3. Lewis S, Rico T. Coxsackie Eruption Arising in Areas of Epidermolytic Ichthyosis. Pediatric Dermatology. 2015;32(3):e132-e133.
4. Ganguly S, Kuruvila S. Eczema Coxsackium. Indian journal of dermatology. 2016;61(6):682-683.
5. Jefferson J, Grossberg A. Incontinentia Pigmenti Coxsackium. Pediatr Dermatol. 2016;33(5):e280-28

**Primary Author(s):**
Steven Lander, BA, Medical College of Wisconsin

**Co-Author(s):**
Erin Ibler, MD; Karolyn Wanat, MD, Medical College of Wisconsin; Kristen Holland, MD

## Pustular Leukocytoclastic Vasculitis Associated with Plasma Cell Dyscrasia

A 65 year-old male with a history of type II diabetes mellitus who presented for a second opinion of a generalized pruritic eruption that had been present for two years. On initial presentation at an outside dermatologist, patient had a punch biopsy of his left upper medial thigh demonstrating pustular leukocytoclastic vasculitis with a perilesional direct immunofluorescence (DIF) study that was negative for immunobullous disease. A second biopsy for H&E demonstrated

subepidermal separation with neutrophils. A repeat DIF was negative. Physical exam demonstrated violaceous infiltrative papules and plaques, some with erosions and rolled borders, on the trunk, back, buttocks, and upper and lower extremities. Patient had extensive workup for rheumatic, infectious, and malignant etiologies. Infectious testing was negative for HIV, Syphilis, histoplasmosis and blastomycosis. A skin culture grew methicillin-resistant staphylococcus aureus (MRSA). Antinuclear antibody, C-ANCA, P-ANCA, and celiac antibodies were negative. A serum-protein electrophoresis was positive for an IgG Lambda monoclonal gammopathy. He underwent oncologic workup with that included a serum multiple myeloma panel with FISH, a bone-marrow biopsy, and a CT Whole Body Bone Survey—all of which were negative. Patient was initially treated with Clindamycin (for MRSA) without improvement. High-dose prednisone and mycophenolate-mofetil (MMF) was initiated for 3 months with only slight improvement. Dapsone was added in the interim and titrated up without significant relief after 3 months of use. Colchicine was then recommended but was cost-prohibitive for the patient. Anakinra was subsequently initiated and failed to demonstrate improvement after three months of use. Given persistence of monoclonal gammopathy and skin lesions, a diagnosis of Plasma Cell Dyscrasia associated with pustular leukocytoclastic vasculitis was considered. Multiple myeloma-directed therapy was initiated with Bortezomib and methylprednisolone with dramatic improvement in skin lesions after five weeks of treatment. Patient will complete a 16-week course.

**References:**

1. Bayer-Garner, I. B., & Smoller, B. R. (2003). Leukocytoclastic (small vessel) vasculitis in multiple myeloma. Clinical and Experimental Dermatology, 28(5), 521–524. doi: 10.1046/j.1365-2230.2003.01324.x

**Primary Author(s):**

Jamal Saleh, MD, MS, Department of Dermatology/Medical College of Wisconsin

**Co-Author(s):**

Edit Olasz Harken

## Carcinoma en Cuirasse Secondary to Metastatic Squamous Cell Carcinoma in a Patient with Common Variable Immune Deficiency: A Case Report

A 43-year-old male with history of common variable immune deficiency (CVID) on intravenous immunoglobulin with recurrent infections, bronchiectasis, and dermatophytosis presented with swelling and erythema of nose for 1 week unresponsive to outpatient oral clindamycin. Exam was significant for violaceous indurated plaque of the nose. Multiple skin biopsies were nonspecific with negative stains with methenamine silver, Ziehl-Neelsen, and periodic acid-Schiff. Tissue culture did not grow bacterial, fungal, or acid-fast bacilli organisms. The patient's condition worsened, and antimicrobial coverage was expanded to include amphotericin B and acyclovir. Extensive negative infectious work-up included sputum and tissue cultures, fungal β-D glucan assay, Aspergillus and Blastomyces antigens, and herpes simplex virus polymerase chain reaction. Imaging revealed facial cellulitis, recurrent bronchiectasis, acute osteomyelitis of the hand, meningeal enhancement, cardiac valvular masses consistent with thrombi, and posterior mediastinal tissue density. Bronchoscopy was performed. Biopsy of subcarinal lymph node and bronchi demonstrated metastatic squamous cell carcinoma (SCC). Treatment was limited by critical condition and immune status. He rapidly declined and passed away.

The patient was diagnosed with metastatic SCC with carcinoma en cuirasse (CeC) of the central face. CeC is an uncommon presentation of metastatic cutaneous carcinoma, most commonly described with breast carcinoma [(1)]. Treatment emphasizes palliation and may include chemotherapy and immunotherapy [(2,3)]. While infection may be a critical driver of malignancy, this case is a reminder to maintain a broad differential in all patients, including those with CVID.

**References:**

1. Culver AL, Metter DM, Pippen JE, Jr.: Carcinoma en cuirasse. Proc (Bayl Univ Med Cent) 2019, 32(2):263-265.
2. Mortaz E, Tabarsi P, Mansouri D, et al. Cancers related to immunodeficiencies: Update and perspectives. Front Immunol. 2016;7(SEP):1-13. doi:10.3389/fimmu.2016.00365
3. Battle L, Johnson A, Wong H. Cutaneous squamous cell carcinoma in a patient with common variable immunodeficiency successfully treated with acitretin. J Am Acad Dermatol. 2017;76(6):AB91. doi:10.1016/j.jaad.2017.04.370

**Primary Author(s):**

Kathryn Lee Anderson, Wake Forest Baptist Health Department of Dermatology

**Co-Author(s):**
Rima I. Ghamrawi, Wake Forest School of Medicine; Omar P. Sangueza; Lindsay C. Strowd, Wake Forest University

## Necrotizing Sweet syndrome: a newly recognized variant presenting as a diagnostic challenge.

We present a 30-year-old female with recently diagnosed acute myeloid leukemia (AML) admitted for induction chemotherapy with a rapidly progressive painful lesion at the site of her previous Hickman catheter associated with high fevers and rigors. Exam revealed a firm, well demarcated violaceous to erythematous indurated plaque with central necrosis studded with pustules extending up the neck and into the axilla. The patient continued to spike high fevers despite persistently negative blood cultures and broad spectrum antimicrobial therapy. Histologic sections revealed a dense neutrophilic infiltrate within the dermis and subcutis with focal necrosis and karyorrhexis. Special stains for infectious organisms and lesional tissue cultures were negative. A diagnosis of necrotizing neutrophilic dermatosis (NND), also known as necrotizing Sweet syndrome, was made and the patient was started on high dose steroids with rapid resolution of her febrile episodes and clinical improvement of the lesion.

NND is a newly recognized variant of neutrophilic dermatosis seen in immunocompromised patients that clinically mimics necrotizing or angioinvasive infection, leading to a delay in diagnosis and treatment, and an increase in morbidity and mortality. Physical exam reveals indurated, erythematous plaques with violaceous borders that frequently demonstrate pathergy. NND presents with sepsis-like symptoms including high fevers, hypotension, and leukemoid reaction. Despite features of systemic infection in an immunocompromised patient, a diagnosis of NND is favored when cultures remain negative and the patient remains febrile despite broad spectrum antimicrobials. Distinction between NND and infection, which requires coordination between multiple specialties, is essential as the treatments vastly differ.

**References:**

1. Minamiyama R, Asai J, Kaneko Y, Kanehisa F, Cho Z, Takenaka H, Katoh N.Necrotizing Sweet syndrome in a patient with myelodysplastic syndrome. Clin Exp Dermatol. 2017 Jun;42(4):436-438. doi: 10.1111/ced.13088. Epub 2017 Apr 19. PubMed PMID: 28422309.
2. Sanchez IM, Lowenstein S, Johnson KA, Babik J, Haag C, Keller JJ, Ortega-Loayza AG, Cohen J, McCalmont TH, Demer AM, Mansh MD, Hylwa SA, Liu J, Shinkai K. Clinical Features of Neutrophilic Dermatosis Variants Resembling Necrotizing Fasciitis. JAMA Dermatol. 2019 Jan 1;155(1):79-84. doi: 10.1001/jamadermatol.2018.3890. PubMed PMID: 30383110; PubMed Central PMCID: PMC6439570.
3. Kim BY, Chun DI, Jeen YM, Kim HS. Necrotizing Sweet's syndrome presenting as necrotizing fasciitis with a good response to immune suppressant treatment. Int J Rheum Dis. 2017 Dec;20(12):2197-2199. doi: 10.1111/1756-185X.13155. Epub 2017 Aug 16. PubMed PMID: 28815908.

**Primary Author(s):**
Allison Weiffenbach, MD, Cleveland Clinic Foundation

**Co-Author(s):**
Jennifer Ko, M.D., Ph.D.; Carly Elston, MD, Cleveland Clinic Foundation

## A Case of CD8-Positive Granulomatous Lymphoproliferative Disorder Associated with X-Linked Agammaglobulinemia

History: A 47-year-old man presented with progressive asymptomatic multifocal erythematous to violaceous lesions for one year. Medical history was significant for X-linked agammaglobulinemia on monthly intravenous immunoglobulin. Physical exam revealed violaceous indurated papules and plaques on the face and dorsal hands and erythematous papules scattered on his trunk; the differential diagnosis included cutaneous T cell lymphoma (CTCL), granulomatous rosacea, multicentric reticulohistiocytosis, sarcoidosis, tumid lupus erythematosus, and infection.

Pathologic Findings: Punch biopsies revealed deep, nodular infiltrates of CD8/granzyme B-positive lymphocytes and

histiocytes with a CD4 to CD8 ratio of 1:10. T-cell beta and gamma gene rearrangement studies revealed clonality for beta and gamma genes in skin and blood. Blood flow cytometry showed CD8/CD57-positive large granular lymphocytes (LGL) which increased from an absolute count of 839 to 3698 cells/uL over one month. Bone marrow biopsy showed 30% involvement of these atypical T-cells. PET/CT showed mild splenomegaly and a single small cutaneous hypermetabolic focus on the upper back. A diagnosis of CD8-positive lymphoproliferative disorder with LGL leukemia was rendered.

Discussion: Granulomatous CD8-positive lymphoproliferative infiltrates have rarely been reported in patients with immunodeficiencies[1,2]. In this case, we support this association and highlight the unique finding of concurrent LGL leukemia. Treatments including methotrexate, cyclophosphamide, dexamethasone, and even stem cell transplantation historically have temporary efficacy[1-5]. The patient was started on topical pimecrolimus for his skin involvement; given his diagnosis of X-linked agammaglobulinemia, systemic immunosuppressive therapy will only be considered if he develops severe cytopenias.

**References:**


1. Gammon B, Robson A, Deonizio J, Arkin L, Guitart J. CD8(+) granulomatous cutaneous T-cell lymphoma: a potential association with immunodeficiency. J Am Acad Dermatol. 2014;71:555–60.
2. Ishida M, Hotta M, Takikita-Suzuki M, Kojima F, Okabe H. CD8-positive granulomatous mycosis fungoides: a case report with review of the literature. J Cutan Pathol. 2010;37:1072-6.
3. Mizuno K, Suzuki A. Kato N, Isei T, Okamoto H. CD8-positive granulomatous mycosis fungoides mimicking generalized granuloma annulare. J Dermatol 2012;39:1068-9.
4. Li JY, Pulitzer MP, Myskowski PL, et al. A case-control study of clinicopathologic features, prognosis, and therapeutic responses in patients with granulomatous mycosis fungoides. J Am Acad Dermatol. 2013;69(3):366-374.
5. Rozas-Munos E, Mozos A, Pujol RM et al. Cytotoxic CD8+ granulomatous cutaneous T-cell lymphoma associated with human immunodeficiency virus infection: a diagnostic challenge. Am J Dermatopathol. 2018;40(9):707-709.



**Primary Author(s):**

Leigh Hatch, BS, Morsani College of Medicine, University of South Florida

**Co-Author(s):**

Allison Weinkle, MD, University of South Florida Dermatology; Eli Morey, MD, University of South Florida Department of Dermatology and Cutaneous Surgery; John DeNigris, MD, University of South Florida Department of Dermatology and Cutaneous Surgery; Lauren Metterle, MD, University of South Florida Department of Dermatology and Cutaneous Surgery; Anna Kim, MD; Jane Messina, MD, Moffitt Cancer Center; Xiaohui Zhang, MD; Lubomir Sokol, MD, PhD; Lucia Seminario-Vidal, MD, PhD, USF


## Erythema multiforme associated with plant-induced allergic contact dermatitis in a pediatric patient

Erythema multiforme (EM) is an acute inflammatory condition presenting with characteristic target lesions on the skin and variable mucosal involvement[1]. These lesions are generally triggered by a cell-mediated response to a viral or bacterial pathogen, most commonly herpes simplex virus (HSV) or Mycoplasma pneumoniae[1,2]. EM triggered by allergic contact dermatitis is a rare occurrence[3,4]. We present herein a case of allergic contact dermatitis in a pediatric patient that led to EM. An 11-year-old boy, with no significant past medical history or history of HSV infection, presented to the emergency department (ED) with a progressive skin eruption. Five days prior, he had developed pruritic erythematous plaques with some bullous lesions, following a linear pattern, on the extensor arms and legs after exposure to several plants while playing in a forest. When he presented to the ED, the eruption had progressed into edematous erythematous papules and plaques involving his extremities, palms, upper trunk and face. Over the course of the next 24 hours, the eruption further evolved into targetoid and typical target lesions in the same distribution. No mucosal or systemic involvement was noted. A skin biopsy demonstrated vacuolar interface dermatitis and the clinicopathological correlation was suggestive of EM. The patient received a 3-week prednisone taper, which resulted in the resolution of his skin lesions. This case contributes to the literature concerning this atypical and potentially underreported complication of plant induced allergic contact dermatitis.

**References:**


1. Zoghaib S, Kechichian E, Souaid K, Soutou B, Helou J, Tomb R. Triggers, clinical manifestations, and management of pediatric erythema multiforme: A systematic review. J Am Acad Dermatol. 2019;81(3):813-822.

2. Arnold KA, Gao J, Stein SL. A review of cutaneous hypersensitivity reactions in infants: From common to concerning. Pediatr Dermatol. 2019;36(3):274-282.
3. Cohen LM, Cohen JL. Erythema multiforme associated with contact dermatitis to poison ivy: three cases and a review of the literature. Cutis. 1998;62(3):139-142.
4. Werchniak AE, Schwarzenberger K. Poison ivy: an underreported cause of erythema multiforme. J Am Acad Dermatol. 2004;51(5 Suppl):S159-160.

**Primary Author(s):**
Leila Cattelan, McGill University

**Co-Author(s):**
Hanieh Zargham; Fatemeh Jafarian, Mcgill University

## DRESS to TEN: Multiple Drug Hypersensitivity Syndrome or CMV Reactivation?

A 38-year-old female presented with facial and lip edema, non-blanching red patches and plaques involving 90% total body surface area (TBSA) following broad-spectrum antibiotics (cefepime/ceftriaxone/vancomycin/meropenem/micafungin/metronidazole) for necrotizing Klebsiella pneumonia/bacteremia in the setting of diabetic ketoacidosis and respiratory failure. Initial RegiSCAR score was 3 for possible drug reaction with eosinophilia and systemic symptoms (DRESS) with internal organ involvement and diarrhea. Skin biopsy revealed spongiosis, patchy vacuolar interface, parakeratosis mounds, superficial perivascular lymphocytic infiltrate with purpura and negative DIF. Potential culprits were discontinued. Systemic corticosteroids were initiated with antibiotics (ciprofloxacin/metronidazole/piperacillin-tazobactam/vancomycin/ceftriaxone).The eruption was resolving until 16 days later, when patient developed acute full epidermal skin sloughing over 90%TBSA. Frozen-section and tissue biopsy showed full-thickness epidermal necrosis compatible with toxic epidermal necrolysis (TEN). SCORTEN of 2 and ABCD-10 of 1 indicated 12.1% and 5.4% mortality, respectively. Cyclosporine and intravenous immune globulin were initiated. Viral work up including HHV6, EBV, HIV was negative except for CMV (5390 copies/ml). Meanwhile, her diarrhea worsened, warranting a sigmoidoscopy with biopsies showing CMV. Ganciclovir was started with initial improvement of diarrhea, however she continues to have a tumultuous hospital course. Her skin completely re-epithelialized.

Although reports of overlap exist, there are scarce reports of discrete episodes of DRESS and TEN two weeks apart within one person. Our theory is that the continuation of antibiotics with potential cross-reactivity in the acute phase of DRESS may have induced a drug-elicited syndrome with hyperresponsiveness, compounded by CMV viral reactivation, and rendering the patient more susceptible to develop distinct severe drug reactions.

**References:**
1. Kim DH, Koh YI. Comparison of diagnostic criteria and determination of prognostic factors for drug reaction with eosinophilia and systemic symptoms syndrome. Allergy, asthma & immunology research. 2014 May 1;6(3):216-21.
2. Heininger A, Jahn G, Engel C, Notheisen T, Unertl K, Hamprecht K. Human cytomegalovirus infections in nonimmunosuppressed critically ill patients. Critical care medicine. 2001 Mar 1;29(3):541-7.
3. Har-Shai L, Savin Z, Canzoniero JV. Fulminating Course of Drug Reaction with Eosinophilia and Systemic Symptoms exacerbated by a Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis overlap. The Israel Medical Association journal: IMAJ. 2016 May;18(5):304.
4. Pichler WJ, Srinoulprasert Y, Yun J, Hausmann O. Multiple drug hypersensitivity. International archives of allergy and immunology. 2017;172(3):129-38.
5. Traylen CM, Patel HR, Fondaw W, Mahatme S, Williams JF, Walker LR, Dyson OF, Arce S, Akula SM. Virus reactivation: a panoramic view in human infections. Future virology. 2011 Apr;6(4):451-63.

**Primary Author(s):**
Catherine N. Tchanque-Fossuo, MD, MS, University of New Mexico, Dpt of Dermatology

**Co-Author(s):**
Mary E. Logue, MD, University of New Mexico Department of Dermatology; Hillary R. Elwood, MD; Emily M. Altman, University of New Mexico Department of Dermatology

## Flegel's disease : A rare case report

Flegel's Disease- is a rare skin disease, characterized by small reddish brown hyperkeratotic /1-5mm papules on the lower extremeties mostly. Involvement of the ear pinnae, arms palms and soles and the oral mucosa has been reported although these reports are rare, removal of the scales reveals a bright red base, often with pin point bleeding. This disease is commonly present in Caucasian patients between age group of 30 years to 60 years. No sex predilection is seen

I hereby present a case of Indian patient 41 yr male married patient with complain of gradually increasing asymptomatic skin lesions all over the body for last 4 years. On examination multiple tiny discrete, erythematous, scaly follicular popular bilaterally symmetrical lesions were present including his face, ear pinnae and genitals which is a rare presentation, few lesions on trunk, abdomen, palms and soles as well. The lesions on dorsum of the hand and foot are very hyperkeratotic and dense, patient had taken treatment in the past, but no improvement.

HP study shows follicular infundibular hyperplasia with broad keratotic plugs. The upper dermis is fibrotic and there are many scattered melonophages with few lymphocytes. Granular layer is absent.

His complete blood count, blood sugar level, thyroid function, LFT, lipid profile and X ray chest are normal.

Patient is being treated with oral Acetretin (25mg)and topical 5 flurouracil topically along with emollients and the lesions are showing improvement.

**References:**


1. Flegel H. Hyperkeratosis lenticularis perstans. Hautarzt 1958;9:363-4. Back to cited text no. 1 [PUBMED]
2. Frenk E, Tapernoux B. Hyperkeratosis lenticularis perstans (Flegel). An autosomal dominant skin disease due to lack of a keratinocyte organelle. Humangenetik 1974;24:151-3. Back to cited text no. 2 [PUBMED]
3. Bean SF. The genetics of hyperkeratosis lenticularis perstans. Arch Dermatol 1972;106:72. Back to cited text no. 3 [PUBMED]
4. Humphrey S, Crawford RI, Au S. Long-standing spiny papules on the lower extremities. Flegel disease, or hyperkeratosis lenticularis perstans (HLP). Arch Dermatol 2008;144:1509-14. Back to cited text no. 4 [PUBMED]
5. Li TH, Hsu CK, Chiu HC, Chang CH. Multiple asymptomatic hyperkeratotic papules on the lower part of the legs. Hyperkeratosis lenticularis perstans (HLP) (Flegel disease). Arch Dermatol 1997;133:910-1. Back to cited text no. 5 [PUBMED]
6. Miljkovic J. An unusual generalized form of hyperkeratosis lenticularis perstans (Flegel's disease). Wien Klin Wochenschr 2004;116:78-80. Back to cited text no. 6
7. Miranda-Romero A, Sanchez SP, Bajo del Pozo C, Martinez FM, Esquivias GJ, Garcia MM. Unilateral hyperkeratosis lenticulris perstans (Flegel's disease). J Am Acad Dermatol 1998;39:655-7. Back to cited text no. 7
8. Miller MK, Naik NS, Nousari CH, Friedman RJ, Heilman ER. Degenerative diseases and perforating disorders. In: Elder DE, editor. Lever's Histopathology of the skin,



**Primary Author(s):**

Dr Soma Sarkar MBBS MD, Dr Soma's Dermatology and Aesthetic Clinic


## A rare presentation of Otic Lichen Planus

Lichen planus (LP) is an inflammatory cutaneous condition occurring in about 1% of adults. Otic involvement is rare and has been documented in less than 30 cases to date. We present a case of suspected otic lichen planus in a 65-year-old Caucasian female with unilateral hearing loss and lichen planopilaris (LPP) of the scalp. The patient noted hearing loss for several years that coincided with non-scalp and scalp hair loss associated with pain and pruritus. On physical exam, loss of follicular ostia and perifollicular erythema and scaling was observed on the frontal vertex scalp with preservation of the anterior hairline. Histopathology showed focal perifollicular myxoid fibrosis, perivascular lymphoplasmacytic infiltrate and CD3+ T-cell lymphocytes within the follicular epithelium consistent with lichen planopilaris. The diagnosis of otic lichen

planus, often delayed or misdiagnosed due to its extreme rarity, can be made clinically with hearing loss observed in the presence of LP. Hearing loss in these patients is more commonly conductive from tympanic membrane thickening and external auditory canal stenosis. It can be unilateral or bilateral and often is associated with otorrhea, plugging and pruritus. To our knowledge, this is the first case of hearing loss in a patient with LPP and we encourage clinicians to consider otic lichen planus as a diagnosis when treating patients with concurrent LP and hearing loss.

**References:**


1. Sartori-Valinotti JC, Bruce AJ, Krotova Khan Y, Beatty CW. A 10-year review of otic lichen planus: the Mayo Clinic experience. JAMA Dermatol. 2013;149(9):1082-1086. doi:10.1001/jamadermatol.2013.4711
2. Košec A, Kostić M, Ajduk J, Ries M. Hypertrophic recurring lichen planus of the external auditory canal. European Annals of Otorhinolaryngology, Head and Neck Diseases. 2019;136(2):123-126. doi:10.1016/j.anorl.2017.12.013



**Primary Author(s):**

Erinolaoluwa F. Araoye, BS, Department of Dermatology, Johns Hopkins School of Medicine

**Co-Author(s):**

Crystal U. Aguh, MD, Johns Hopkins School of Medicine


## Disseminated Strongyloidiasis Presenting with Cutaneous "Thumbprint" Purpura and Petechiae

Strongyloides stercoralis is an intestinal nematode that often presents with asymptomatic infection in healthy human hosts. Because of the potential opportunistic behavior of this parasite, immunocompromised patients may develop fatal disseminated infections. Early recognition of disseminated infection is imperative as it has been reported to be associated with a 70-90% mortality rate.

We report a case of “thumbprint” purpura and petechiae as a cutaneous manifestation of disseminated Strongylodiasis in an immunocompromised adult patient. An 80-year-old woman with a history of Epidermolysis Bullosa Aquisita (EBA) on immunosuppressive therapy with methotrexate and systemic corticosteroids presented to the hospital with a two-week history of profuse diarrhea, nausea, vomiting, and dyspnea. Dermatology was consulted for further management of the patient’s underlying EBA and evaluation of new onset petechiae and purpura on her abdomen. Physical examination revealed diffuse petechiae and “thumbprint” purpura on the patient’s abdomen and periumbilical area. A stool culture obtained demonstrated the presence of Strongyloides stercoralis. Chest x-ray demonstrated extensive bilateral pulmonary infiltrates. Biopsies of the purpura on the abdomen demonstrated multiple structures consistent with nematode larvae present throughout the dermis, a mild perivascular lymphohistiocytic infiltrate, extravasated erythrocytes in the papillary dermis, and focal blood vessels with organizing thrombi in the mid dermis. The patient was started oral ivermectin, but she expired four days later due to respiratory failure from presumed disseminated pulmonary involvement.

Early recognition of “thumbprint” purpura and petechiae in immunocompromised patients is imperative due to the potential risk of a fatal outcome in disseminated Strongyloidiasis.

**References:**


1. Maher, N, et al. “Periumbilical Thumbprint Parasitic Purpura: A Highly Fatal Sign in Disseminated Strongyloides Infection That May Mimic Vasculitis Clinically.” Journal of the American Academy of Dermatology, vol. 72, no. 5, 2015, doi:10.1016/j.jaad.2015.02.532.
2. von Kuster, LC, et al. “Cutaneous Manifestations of Strongyloidiasis.” Archives of Dermatology, vol. 124, no. 12, 1988, pp. 1826–1830., doi:10.1001/archderm.124.12.1826.
3. Ly, Micki N, et al. “Cutaneous Strongyloides Stercoralis Infection: an Unusual Presentation.” Journal of the American Academy of Dermatology, vol. 49, no. 2, 2003, pp. 157–160., doi:10.1067/mjd.2003.338.
4. Gordon, Steven M., et al. “Disseminated Strongyloidiasis with Cutaneous Manifestations in an Immunocompromised Host.” Journal of the American Academy of Dermatology, vol. 31, no. 2, 1994, pp. 255–259., doi:10.1016/s0190-9622(94)70158-x.



**Primary Author(s):**

Brandon M. Basehore, DO, Broward Health Medical Center

**Co-Author(s):**
Roxanna Arakozie, DO; Jaclyn Smith, MD, Broward Health Dermatology

## A Rare Case of Mucoepidermoid Carcinoma with Cutaneous Involvement

Background: Mucoepidermoid carcinoma (MEC) is the most common salivary gland malignancy, typically arising from the parotid or minor salivary glands.

Case presentation: A 21-year-old female presented to the dermatology clinic with a rapidly growing, ulcerating, and bleeding left postauricular lesion. Five months prior to the visit, a lesion was excised at the same site with pathology showing benign branchial cleft sinus. In the 2 months prior to presentation, the lesion rapidly regrew. Physical exam showed a friable erythematous nodule with collarette of skin and induration at the base of the lesion. Shave biopsy and microscopic examination showed an infiltrative neoplasm with a solid and cystic component, consistent with intermediate grade MEC. Diagnosis was confirmed by positive MAML2 (11q21) fusion gene testing. The tumor was surgically excised, and the patient received six weeks of adjuvant radiation therapy.

Discussion: Clinically, MEC may have cystic, solid or infiltrative growth patterns, which may appear similar to common primary cutaneous lesions, and make diagnosis particularly challenging for dermatologists. The diagnosis of benign cyst upon initial presentation is a common diagnostic pitfall.[1-2] The rapid growth after previous surgical procedure can mimic a pyogenic granuloma. Rather than a mass limited to the salivary glands seen in typical MECs, the patient presented with cutaneous clinical presentations. Rarely, MEC may have skin involvement due to primary MEC, metastasis, or direct extension.[3-4] This clinical manifestation of mucoepidermoid carcinoma demonstrates the varying growth patterns of MEC and the importance of considering MEC in the differential for periauricular lesions.

**References:**

1. Shinkuma S, Kodama K, Yaosaka M, Tomita Y, Sasaki M, Somekawa Y. Mucoepidermoid carcinoma with cutaneous infiltration similar to a subcutaneous cystic tumour. Clinical and Experimental Dermatology. 2009;34(7).
2. Lehmer LM, Ragsdale BD, Crawford RI, Bukachevsky R, Hannah LA. Mucoepidermoid carcinoma of the parotid presenting as periauricular cystic nodules: a series of four cases. Journal of Cutaneous Pathology. 2012;39(7):712-717.
3. Lopez V, Rubio M, Santonja N, Jorda E. Primary cutaneous mucoepidermoid carcinoma. American Journal of Dermatopathology. 2010;32(6):618-620.
4. Zhago G, Chang O, Streidl J, Bhrany A, Garton K, McCalmon TH, Swanson PE, Argenyi Z, Shinohara MM. Cutaneous involvement by nasal mucoepidermoid carcinoma: The tip of the iceberg phenomenon. Journal of Cutaneous Pathology. 2017;44(2):113-117.

**Primary Author(s):**
Jennifer Tran, BA, University of Wisconsin School of Medicine and Public Health

**Co-Author(s):**
Margo J. Reeder, University of Wisconsin School of Medicine and Public Health

## Subcutaneous Panniculitis-like T-cell Lymphoma: Alpha-Beta Subtype with Associated Hemophagocytic Lymphohistiocytosis

Patient History: A 61 year-old gentleman with a history of thyroid carcinoma presented to our clinic with one year history of fevers, weight loss, fatigue, and development of firm, tender skin lesions on the upper and lower extremities. On exam, the patient had scattered mobile subcutaneous nodules on his bilateral arms, legs, and buttocks, as well as superficial edematous plaques with peau d'orange changes.

Pathology: A biopsy taken from a lesion on the right buttock demonstrated atypical cells rimming the adipocyte spaces. Immunohistochemical stains showed cytologically atypical proliferation of CD3+, CD8+, CD2+, granzyme+, BetaF1+,

CD56-, CD5- T-cells. Some large atypical cells also stained CD30+, and there were also intermixed CD68+ histiocytes present. These findings were most consistent with subcutaneous panniculitis-like T-cell lymphoma.

Laboratory and Imaging: Labs were notable for elevated LDH (303 u/L), elevated ferritin (1534 ug/L), normal LFTs, and mild leukocytosis in the setting of prednisone use. PET/CT demonstrated subcutaneous foci, as well as FDG-avid retroperitoneal, mesenteric, and pelvic nodes suspicious for nodal involvement.

Diagnosis: Subcutaneous panniculitis-like T-cell lymphoma (SPTCL), alpha-beta subtype

Treatment: SPTCL is a rare disease, and hemophagocytic lymphohistiocytosis (HLH) is typically associated with the more aggressive primary cutaneous gamma-delta T-cell lymphoma, rather than alpha-beta SPTCL.[1] Our patient was primary refractory to CHOEP with etoposide, brentuximab, and romidepsin. His B symptoms (with labs concerning for HLH) were treated with steroids. At our last meeting, trial options were discussed, including potential allogenic stem cell transplant if remission is achieved.

**References:**

1. Willemze R, Jansen PM, Cerroni L, et al. Subcutaneous panniculitis-like T-cell lymphoma: definition, classification, and prognostic factors: an EORTC Cutaneous Lymphoma Group Study of 83 cases. Blood. 2008;111(2):838-845.

**Primary Author(s):**
Whitney T. Gao, BA, UT Southwestern Medical Center

**Co-Author(s):**
Jeffrey A. Barnes, MD, PhD, Massachusetts General Hospital Cancer Center; Lyn M. Duncan, MD, Mass General Hospital/Harvard; Steven T. Chen, MD, MPH, MS-HPEd, Harvard/Massachusetts general hospital

## A Case of Primary Cutaneous Gamma/Delta T-cell Lymphoma Masquerading as Lupus Erythematosus Panniculitis

A 52 year-old Caucasian woman with a three-year history of lupus erythematosus panniculitis (LEP) presented with a two-week history of fever, fatigue, joint pain, and new subcutaneous nodules. Her LEP had previously been refractory to treatment with oral corticosteroids, methotrexate, and mycophenolate mofetil.

On her bilateral upper and lower extremities, there were numerous, tender, subcutaneous nodules with overlying erythema and scale, some of which were ulcerated with necrotic centers. Punch biopsies of two lesions revealed atypical mononuclear cells infiltrating the subcutaneous fat with significant CD3 and CD56 staining, mild loss of CD5 and CD7, and negative staining for beta F1. TCR gene rearrangement and flow cytometry demonstrated clonal population of CD56+ gamma/delta T cell population confirming diagnosis of primary cutaneous gamma/delta T-cell lymphoma (PCGD-TCL).

PCGD-TCL is a rare lymphoid tumor with an aggressive course. Given its rarity and overlapping features with many rheumatologic diseases like LEP, diagnosis of PCGD-TCL can be challenging. Emerging literature have described indolent cases of PCGD-TCL, suggesting PCGD-TCL as more heterogenous than previously thought. Therefore, it is unclear if our patient's LEP diagnosis represented an indolent form of PCGD-TCL. One explanation is her LEP-like presentation resembled atypical lymphocytic lobular panniculitis (ALLP). ALLP is thought to be a pre-lymphomatous state with a waxing-waning phenomenon that may progress to PCGD-TCL. While not widely recognized, considerations of borderline pathologies like ALLP can help guide clinicians in management and preventing future complications. The patient is currently being treated with three cycles of cyclophosphamide, doxorubicin, etoposide, vincristine, and prednisone (CHOEP) chemotherapy.

**References:**

1. Guitart, J, Weisenburger DD, Subtil A, et al. Cutaneous γδ T-cell Lymphomas: a spectrum of presentations with overlap with other cytotoxic lymphomas. The American Journal of Surgical Pathology 2012; 36(11):1656-1665.
2. Lin Yi, Qun S, Wenjie Z, et al. The presenting manifestations of subcutaneous panniculitis-like T-cell lymphoma and T-cell lymphoma and cutaneous γδ T-cell lymphoma may mimic those of rheumatic diseases: a report of 11 cases. Clinical Rheumatology 2013; 32(8):1169-1175.

3. Magro CM, Wang X. Indolent primary cutaneous γ/δ T-cell lymphoma localized to the subcutaneous panniculus and its association with atypical lymphocytic lobular panniculitis. American Journal of Clinical Pathology 2012; 138(1):50-56.
4. Arps DP, Patel RM. Lupus Profundus (Panniculitis): A Potential Mimic of Subcutaneous Panniculitis-like T-cell lymphoma. Archives of Pathology 2013; 137(9):1211-1215.

**Primary Author(s):**
Jeffery Z Hu, BS, Case Western Reserve University School of Medicine

**Co-Author(s):**
Margaret Hammond, Case Western Reserve University/University Hospitals Cleveland Medical Center; Kord Honda

## Acquired Perforating Disorder occurring as a sequela of zinc supplementation in a patient with Hidradenitis Suppurative

A 44 year-old female with history of gastric bypass surgery and Hidradenitis Suppurativa (HS) presented to the hospital with pain from refractory HS and slightly pruritic new cutaneous papules for 1 month. Prior treatment for her HS included Humira 40mg every week, Spironolactone 200mg daily, Metformin 1000mg daily and Zinc gluconate 90mg daily. On examination she had Hurley stage 3 HS with multiple draining purple-brown cribiform plaques and draining papulonodules with tract formation of the inguinal folds, pannus and perianal skin. On her arms and legs she had approximately 30 5-8mm brown papules with central slight hyperkeratotic core. Labs showed a white count of 9.4, hemoglobin of 7.1 (MCV 102) and otherwise normal basic chemistry. Given the association of zinc supplementation and copper deficiency, copper level was checked and was 28 (reference range 70-175). Biopsy of an arm lesion was suggestive of reactive perforating dermatosis with a keratotic crust with basophilic debris and superficial erosion. Vertically oriented fragments of collagen were noted to cross the epidermis. Trichome and Elastin Von Gieson stain did not show transepidermal elimination of collagen fibers (in the evaluated sections) but showed transmigration of elastic fibers into the epidermis. Although we do not classically associate copper deficiency with acquired perforating disorders (APD), copper metabolism is implicated in the pathogenesis. The drug penicillamine, used to treat Wilson's disease, disrupts copper-dependent lysl oxidase is associated with elastosis perforans serpiginosa, a form of APD where elastin is eliminated transepidermally. Other common associations of APD include renal disease, diabetes mellitus, systemic lymphomas. Our patient's HS symptoms were improved with Infliximab. Her APD and anemia improved with copper supplementation and she was symptomatically relieved by fluocinonide 0.05% ointment twice a day.

**References:**
1. Rapini, R. Perforating Diseases. Bolognia, J (3rd edition). Dermatology. 1599-1605. [Philadelphia] : Elsevier Saunders
2. Saray Y, Seckin D, Bilezikci B. Acquired perforating dermatoses: clinicopathological features in twenty-two cases. J Eur Acad Dermatol Venereol. 2006; 20:679–88.

**Primary Author(s):**
Lida Zheng, MD, Northwestern University

**Co-Author(s):**
Maria Colavincenzo, Northwestern; Lauren Guggina, Northwestern

## Multiple eccrine angiomatous hamartomas in an adult

Introduction: Eccrine angiomatous hamartoma (EAH) is a rare benign tumor characterized by eccrine and vascular proliferation in the dermis. EAH typically presents in childhood on extremities but can be seen on other parts of the body including face, neck, and trunk. Males and females can be affected equally. EAH can asymptomatic or can be associated with pain or hyperhidrosis (from the eccrine proliferation).

Patient History: We present a 54-year-old male with a history of multiple atypical nevi who presented with flesh-colored non-tender papules on his PIP joints bilaterally. Initial onset, two years prior, was of a single papule on his right index finger, before evolving to involve the right middle and fifth finger, as well as the left index, middle, and fourth finger. The papules were asymptomatic, without joint swelling, and without involvement of other part of the body.

Laboratory Data: Hand X-rays showed abnormalities. Sedimentation rate, rheumatoid factor, and normal uric acid were within normal limits. Anti-nuclear Antibody titer was 1:160.

Biopsies: Histopathology from punch biopsy of right 5th finger showed a collection of eccrine glands and vessels of various size. No granulomatous or histiocytic infiltrate is noted.

Diagnosis: Taking the clinical presentation, histological findings, and laboratory data the diagnosis of eccrine angiomatous hamartoma was made.

Treatment: Given the patient's asymptomatic course no treatment was warranted, although analgesics for pain, Botox for hyperhidrosis, or surgical excision can be considered for symptomatic eccrine angiomatous hamartomas.

**References:**


1. Felgueiras J, del Pozo J, Sacristan F, Bonet Mdel M. Eccrine angiomatous hamartoma: successful treatment with pulsed dual-wavelength sequential 595- and 1,064-nm laser. Dermatol Surg. 2015;41(3):428-430.
2. Lin YT, Chen CM, Yang CH, Chuang YH. Eccrine angiomatous hamartoma: a retrospective study of 15 cases. Chang Gung Med J. 2012;35(2):167-177.
3. Patterson AT, Kumar MG, Bayliss SJ, Witman PM, Dehner LP, Gru AA. Eccrine Angiomatous Hamartoma: A Clinicopathologic Review of 18 Cases. Am J Dermatopathol. 2016;38(6):413-417.
4. Sanusi T, Li Y, Sun L, Wang C, Zhou Y, Huang C. Eccrine Angiomatous Hamartoma: A Clinicopathological Study of 26 Cases. Dermatology. 2015;231(1):63-69.
5. Smith SD, DiCaudo DJ, Price HN, Andrews ID. Congenital eccrine angiomatous hamartoma: Expanding the morphologic presentation and a review of the literature. Pediatr Dermatol. 2019.



**Primary Author(s):**

Martin Mike Nunez, MD, Duke University Department of Dermatology

**Co-Author(s):**

Martin Michael Nunez, M.D., Duke University Department of Dermatology; John Murray, M.D., Duke University; Andrew Dunn, M.D., Duke University


## BAP1 Tumor Predisposition Syndrome - A Case Presenting as Basal Cell Nevus Syndrome

Patient History: A 59 year old female presented to our clinic with a diagnosis of suspected basal cell nevus syndrome (BCNS) from an outside institution, with a history of more than 70 basal cell carcinomas beginning at age 23. She noted a slowly enlarging, but otherwise asymptomatic lesion of her left zygoma which she felt to be different from her previous basal cell carcinomas. She denied other features of BCNS including odontogenic keratocyts, palmar-plantar pits, or known skeletal abnormalities. Family history was significant for her father having over 50 basal cell carcinomas, renal cancer, and melanoma.

Biopsies: Histopathologic examination of the lesion of the left zygoma revealed a biphenotypic proliferation of melanocytes. The dermal component was composed of two populations of melanocytes. The first displayed bland nevocellular melanocytes arranged as nests and cords which showed maturation with depth. The second was composed of large epithelioid melanocytes with oval nuclei and well-defined cytoplasmic borders. A rare mitotic figure was observed.

Laboratory Data: Molecular genetic testing was positive for a heterozygous pathogenic mutation in BAP1 and negative for BCNS (PTCH and SUFU genes).

Diagnosis: BRCA1-associated protein 1 (BAP1)-inactivated melanocytic tumor in a patient with BAP1 tumor predisposition syndrome.

Treatment: The patient was prescribed vismodegib with acetylcarnitine for myalgia and niacinamide for skin cancer chemoprophylaxis. She was referred for surveillance in accordance with the presently available literature for associated

uveal melanoma, malignant mesothelioma, and clear cell renal carcinoma.

**References:**


1. Pilarski R, Rai K, Cebulla C, Abdel-Rahman M. BAP1 Tumor Predisposition Syndrome. 2016 Oct 13. In: Adam MP, Ardinger HH, Pagon RA, Wallace SE, Bean LJH, Stephens K, Amemiya A, editors. GeneReviews® [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2019. Available from http://www.ncbi.nlm.nih.gov/books/NBK390611/ PubMed PMID: 27748099.
2. Haugh AM, Njauw CN, Bubley JA, Verzì AE, Zhang B, Kudalkar E, VandenBoom T, Walton K, Swick BL, Kumar R, Rana HQ, Cochrane S, McCormick SR, Shea CR, Tsao H, Gerami P. Genotypic and Phenotypic Features of BAP1 Cancer Syndrome: A Report of 8 New Families and Review of Cases in the Literature. JAMA Dermatol. 2017 Oct 1;153(10):999-1006. doi: 10.1001/jamadermatol.2017.2330. Review. PubMed PMID: 28793149



**Primary Author(s):**

Kelli Bryant, MD, University of Missouri - Columbia


## Juvenile Pityriasis Rubra Pilaris: A Rare Papulosquamous Entity

Pityriasis rubra pilaris (PRP) is a rare papulosquamous inflammatory dermatosis with significant clinical heterogeneity. Given the unclear pathogenesis and paucity of clinical evidence, the diagnosis and management represent a challenge. The juvenile variants are even rarer and more obscure. We present a case of type IV circumscribed juvenile PRP, which commonly affects prepubertal children. A 6-month-old healthy African American boy presented with a one-month history of an asymptomatic dermatitis affecting his neck, arms, elbows, knees, hands and feet. He had previously been treated with hydrocortisone for presumed eczema without improvement. Examination was significant for several well-circumscribed, hypopigmented, and scaly hyperkeratotic plaques on his posterior neck, lateral forearms, elbows, knees, ankles and dorsal hands and feet. Thickening and superficial desquamation were also noted on both palms. Clinically, the patient's presentation was concerning for PRP, psoriasis, or ichthyosis. A biopsy demonstrated alternating orthokeratosis and parakeratosis in a checkerboard pattern with psoriasiform acanthosis and hypergranulosis, leading to a diagnosis of PRP. Treatment with topical retinoids was initiated with a plan to transition to oral retinoids or phosphodiesterase inhibitors if needed. Type IV PRP is characterized by focal involvement of the elbows, knees, ankles, and dorsal hands and feet in prepubertal children. Follicular papules with central keratotic plugs coalesce to well-defined, scaly, erythematous plaques at these sites. Waxy orange-red palmoplantar keratoderma may also be seen. The disease course is highly variable. Initial therapy commonly involves oral retinoids or methotrexate. Additional therapeutic options include topical retinoids, vitamin D analogs, topical corticosteroids, and modified Goeckerman regimen.

**References:**


1. Bragg J, et al. Pityriasis rubra pilaris, type IV. Dermatol Online J. 2005 Dec 30;11(4):14.
2. Cole D, et al. Rapid Response of Pityriasis Rubra Pilaris with Psoriasis Overlap to Secukinumab. Br J Dermatol. 2019.



**Primary Author(s):**

Rasnik K. Singh, MD, Henry Ford Health System

**Co-Author(s):**

Haowei Han, BS, Peconic BAy Medical Center; Tor Shwayder, MD, Henry Ford Hospital Dermatology


## Insulin-Derived Nodular Amyloidosis

A 55-year-old African American woman with history of endometrial adenocarcinoma s/p hysterectomy and insulin-dependent type II diabetes mellitus presented with an exquisitely tender hyperpigmented indurated plaque on the right lower abdomen. Therapeutic interventions tried and failed included clobetasol 0.05% ointment, doxycycline 100 mg BID, and I&D.

MRI pelvis +/- contrast demonstrated a nonspecific subcutaneous lesion without significant fluid component with the possibility of abdominal wall scar endometrioma given her prior hysterectomy. Tissue culture (fungal, bacterial, AFB) was negative. Punch biopsy revealed nodular amyloidosis with positive insulin stain and Congo red birefringence.

The patient was advised to rotate insulin injection sites. The abdominal lesion improved with no evidence of infection.

Insulin is a well-known amyloidogenic protein capable of causing iatrogenic nodular amyloidosis. It is well known that insulin injections in diabetic patients are associated with cutaneous changes, most commonly lipoatrophy and lipohypertrophy. However, nodular insulin-derived amyloidosis (AIns) is underdiagnosed. The pathogenesis is not yet completely understood. A number of factors might accelerate insulin-derived amyloidogenesis, including insulin's innate amyloidogenic structure, the acidic environment found in scar tissue, high concentrations of insulin in one site over a long time, and continuous trauma. Dermatologists should be aware of this condition as the presence of nodular AIns can alter the absorption and function of insulin, leading to insulin resistance and poor glucose control. Recognition of this condition is also important in order to avoid the erroneous diagnosis of systemic amyloidosis, which can often mimic clinical symptoms seen in long-term diabetics (eg neuropathy, hypertrophic cardiomegaly, proteinuria).

**References:**


1. Bernárdez C et al. Nodular amyloidosis at the sites of insulin injections. J Cutan Pathol 2015; 42: 496-502.
2. D´Souza A et al. Localized insulin-derived amyloidosis: a potential pitfall in the diagnosis of systemic amyloidosis by fat aspirate. Am J Hematol 2012; 87: e131.
3. Damm F et al. Localized insulin-dependent amyloidosis with scar-tissue formation. J Am Acad Dermatol 2014; 71: e160.



**Primary Author(s):**
Nayha Patel, MS, Henry Ford Hospital

**Co-Author(s):**
Chelsea Fidai, MD MS; Ben J. Friedman, MD; Henry W. Lim, MD


## Aggressive Extranodal NK/T-Cell Lymphoma, Nasal Type, Presenting as Purpuric Nodules on the Lower Leg

A 53 year-old male with a history of ESRD on hemodialysis presented with a five-day history of enlarging mildly tender purpuric subcutaneous nodules on his left shin. Tissue culture was negative, but punch biopsy revealed Extranodal NK/T-cell Lymphoma, "Nasal Type," which is a rare, aggressive lymphoma with an unclear, but frequent, association with EBV. Prognosis is poor, often with <50% survival rates, but some studies suggest better prognosis for "Nasal Type" presenting in a primary cutaneous non-nasal location. Initial PET/CT scan revealed no extracutaneous spread despite the patient developing extensive local tissue necrosis requiring debridement and wound care (Hydrogel covered by Hydrofera Blue). High expression of MDR P-glycoprotein on NK cells renders classic anthracycline therapy (ex- CHOP) ineffective, and thus the most common treatment regimen is called SMILE. SMILE includes dexamethasone, methotrexate and ifosfamide (P-glycoprotein-independent) plus L-asparaginase (key treatment for refractory disease given the inability of tumor cells to synthesize L-asparagine) and etoposide (to address associated hemophagocytic syndrome). However, given that the patient is on hemodialysis, an alternative regimen was started consisting of repeating 3-week cycles of Gemcitabine & Cisplatin (Days 1,3,5,8 with a break on Days 9-21) for the first cycle and subsequent cycles substituting pegylated L-asparaginase on Day 5. Unfortunately, after only two cycles, this patient had to discontinue L-asparaginase given medication-related acute liver failure. Last PET/CT showed disease remains limited to the skin and subcutis, but with spread to the abdomen, highlighting the rapidly progressive nature of this rare lymphoma that started in the skin.

**References:**


1. Haverkos BM, Pan Z, Gru AA, Freud AG, Rabinovitch R, Xu-Welliver M, Otto B, Barrionuevo C, Baiocchi RA, Rochford R, Porcu P. Extranodal NK/T Cell Lymphoma, Nasal Type (ENKTL-NT): An Update on Epidemiology, Clinical Presentation, and Natural History in North American and European Cases. Curr Hematol Malig Rep. 2016 Dec;11(6):514-527. Review.
2. Yong W. Clinical study of l-asparaginase in the treatment of extranodal NK/T-cell lymphoma, nasal type. Hematol Oncol. 2016 Jun;34(2):61-8. Review.
3. Lee WJ, Jung JM, Won CH, Chang SE, Choi JH, Chan Moon K, Park CS, Huh J, Lee MW. Cutaneous extranodal natural killer/T-cell lymphoma: a comparative clinicohistopathologic and survival outcome analysis of 45 cases according to the primary tumor site. J Am Acad Dermatol. 2014 Jun;70(6):1002-9.

4. Lim SH, Hong JY, Lim ST, Hong H, Arnoud J, Zhao W, Yoon DH, Tang T, Cho J, Park S, Ko YH, Kim SJ, Suh C, Lin T, Kim WS. Beyond first-line non-anthracycline-based chemotherapy for extranodal NK/T-cell lymphoma: clinical outcome and current perspectives on salvage therapy for patients after first relapse and progression of disease. Ann Oncol. 2017 Sep 1;28(9):2199-2205.
5. Kim SJ, Yoon SE, Kim WS. Treatment of localized extranodal NK/T cell lymphoma, nasal type: a systematic review. J Hematol Oncol. 2018 Dec 20;11(1):140. Review.
6. Yamaguchi M, Suzuki R, Oguchi M. Advances in the treatment of extranodal NK/T-cell lymphoma, nasal type. Blood. 2018 Jun 7;131(23):2528-2540. Review.

**Primary Author(s):**
Gregory Orlowski, MD, UMASS Memorial Medical Center

**Co-Author(s):**
Mark Scharf

## Minocycline “tattooing” both diagnostic and therapeutic in clinicopathologically discordant leprosy

A 69 year old white male presented with the chief complaint of a red non-tender plaque on his left lateral arm for two months. His past medical history was significant for alpha-1-antitrypsin disease treated with inhalers and oxygen. He denied any recent foreign travel and gardens as a hobby.

On examination the patient had an unusual single red plaque on his left distal lateral arm. A punch biopsy demonstrated an infectious granulomatous infiltrate. Fite stain highlighted numerous organisms in the dermal infiltrate. A tissue block was sent to the National Hanson’s Disease Program (NHDP) for PCR analysis and which was positive for Mycobacterium leprae. This case is rare because it represents a tuberculoid (TT) presentation clinically with a lepromatous (LL) presentation histologically. This also presented a conundrum in choice of antibiotic regimen and determination of duration, since this is determined by disease classification.

In consultation with the NHDP, we chose to treat as LL, with dapsone, rifampin, and minocycline. Both clofazimine and minocycline are interchangeable as 3rd agents, and both induce hyperpigmentation that can be used to “tattoo” clinically invisible LL lesions, serving both diagnostic and therapeutic roles, when initial clinical classification is challenging. Minocycline was favored, since clofazimine requires special licensing and an FDA IND application.

**References:**

1. Sharma, R., Singh, P., Loughry, W.J., et al. (2015). Zoonotic Leprosy in the Southeastern United States. Emerging Infectious Diseases. 21(12): 2127-2134.
2. Bishwa, R. S., Kapil, D. N., & Ram, K. M. (2009). Single lesion multibacillary leprosy, a treatment enigma: a case report. Journal of Medical Case Reports, 3(8), 1752-1947.
3. Bang, P.D., Suzuki K., Phuong le, T., Chu, T.M., & Khang T.H. (2009). Evaluation of polymerase chain reaction-based detection of Mycobacterium leprae for the diagnosis of leprosy. J Dermatology. 36(5):269-76.
4. Hu, Stephanie et al. “Minocycline-induced hyperpigmentation in multibacillary leprosy.” The American Journal of dermatopathology 34 8 (2012): e114-8 .

**Primary Author(s):**
Blake Robbins, DO, VCOM/OPMC

**Co-Author(s):**
Karthik Krishnamurthy, Orange Park Medical Center

## Imaging of in vivo pseudoxanthoma elasticum via multiphoton microscopy and optical coherence tomography

Pseudoxanthoma elasticum (PXE) is an autosomal recessive disorder of abnormal elastic tissue deposition and calcification. Clinically, the skin may be lax or redundant in flexures, and may have small, yellow-orange colored papules, resembling xanthomas. The diagnosis of PXE is primarily clinical with histologic confirmation, showing microscopic changes consisting of disorganized, fragmented elastin fibers in the mid and deep reticular dermis, with potentially overlying calcium deposits. We present a case of a 65-year old patient with biopsy-proven PXE and describe characteristic skin findings using multiphoton microscopy (MPM) and optical coherence tomography (OCT). We compare and contrast these findings with normal skin images and histological findings. MPM acquires images of the skin to a depth of 0.2mm at a high resolution, while OCT obtains horizontal scans to a depth of 1-2mm at a lower resolution. MPM imaging of the affected area demonstrated an abundance of fragmented and irregular elastin bundles in the papillary dermis. OCT imaging was less specific and displayed a wide area of superficial attenuation at 0.53mm with indistinct homogeneous material in the mid-dermis that can represent the mineralized, fibrotic tissue found in PXE. This case represents how novel, non-invasive imaging technologies can be helpful in diagnosing PXE.

**References:**


1. Sherer DW, Sapadin AN, Lebwohl MG. Pseudoxanthoma elasticum: an update. Dermatology. 1999;199(1):3-7.
2. Singh A, Bhari N, Bhari A. Dermoscopy of pseudoxanthoma elasticum. BMJ Case Rep. 2017;2017.
3. Persechino F, Giordano D, Marini CD, Franceschini C, Ardigo M, Persechino S. Dermoscopy, Optical Coherence Tomography, and Histological Correlation of Pseudoxanthoma Elasticum. Dermatol Pract Concept. 2019;9(3):209-210.
4. Balu M, Kelly KM, Zachary CB, et al. Distinguishing between benign and malignant melanocytic nevi by in vivo multiphoton microscopy. Cancer research. 2014;74(10):2688-2697.
5. Balu M, Zachary CB, Harris RM, et al. In Vivo Multiphoton Microscopy of Basal Cell Carcinoma. JAMA Dermatol. 2015;151(10):1068-1074.
6. Balu M, Lentsch G, Korta DZ, et al. In vivo multiphoton-microscopy of picosecond-laser-induced optical breakdown in human skin. Lasers Surg Med. 2017;49(6):555-562.
7. Murata T, Honda T, Miyachi Y, Kabashima K. Morphological character of pseudoxanthoma elasticum observed by multiphoton microscopy. Journal of Dermatological Science. 2013;72(2):199-201.
8. Tong PL, Qin J, Cooper CL, et al. A quantitative approach to histopathological dissection of elastin-related disorders using multiphoton microscopy. British Journal of Dermatology. 2013;169(4):869-879.
9. Nasca MR, Lacarrubba F, Caltabiano R, Verzi AE, Micali G. Perforating pseudoxanthoma elasticum with secondary elastosis perforans serpiginosa-like changes: dermoscopy, confocal microscopy and histopathological correlation. J Cutan Pathol. 2016;43(11):1021-1024.



**Primary Author(s):**

Joseph N. Mehrabi, Department of Dermatology, University of California, Irvine

**Co-Author(s):**

Judy Doong MD; Griffin Lentsch, University of California Irvine; Natasha Mesinkovska MD PhD


## Transforming Woringer–Kolopp disease (localized pagetoid reticulosis) in a 58-year-old woman

A 58-year-old otherwise healthy female presented for mildly pruritic erythematous patches on her left arm. Initial and repeat biopsies revealed pityriasiform and spongiotic dermatitis respectively, both of which had epidermotropic lymphocytes (CD3+:CD4+:CD7+) concerning for an evolving cutaneous T cell lymphoma (CTCL). Tissue T-cell clonality studies and peripheral flow cytometry were negative for immunophenotypic abnormalities, with a kappa:lambda ratio of 1.5 and a CD4:CD8 ratio of 1.5. She had moderate improvement with excimer laser therapy after failing treatment with topical mechlorethamine and topical bexarotene.

Two years later, she returned to clinic with a solitary hyperkeratotic plaque on her left forearm. Tissue T-cell clonality studies were repeated and revealed a conversion to positive clonal T-cell receptor gamma population, consistent with a T-lymphocytic neoplasm. Peripheral flow cytometry remained negative. A CBC, CMP, TSH, and T4 were within normal limits. Based on the patient's clinical and histopathologic findings, she was diagnosed with Woringer-Kolopp disease. CT scan with contrast revealed no masses or lymphadenopathy.

Woringer-Kolopp disease (localized pagetoid reticulosis) is an extremely rare variant of mycosis fungoides, making up less

than 1% of all CTCL cases. It is characterized by a solitary psoriasiform or hyperkeratotic patch or plaque, usually on an extremity and it has a slowly progressive, indolent course. It is often misdiagnosed as psoriasis, dermatitis, parapsoriasis or dermatophytosis. To date, approximately 50 cases have been reported. This case demonstrates the importance of thorough investigation of clinical lesions suspicious for CTCL with unusual presentations, and vigilant follow-up to detect evolving disease.

**References:**

1. Marialuisa Corbeddu, MD, Caterina Ferreli, MD, Luca Pilloni, MD, Gavino Faa, MD, Lorenzo Cerroni, MD, and Franco Rongioletti, MD. Pagetoid reticulosis (Woringer-Kolopp disease) in a 2-year-old girl—Case report and review of the literature
2. Bijan Haghighi M.D., Bruce R Smoller M.D., Philip E LeBoit M.D., Roger A Warnke M.D., Christian A Sander M.D. & S Kohler M.D. Pagetoid Reticulosis (Woringer-Kolopp Disease): An Immunophenotypic, Molecular, and Clinicopathologic Study
3. Burns MK, Chan LS, Cooper KD. Woringer-Kolopp Disease (Localized Pagetoid Reticulosis) or Unilesional Mycosis Fungoides? An Analysis of Eight Cases With Benign Disease. Arch Dermatol. 1995;131:325–329
4. Pimpinelli N, Olsen EA, Santucci M, et al. Defining early mycosis fungoides. J Am Acad Dermatol 2005;53:1053–63

**Primary Author(s):**

Stefanie Altmann, DO, Park Avenue Dermatology, Orange Park Medical Center

**Co-Author(s):**

Logan Kolb, DO; Karthik Krishnamurthy, DO, Orange Park Medical Center

## An interesting case of Scurvy: from Sea to Psychiatry

Scurvy, or ascorbic acid deficiency, is seldom diagnosed in developed countries and should be considered in those with psychiatric, alcohol abuse, and avoidant/restrictive food intake disorders. The diagnosis can be challenging because of the rare incidence. We report a case of scurvy in a man with schizophrenia and a diet void of produce who presented with a petechial rash.

A 64-year-old Caucasian male with a past medical history of schizophrenia presented with a 1-week history of a diffuse rash. The patient denied any similar rashes, pruritus, recent illness or new medications. The patient was admitted to the psychiatric inpatient one month prior for suicidal ideations; a rash was not noted then.

Physical examination revealed a diffuse truncal petechial eruption, perifollicular, hyperkeratotic papules on the lateral thighs, and follicular-based papules on lower abdomen. Dermoscopic examination demonstrated “corkscrew” hairs. Laboratory workup revealed an undetectable ascorbic acid level and mildly elevated sedimentation rate, 66mm/hr. The metabolic panel, B12, folate, and iron studies were within normal limits.

Diagnoses was confirmed with histopathology. Patient was treated with 500mg of vitamin C twice daily for one week, and 400mg daily thereafter with resolution of symptomology within weeks.

Scurvy, historically linked to sea voyagers of the 18th century, can present in developed countries. Risk factors such as alcohol-abuse, older age, restrictive diets, social isolation or those with mental health disorders can all be impacted with this disease. This case is an example of how psychiatric disease can lead to a nutritional deficiency with dermatologic and systemic manifestations.

**References:**

1. Fain, O. (2005). Musculoskeletal manifestations of scurvy. Joint Bone Spine, 72(2), 124-128.
2. Ho EY, Mathy C. Functional abdominal pain causing Scurvy, Pellagra, and Hypovitaminosis A. F1000Research. 2014;3:35.
3. Alqanatish JT, Alqahtani F, Alsewairi WM, 2969-015-0020-1Al-kenaizan S. Childhood scurvy: an unusual cause of refusal to walk in a child. Pediatric Rheumatology Online Journal. 2015;13:23.
4. Robinson D. Hemarthrosis as Initial Presentation of Scurvy. The journal of rheumatology, 1 Aug. 2001.

5. Agarwal A, Shaharyar A, Kumar A, Bhat M, Mishra M. Scurvy in pediatric age group – A disease often forgotten?. J Clin Orthop Trauma. 2015;6(2):101-107. doi:10.1016/j.jcot.2014.12.003
6. Hirschmann, J. V., & Raugi, G. J. (1999). Adult scurvy. J Am Acad Dermatol, 41(6), 895-906; quiz 907-810.

**Primary Author(s):**
Roxanna Arakozie, DO, Broward General Medical Center

**Co-Author(s):**
Brandon Basehore, Broward Health Medical Center; Brooke Wehausen

## Neural crest migration dilemma: a case of an intradermal nevus and a neurofibroma

A 31 year old, Caucasian female with no significant past medical history presented to dermatology with a tender lesion on her left leg which had been present for 5 years and enlarged over the last 2 years. She denied other similar appearing lesions, fevers, chills, or rashes.

Physical examination revealed a 1.2 centimeter skin-colored to pink, soft, pedunculated plaque on the left posterior leg which was tender to palpation. The differential diagnosis included an intradermal nevus and a neurofibroma.

In the setting of recent growth and tenderness, the plaque was removed with shave biopsy. Pathologic examination demonstrated a neurofibroma juxtaposed vertically to an intradermal nevus and described as two separate, distinct histologic entities.

To the author's knowledge, this entity has not yet been described in the literature. There are publications which describe neurotized melanocytic nevi but without features specific for neurofibromas. Both neurofibromas and intradermal nevi originate from neural crest stem cells, therefore immunohistochemical stains may be necessary to distinguish between the Schwann cells and perineural fibroblasts suggestive of neurofibromas and the neurotized, spindle-shaped nevus cells of neurotized melanocytic nevi. However, immunohistochemistry was not necessary in our case given a clear delineation between the intradermal nevus and neurofibroma on H&E. This case is an interesting juxtaposition of two common entities seen in dermatology. Whether these entities derived from the same progenitor cell or are coincidentally together is unknown.

**References:**
1. Gray MH, Smoller BR, McNutt NS, Hsu A. Neurofibromas and neurotized melanocytic nevi are immunohistochemically distinct neoplasms. Am J Dermatopathol. 1990;12(3): 234-241.
2. Boyers LN, Karimkhani C, Stevens E, High WA. Innumerable nevi with giant congenital melanocytic nevus clinically mimicking neurofibromatosis: A diagnostic challenge. JAAD Case Reports. 2015 Sep 1;1(5):241-3.

**Primary Author(s):**
Jaclyn A. Mescher, MD, Walter Reed National Military Medical Center, Department of Dermatology

**Co-Author(s):**
Kent S. Handfield, MD, FAAD, Walter Reed Military Medical Center

## Disseminated Concurrent Blastomycosis and Histoplasmosis

A 65 year old male with history joint pains and unspecified connective tissue disorder was transferred to our institution for management of wounds on the right hand. Patient reported a history of joint and hand swelling two months prior to presentation. He subsequently developed significant erythema and pain in his right hand. Due to concern for autoimmune arthritis, he was started on prednisone, methotrexate, and hydroxychloroquine without improvement. He subsequently developed erosions, ulcerations, and worsening of pain on the right hand and presented to hospital for further evaluation. Examination showed extensive erosions and ulcerations with visible muscular and tendon tissue. Further examination on the right hand and tender indurated dermal plaques without any epidermal change on the left thigh. Histopathological

evaluation showed diffuse dermal inflammatory infiltrate composed of neutrophils, histiocytes, mast cells, lymphocytes, and plasma cells. GMS and PAS staining showed numerous small round yeasts with narrow-based budding. Both blood and tissue cultures showed growth of Histoplasma Capsulatum. Urine antigen testing was positive for both Histoplasma and Blastomyces. Patient was diagnosed with disseminated Blastomycosis and histoplasmosis. He was started on oral itraconazole with resolve of all of his cutaneous lesions.

**Primary Author(s):**
Nima Milani-Nejad, MD., Ph.D, The Ohio State University Wexner Medical Center

**Co-Author(s):**
Nima Milani-Nejad

## A Case of Chloracne in a Firefighter

38-year-old male fire fighter presented with a 1 month history of sudden onset monomorphic pustules, inflammatory papules, and cysts which started on the forehead and spread caudally until they completely covered the face, neck, and chest. The lesions have persisted and failed two courses of antibiotic therapy. He denies history of acne vulgaris, recent travel, new medications, or diet changes, though reports being called to a fire in a mechanic's work-shed one week prior to this eruption. Biopsy of a pustular lesion on the chest revealed folliculitis. Gram stain and aerobic culture negative for bacteria. Comprehensive metabolic panel and complete blood count unremarkable. Review of the literature reveals two cases of chloracne seen in fire fighters, presumably due to exposure to polychlorinated biphenyls, though this is not an occupation classically associated with the condition (Orris). Clinically, the patient's case is consistent with chloracne. Isotretinoin was initiated for the treatment of his condition. This case is submitted for interest.

**References:**
1. Orris P, et al. Chloracne in firefighters. Lancet, 1986 Jan 25; 1(8474):210-1.

**Primary Author(s):**
Suzanne Ward, MD, University of California, Irvine

**Co-Author(s):**
Natasha Mesinkovska

## An unusual case of cutaneous lupus

A 44 year-old woman presented to dermatology clinic for a second opinion regarding a facial eruption. She reported that one year ago she developed weakness of her lower extremities and was diagnosed with chronic inflammatory demyelinating polyneuropathy (CIDP) for which she was initiated on intravenous immunoglobulin (IVIg).
She reported onset of pink spots on her face six weeks after starting IVIg. The lesions are asymptomatic. She was diagnosed with acne by an outside provider and was prescribed benzoyl peroxide 5% wash, tretinoin 0.025% cream and clindamycin 1% lotion from which she experienced no improvement.

Her examination was notable for a well-appearing woman. She had three-to-five millimeter erythematous, blanchable papules located on her forehead, nose, bilateral cheeks, dorsal forearms, upper back, anterior chest, vertex scalp and her right conchal bowl. She had no periungual changes.

Two four-millimeter punch biopsies were performed which showed a lymphocytic, vacuolar interface dermatitis with increased dermal mucin and deep perifollicular inflammation, consistent with cutaneous lupus erythematosus. Laboratory evaluation revealed Anti-neutrophilic antibody (ANA) with titer 1:80 and negative anti-smith (Sm), anti-double stranded DNA (dsDNA), anti-ribonucleoprotein (RNP), antiphospholipid antibodies. Her complement levels, complete blood count and comprehensive metabolic panel were within normal limits.

She was diagnosed with cutaneous lupus erythematosus. Her IVIg was stopped, and she was initiated on mycophenolate mofetil one gram twice daily with improvement in her lesions. While CIDP may be a rare manifestation of systemic lupus

erythematosus, recent literature supports IVIg as a cause of drug-induced cutaneous lupus erythematosus in patients with CIDP.

**References:**

1. Tara Jennings, Sarah Ahmed, Abhishek Aphale, Jason Lee and Rodrigo Valdes-Rodriguez, Intravenous immunoglobulin G use in patients with chronic inflammatory demyelinating polyneuropathy: An uncommon cause of drug-induced discoid lupus erythematosus, Australasian Journal of Dermatology, 60, 3, (e208-e210) (2019)
2. Adrichem ME, Starink MV, van leeuwen EM, Kramer C, van Schaik IN, Eftimou F, 2017. Drug-induced cutaneous lupus erythematosus after immunoglobulin treatment in chronic inflammatory demyelinating polyneuropathy: a case series. J. Peripher. Nerv. Syst 22, 213–218.

**Primary Author(s):**
Elizabeth Messenger, MD, Stanford University Department of Dermatology

**Co-Author(s):**
David F. Fiorentino, MD, PhD

## Ten cases of lupus vulgaris from Sri Lanka

Cutaneous tuberculosis (TB) is a rare presentation of extra pulmonary TB and most common variety of cutaneous TB is lupus vulgaris (LV). LV usually occurs in previously sensitized individuals who have a high degree of tuberculin sensitivity and has varying clinical presentations.

We report the clinical, therapeutic and outcome features of 10 cases of LV.

Six females and 4 males included aged 18 to 75 years. All were previously healthy. Eight patients had plaque type of LV, 5 with lesions on the face and another three with leg lesions. Other two had hypertrophic type and papular type of LV. Four patients presented within 1 year of appearance of the lesions and other 6 were delayed for more than 2 years. Nine out of 10 did not have evidence of systemic involvement with TB.

All demonstrated tuberculoid type granulomas on skin histology with negative Ziehl Neelsen stain for acid fast bacilli. All had positive Mantoux test. TB culture of skin specimens was performed, yet all were negative. TB PCR was performed in 7 patients and 4 had positive results for mycobacterium tuberculosis.

All were started on anti tuberculous therapy with rifampicin, isoniazid, pyrazinamide and ethambutol for 6 months. Eight patients showed complete healing of lesions with some residual scarring and 2 needed extended treatment for another 3 months.

Conclusion: This case series highlights the importance of suspicion of LV in patients presenting with chronic skin lesions of varying morphology in countries endemic for TB.

**References:**

1. BMGD Yasaratne, DM Madegedara. Tuberculosis of the skin. Journal of the Ceylon College of Physicians, 2010, 41, 83-88
2. Lindi van Zyl, Jeanetta du Plessis, Joe Viljoen. Cutaneous tuberculosis overview and current treatment regimens. Tuberculosis. 2015; Volume 95, Issue 6, Pages 629–638

**Primary Author(s):**
Niluka D Paththinige, MBBS, MD, National Hospital of Sri Lanka

**Co-Author(s):**
Chamila H Ariyarathne; Amila B Wickramanayake; Prasanna LDS Karunarathne; Chathuri H Maddumarachchi, National Hospital of Sri Lanka - Senior Registrar in Dermatology; Janaka KW Akarawita

# Hidradenocarcinoma of the hip: an uncommon adnexal tumor

A 65-year-old man was referred with a 3-year history of a slowly enlarging nodule on the right lateral hip. He initially presented to an outside facility with a painless, soft, mobile 4cm by 3cm subcutaneous nodule with red-purple discoloration of the overlying skin. He was otherwise in his normal state of health except for a recent 4-pound weight loss. Microscopic examination of an excisional biopsy specimen showed a solid and cystic proliferation of poroid cells with focal squamoid, apocrine, and ductal differentiation with hyalinized stroma associated with areas of cytologic atypia, numerous mitotic figures, and zones of tumor necrosis, with a focal infiltrative growth pattern. These findings were consistent with a diagnosis of hidradenocarcinoma. MRI and PET/CT imaging was negative for metastatic disease, and a sentinel lymph node biopsy was negative. The area was reexcised with Mohs micrographic surgery with negative margins, and the patient was referred for initiation of adjuvant radiation therapy.

Hidradenocarcinoma is an uncommon malignant adnexal tumor arising from intradermal eccrine glands, and most commonly presents on the head and neck. It can follow an aggressive course, and tumors may recur locally or spread regionally despite aggressive surgical management. Local excision with wide margins or Mohs micrographic surgery is generally recommended, and adjuvant radiation therapy can be considered.

**References:**


1. Hernández-Pérez E, Cestoni-Parducci R. Nodular hidradenoma and hidradenocarcinoma: A 10-year review. Journal of the American Academy of Dermatology. 1985;12(1, Part 1):15-20. doi:10.1016/S0190-9622(85)70002-3
2. Gauerke S, Driscoll JJ. Hidradenocarcinomas: A Brief Review and Future Directions. Archives of Pathology & Laboratory Medicine. 2010;134(5):781-785. doi:10.1043/1543-2165-134.5.781
3. Soni A, Bansal N, Kaushal V, Chauhan AK. Current management approach to hidradenocarcinoma: a comprehensive review of the literature. ecancermedicalscience. 2015;9. doi:10.3332/ecancer.2015.517
4. Mir Khan B, Mansha MA, Ali N, Abbasi ANN, Ahmed SM, Qureshi BM. Hidradenocarcinoma: Five Years of Local and Systemic Control of a Rare Sweat Gland Neoplasm with Nodal Metastasis. Cureus. 10(6). doi:10.7759/cureus.2884



**Primary Author(s):**
David D Xiong, BA, Cleveland Clinic Lerner College of Medicine

**Co-Author(s):**
Steven Billings, MD; Valerie Shiu; Allison Vidimos, RPh, MD

# GROSS & MICROSCOPIC DISCLOSURES

## A

**A. Nichole Sullivan, MD;** No financial relationships exist with commercial interests.
**A. Yasmine Kirkorian, MD;** No financial relationships exist with commercial interests.
**A/ Prof. Anselm Mak, MMedSc(HK), MBBS(HK), MD(HK), PhD(NUS), MRCP(UK), FRCP (Lond), FRCP(Edin), FRCPI;** No financial relationships exist with commercial interests.
**Aaron Fong, MD;** No financial relationships exist with commercial interests.
**Aaron Russell, MD;** No financial relationships exist with commercial interests.
**Aatman Shah;** No financial relationships exist with commercial interests.
**Abdullah Aleisa, MD;** No financial relationships exist with commercial interests.
**Acute Syndrome of Apoptotic Pan-epidermoly;** No financial relationships exist with commercial interests.
**Adam Friedman, MD;** No financial relationships exist with commercial interests.
**Adam J. Friedman;** No financial relationships exist with commercial interests.
**Adeline Yong;** No financial relationships exist with commercial interests.
**Adinia Santosa, MD, MRCP(UK);** No financial relationships exist with commercial interests.
**Aerang Kim;** No financial relationships exist with commercial interests.
**Ahmed K. Alomari;** No financial relationships exist with commercial interests.
**Alain Brassard;** No financial relationships exist with commercial interests.
**Alaina J. James, MD, PhD;** No financial relationships exist with commercial interests.
**Alan S. Boyd, MD;** No financial relationships exist with commercial interests.
**Albert Alhatem, MD;** No financial relationships exist with commercial interests.
**Alessio Giubellino, M.D., PhD;** No financial relationships exist with commercial interests.
**Alexandra Hristov, MD;** No financial relationships exist with commercial interests.
**Alexandra M Streifel, BA;** No financial relationships exist with commercial interests.
**Ali Dana, MD, PhD;** No financial relationships exist with commercial interests.
**Alina Bridges, DO;** No financial relationships exist with commercial interests.
**Alina Markova, MD;** No financial relationships exist with commercial interests.
**Alison Ehrlich, MD, MHS;** No financial relationships exist with commercial interests.
**Alison M Treichel;** No financial relationships exist with commercial interests.
**Alison Moynihan, MD, PhD;** No financial relationships exist with commercial interests.
**Alison Small;** No financial relationships exist with commercial interests.
**Allison Vidimos, RPh, MD;** No financial relationships exist with commercial interests.
**Allison Weiffenbach, MD;** No financial relationships exist with commercial interests.
**Allison Weinkle;** No financial relationships exist with commercial interests.
**Allison Weinkle, MD;** No financial relationships exist with commercial interests.
**Allison Zarbo, MD;** No financial relationships exist with commercial interests.
**Alyson Brinker, MD;** No financial relationships exist with commercial interests.
**Amanda E. Zubek, MD, PhD;** No financial relationships exist with commercial interests.
**Amila B Wickramanayake;** No financial relationships exist with commercial interests.
**Amy Zavell, MD;** No financial relationships exist with commercial interests.
**Andrea Kalus, MD;** No financial relationships exist with commercial interests.
**Andrea Neimann, MD, MSCE;** No financial relationships exist with commercial interests.
**Andrea R. Waldman MD;** No financial relationships exist with commercial interests.
**Andrew Dunn, M.D;** No financial relationships exist with commercial interests.
**Andrew J. Johnson, MD;** No financial relationships exist with commercial interests.
**Andrew R. Blundell, MSc;** No financial relationships exist with commercial interests.
**Angela Hou, MD;** No financial relationships exist with commercial interests.
**Angelo Landriscina, MD;** No financial relationships exist with commercial interests.
**Anna K. Dewan, MD;** No financial relationships exist with commercial interests.
**Anna Kim, MD;** No financial relationships exist with commercial interests.
**Anna Kristine Dewan, MD;** No financial

relationships exist with commercial interests.

**Anna-Marie Hosking, MD;** No financial relationships exist with commercial interests.
**Annie Bélisle, MD;** No financial relationships exist with commercial interests.
**Annie Genois;** No financial relationships exist with commercial interests.
**Annie R. Wang, M.D.;** No financial relationships exist with commercial interests.
**Anthony A Gaspari, MD**; No financial relationships exist with commercial interests.
**Anthony Abdullah;** No financial relationships exist with commercial interests.
**Arivarasan Karunamurthy;** No financial relationships exist with commercial interests.
**Ashima Lowe, MBBS, MRCP (UK);** No financial relationships exist with commercial interests.
**Ashley DiLorenzo, MD;** No financial relationships exist with commercial interests.
**Ashley Sturgeon, MD;** No financial relationships exist with commercial interests.
**Aubrey Winn, MD;** No financial relationships exist with commercial interests.
**Aubry Winn;** No financial relationships exist with commercial interests.
**Aunna Pourang MD;** No financial relationships exist with commercial interests.
**Avery LaChance;** No financial relationships exist with commercial interests.

## B

**Barbara D Wilson, MD;** No financial relationships exist with commercial interests.
**Ben J. Friedman, MD;** No financial relationships exist with commercial interests.
**Benjamin Ellezam;** No financial relationships exist with commercial interests.
**Bernice Kwong;** Genentech, Inc. - Consultant (Fees);
**Betelhem Teshome, MD;** No financial relationships exist with commercial interests.
**Beth McLellan** Biopelle, Inc. - Consultant (Fees); Spruce - Advisory Board (Stock Options);
**Beverly Faulkner-Jones, MD;** Rapid Path Services DBA - Other (Fees);
**Bijal Amin, MD;** No financial relationships exist with commercial interests.
**Bilal Fawaz, MD;** No financial relationships exist with commercial interests.
**Blake Friedman MD;** No financial relationships exist with commercial interests.
**Blake Robbins, DO;** No financial relationships exist with commercial interests.
**Braden Candela, MD;** No financial relationships exist with commercial interests.
**Brandon M. Basehore, DO;** No financial relationships exist with commercial interests.
**Brett Austin, MD;** No financial relationships exist with commercial interests.
**Brett H. Keeling;** No financial relationships exist with commercial interests.
**Brian Hibler, MD;** No financial relationships exist with commercial interests.
**Brian J. Simmons, MD;** No financial relationships exist with commercial interests.
**Brian S. Hoyt, MD;** VisualDx - Advisory Board (Honoraria);
**Brian Schapiro, MD;** No financial relationships exist with commercial interests.
**Brianne Daniels, DO;** No financial relationships exist with commercial interests.
**Bridget Shields, MD;** No financial relationships exist with commercial interests.
**Brit Trogen;** No financial relationships exist with commercial interests.
**Brittany Lenz, MD;** No financial relationships exist with commercial interests.
**Brooke Wehausen;** No financial relationships exist with commercial interests.

## C

**Caitlin Hamilton, BS;** No financial relationships exist with commercial interests.
**Camille Pennou, MD;** No financial relationships exist with commercial interests.
**Campbell Stewart, MD;** No financial relationships exist with commercial interests.
**Carly Elston, MD;** No financial relationships exist with commercial interests.
**Carolyn Ziemer;** No financial relationships exist with commercial interests.
**Caryn Cobb, B.A.;** No financial relationships exist with commercial interests.
**Catherine Harwood;** No financial relationships exist with commercial interests.
**Catherine J. Wang, BS;** No financial relationships exist with commercial interests.
**Catherine N. Tchanque-Fossuo, MD, MS;** No financial relationships exist with commercial interests.
**Catherine Newman, MD;** No financial relationships exist with commercial interests.
**Cecilia Lezcano, MD;** No financial relationships exist with commercial interests.
**Chamila H Ariyarathne;** No financial relationships exist with commercial interests.
**Chandler Rundle, MD;** Pfizer Inc. - Other

(Grants/Research Funding);
**Chapman Wei, BS;** Celgene - Investigator (Grants/Research Funding), Speaker (Grants/Research Funding);
**Charisse Orme, MD, PhD;** No financial relationships exist with commercial interests.
**Charlotte LaSenna, MD;** No financial relationships exist with commercial interests.
**Chathuri H Maddumarachchi;** No financial relationships exist with commercial interests.
**Chee Hian Tan;** No financial relationships exist with commercial interests.
**Chelsea Fidai, MD MS;** No financial relationships exist with commercial interests.
**Cheryl Bayart;** No financial relationships exist with commercial interests.
**Chien-Ping Chiang. MD, PhD;** No financial relationships exist with commercial interests.
**Chih-Tsung Hung. MD;** No financial relationships exist with commercial interests.
**Chih-Yu Chen. MD;** No financial relationships exist with commercial interests.
**Chng Wei Qiang;** No financial relationships exist with commercial interests.
**Chris Tan Lixian;** No financial relationships exist with commercial interests.
**Christina Boull, MD, FAAD;** No financial relationships exist with commercial interests.
**Christina Luffman, MD;** No financial relationships exist with commercial interests.
**Christina N. Kraus;** No financial relationships exist with commercial interests.
**Christina Tejeda, BS;** No financial relationships exist with commercial interests.
**Christina Wong;** No financial relationships exist with commercial interests.
**Christine Ko, MD;** Elsevier Inc. - Other (Patent royalties or other compensation for Intellectual Property Rights); **Wiley-Blackwell;** Other (Patent royalties or other compensation for Intellectual Property Rights);
**Christine N. Schafer, MD;** No financial relationships exist with commercial interests.
**Christine Weinberger;** No financial relationships exist with commercial interests.
**Christopher DiMarco, MD;** No financial relationships exist with commercial interests.
**Christopher White, DO;** No financial relationships exist with commercial interests.
**Claudia DeGiovanni;** No financial relationships exist with commercial interests.
**Claudia Hossain;** No financial relationships exist with commercial interests.
**Connie S. Zhong, MSc;** No financial relationships exist with commercial interests.
**Corey Georgesen, MD;** No financial relationships exist with commercial interests.
**Cristy Garza-Mayers;** No financial relationships exist with commercial interests.
**Crystal U. Aguh, MD;** LEO Pharma, US - Consultant (Fees); L'Oreal USA Inc. - Consultant (Fees); UpToDate, Inc - Other (Fees)
**Cynthia M DeKlotz, MD;** No financial relationships exist with commercial interests.
**Cynthia Magro;** No financial relationships exist with commercial interests.
**Cynthia Nicholson, MD;** No financial relationships exist with commercial interests.

## D

**Daniel Grove;** No financial relationships exist with commercial interests.
**Daniel Gutierrez, MD;** No financial relationships exist with commercial interests.
**Daniel Michalik, MD;** No financial relationships exist with commercial interests.
**Daniel Wallis MD;** No financial relationships exist with commercial interests.
**Daniel West, MD;** No financial relationships exist with commercial interests.
**Daniela Kroshinsky, MD, MPH;** No financial relationships exist with commercial interests.
**Danielle De Stefano, MD;** No financial relationships exist with commercial interests.
**Danielle Tartar MD PhD;** No financial relationships exist with commercial interests.
**Danile Miller;** JAMA - Employee (Honoraria); Regeneron - Investigator (Other Financial Benefit); UpToDate, Inc - Other (Honoraria)
**Danna Moustafa, BS;** No financial relationships exist with commercial interests.
**Darosa Lim, MD;** No financial relationships exist with commercial interests.
**David A. Wiegmann, MD;** No financial relationships exist with commercial interests.
**David Altman, MD;** No financial relationships exist with commercial interests.
**David Ciocon MD;** No financial relationships exist with commercial interests.
**David Cleaver, D.O.;** No financial relationships exist with commercial interests.
**David D Xiong, BA;** No financial relationships exist with commercial interests.
**David F. Fiorentino, MD,PhD;** No financial relationships exist with commercial interests.
**David Lynch, MD;** No financial relationships exist with commercial interests.
**David M. Miller, MD, PhD;** EMD Serono - Advisory Board (Honoraria); Pfizer Inc. - Advisory Board

(Honoraria); Regeneron Pharmaceuticals, Inc. - Advisory Board (Honoraria); Sanofi Genzyme - Advisory Board (Honoraria)

**David R Pearson, MD;** No financial relationships exist with commercial interests.

**David S. Feingold;** No financial relationships exist with commercial interests.

**Diana H. Lee;** No financial relationships exist with commercial interests.

**Ding Yuan Wang;** No financial relationships exist with commercial interests.

**Doaa Shalabi;** No financial relationships exist with commercial interests.

**Domingo Rosario, MD;** No financial relationships exist with commercial interests.

**Donna Culton;** No financial relationships exist with commercial interests.

**Douglas H Atmatzidis, MD;** No financial relationships exist with commercial interests.

**Dr. Soma Sarkar MBBS MD;** No financial relationships exist with commercial interests.

**Dr. Justin Wong Soon Boon, MBBS, FRCPA;** No financial relationships exist with commercial interests.

**Dr. Mun Wai Lam;** No financial relationships exist with commercial interests.

**Dr. Pick Ngor Woo;** No financial relationships exist with commercial interests.

**Dr. Sue-Ann Ho Ju Ee, MBBS, MRCP (UK);** No financial relationships exist with commercial interests.

**Dr.David Veitch;** No financial relationships exist with commercial interests.

## E

**Edit Olasz Harken;** No financial relationships exist with commercial interests.

**Edward Li;** No financial relationships exist with commercial interests.

**Ehsan Azimi, MD;** No financial relationships exist with commercial interests.

**Elena B. Hawryluk, MD PhD;** Gritstone Oncology - Employee (Salary); UpToDate, Inc - Other (Other Financial Benefit);

**Elena B. Hawryluk, MD, PhD;** No financial relationships exist with commercial interests.

**Eli Morey, MD;** No financial relationships exist with commercial interests.

**Elisabeth A. George, BA;** No financial relationships exist with commercial interests.

**Elizabeth Messenger, MD;** No financial relationships exist with commercial interests.

**Elizabeth Nieman, MD;** No financial relationships exist with commercial interests.

**Elizabeth Schmidt, PA-C;** No financial relationships exist with commercial interests.

**Elizabeth Sutton, MD;** No financial relationships exist with commercial interests.

**Elizabeth Taylor, D.O.;** No financial relationships exist with commercial interests.

**Ellen K. Roh;** No financial relationships exist with commercial interests.

**Emily C. Milam, MD;** No financial relationships exist with commercial interests.

**Emily M. Altman;** Eli Lilly and Company - Independent Contractor (Fees);

**Emily Maxon, DO;** No financial relationships exist with commercial interests.

**Eric Simpson, MD;** AbbVie - Consultant (Fees), Investigator (Grants/Research Funding); Boehringer Ingelheim - Consultant (Fees); Demira - Consultant (Fees); Dermavant Sciences - Consultant (Fees); Eli Lilly and Company - Consultant (Fees), Investigator (Grants/Research Funding); Forte Biosciences - Consultant (Fees); Galderma Laboratories, LP - Investigator (Grants/Research Funding); Incyte Corporation - Consultant (Fees); Kyowa Hakko Kirin Pharma, Inc. - Investigator (Grants/Research Funding); Leo Pharma Inc. - Consultant (Fees), Investigator (Grants/Research Funding); Menlo Therapeutics Inc. - Consultant (Fees); Merck - Investigator (Grants/Research Funding); Pfizer Inc. - Consultant (Fees), Investigator (Grants/Research Funding); Pierre Fabre Dermo Cosmetique France - Consultant (Fees); Regeneron - Consultant (Fees), Investigator (Grants/Research Funding); Sanofi Genzyme - Consultant (Fees); Valeant Pharmaceuticals International - Consultant (Fees);

**Erin Ibler, MD;** No financial relationships exist with commercial interests.

**Erinolaoluwa F. Araoye, BS;** No financial relationships exist with commercial interests.

**Esther B. Henebeng, BS;** No financial relationships exist with commercial interests.

**Eugene Balagula;** No financial relationships exist with commercial interests.

**Evan Stokar;** No financial relationships exist with commercial interests.

**Evelyn Lilly, MD;** No financial relationships exist with commercial interests.

## F

**Fatemeh Jafarian;** No financial relationships exist with commercial interests.

**Freddie Bartholomew, MD, MBA;** No financial relationships exist with commercial interests.

## G

**G. Strider Farnsworth, MD,** Capt U.S. Air Force; No financial relationships exist with commercial interests.

**Gabriela Cobos;** No financial relationships exist with

commercial interests.

**Garrett N. McCoy, MD;** No financial relationships exist with commercial interests.

**Gauri Panse, MD;** No financial relationships exist with commercial interests.

**Genovefa Papanicolaou, MD;** No financial relationships exist with commercial interests.

**Geoffrey J. Gladstone, MD, FAACS;** No financial relationships exist with commercial interests.

**Geoffrey Potts MD, FAAD;** AbbVie - Investigator (Grants/Research Funding); Pfizer Inc. - Investigator (Grants/Research Funding)

**Geraldine C Ranasinghe;** No financial relationships exist with commercial interests.

**Gillian Weston, MD;** No financial relationships exist with commercial interests.

**Ginette Okoye, MD;** Pfizer Inc. - Investigator (Residency/Fellowship Program Funding); Unilever - Consultant (Honoraria)

**Gladys Telang, M.D.;** No financial relationships exist with commercial interests.

**Gloria Lin, MD, MS;** No financial relationships exist with commercial interests.

**Gordon H. Bae, MD;** No financial relationships exist with commercial interests.

**Gordon Rainey, MD;** No financial relationships exist with commercial interests.

**Gowri Kabbur, MD;** No financial relationships exist with commercial interests.

**Gregory Wolgamot, MD;** No financial relationships exist with commercial interests.

**Griffin Lentsch;** No financial relationships exist with commercial interests.

## H

**Hanieh Zargham;** No financial relationships exist with commercial interests.

**Hannah Chang BS;** No financial relationships exist with commercial interests.

**Hannah M. Pederson, MD;** No financial relationships exist with commercial interests.

**Hao Feng, MD;** No financial relationships exist with commercial interests.

**Haowei Han, BS;** No financial relationships exist with commercial interests.

**Hasan Khosravi, MD;** No financial relationships exist with commercial interests.

**Helena B Pasieka, MD;** No financial relationships exist with commercial interests.

**Henry W. Lim, MD;** Eli Lilly and Company - Speaker/Faculty Education (Honoraria); Ferndale Laboratories, Inc. - Advisory Board (Honoraria); Galderma Laboratories, LP - Advisory Board (Honoraria); Incyte Corporation - Investigator (Grants/Research Funding); ISDIN - Consultant (Fees); Johnson and Johnson - Speaker/Faculty Education (Fees); L'Oreal USA Inc. - Investigator (Grants/Research Funding); Pfizer Inc. - Investigator (Grants/Research Funding); Pierre Fabre Dermatologie - Consultant (Fees), Speaker/Faculty Education (Honoraria); RaMedical - Speaker/Faculty Education (Fees)

**Henry Zhu, MD;** No financial relationships exist with commercial interests.

**Hillary R. Elwood, MD;** No financial relationships exist with commercial interests.

**Hong-Wei Gao. MD;** No financial relationships exist with commercial interests.

**Hsiang-Cheng Chen. MD, PhD;** No financial relationships exist with commercial interests.

**Hua Liang Joel Lim;** No financial relationships exist with commercial interests.

**Hugo Castro-Malaspina, MD;** No financial relationships exist with commercial interests.

**Huili Kwong;** No financial relationships exist with commercial interests.

## I

**Ian W. Tattersall, MD, PhD;** No financial relationships exist with commercial interests.

**Idy Tam, MS;** No financial relationships exist with commercial interests.

**Ilana S. Rosman, M.D.;** Apollo Medical Optics Ltd. - Consultant (Fees); Genentech, Inc. - Consultant (Fees)

**Imge Hulur, MD, PhD;** No financial relationships exist with commercial interests.

**Iris Aronson MD;** No financial relationships exist with commercial interests.

**Isaac Brownell;** No financial relationships exist with commercial interests.

## J

**Jaclyn A. Mescher, MD;** No financial relationships exist with commercial interests.

**Jaclyn Smith, MD;** No financial relationships exist with commercial interests.

**Jacob G. Dodd, DO;** No financial relationships exist with commercial interests.

**Jacob W. Charny, MD;** No financial relationships exist with commercial interests.

**Jacqueline Junkins-Hopkins, MD;** No financial relationships exist with commercial interests.

**Jacquelyn Majerowski, MD;** No financial relationships exist with commercial interests.

**Jamal Saleh, MD, MS;** No financial relationships exist with commercial interests.

**James Ko, MD;** No financial relationships exist with commercial interests.

**James L. Gulley;** EMD Serono - Investigator

(Equipment);

**Jami L. Miller, MD;** No financial relationships exist with commercial interests.

**Jamie Zussman;** No financial relationships exist with commercial interests.

**Janaka KW Akarawita;** No financial relationships exist with commercial interests.

**Jane Messina, MD;** No financial relationships exist with commercial interests.

**Janelle Ricketts, MD;** No financial relationships exist with commercial interests.

**Jaroslaw J. Jedrych, MD;** No financial relationships exist with commercial interests.

**Jason Cohen;** No financial relationships exist with commercial interests.

**Jason Lee, MD;** No financial relationships exist with commercial interests.

**Jason M. Redman;** No financial relationships exist with commercial interests.

**Jason Marquart, M.D.;** No financial relationships exist with commercial interests.

**Jeff Gehlhausen, MD, PhD;** No financial relationships exist with commercial interests.

**Jeffery Z Hu, BS;** No financial relationships exist with commercial interests.

**Jeffrey A. Barnes, MD, PhD;** No financial relationships exist with commercial interests.

**Jehan Shah, MS;** No financial relationships exist with commercial interests.

**Jelena Vasic, MD;** No financial relationships exist with commercial interests.

**Jenna Roach MD;** No financial relationships exist with commercial interests.

**Jennifer Aronica, MD;** No financial relationships exist with commercial interests.

**Jennifer DeSimone;** Helsinn Healthcare - Speaker (Honoraria); Kyowa Hakko Kirin Pharma, Inc. - Advisory Board (Honoraria); Merck & Co., Inc. - Investigator (Grants/Research Funding); miRagen Therapeutics, Inc. - Investigator (Grants/Research Funding); Regeneron - Speaker (Honoraria); Soligenix, Inc - Investigator (Grants/Research Funding); Trillium Therapeutics, Inc - Investigator (Grants/Research Funding);

**Jennifer E Yeh, MD, PhD;** No financial relationships exist with commercial interests.

**Jennifer Gregory;** No financial relationships exist with commercial interests.

**Jennifer Huang, MD;** No financial relationships exist with commercial interests.

**Jennifer Ko, M.D., Ph.D.;** No financial relationships exist with commercial interests.

**Jennifer Sirois;** No financial relationships exist with commercial interests.

**Jennifer Tran, BA;** No financial relationships exist with commercial interests.

**Jeremy Schneider, MD;** No financial relationships exist with commercial interests.

**Jessica Kalen, MD;** No financial relationships exist with commercial interests.

**Jessica Sprague, MD;** No financial relationships exist with commercial interests.

**Jessika Davis, MD;** No financial relationships exist with commercial interests.

**JiaDe (Jeff) Yu, MD;** No financial relationships exist with commercial interests.

**Jinhong Dong, MS2;** No financial relationships exist with commercial interests.

**Joanie Pinard;** AbbVie - Advisory Board (Honoraria); Actelion - Advisory Board (Honoraria); Celgene - Speaker (Honoraria); Eli Lilly and Company - Advisory Board (Honoraria); Janssen Pharmaceuticals, Inc - Advisory Board (Honoraria); Leo Pharma Inc. - Advisory Board (Honoraria); Novartis - Advisory Board (Honoraria);

**Joanna Harp;** No financial relationships exist with commercial interests.

**Joaquin Brieva, MD;** No financial relationships exist with commercial interests.

**Jocelyn Hauser, PhD;** No financial relationships exist with commercial interests.

**Johann Gudjonsson, MD PhD;** AbbVie - Investigator (Grants/Research Funding); Genentech, Inc. - Investigator (Grants/Research Funding); miRagen Therapeutics, Inc. - Consultant (Honoraria); Novartis - Advisory Board (Honoraria); Sun Pharmaceutical Industries Ltd. - Investigator (Grants/Research Funding);

**John Denigris;** No financial relationships exist with commercial interests.

**John DeNigris, MD;** No financial relationships exist with commercial interests.

**John E. Call, MD;** No financial relationships exist with commercial interests.

**John Korman;** No financial relationships exist with commercial interests.

**John Murray, M.D.;** No financial relationships exist with commercial interests.

**Jonathan Kentley, MBBS;** No financial relationships exist with commercial interests.

**Jonhan Ho, MD, MS;** No financial relationships exist with commercial interests.

**Jordan V Wang, MD, MBE, MBA;** No financial relationships exist with commercial interests.

**Joseph Dyer, DO;** No financial relationships exist with commercial interests.

**Joseph English, III, MD;** No financial relationships exist with commercial interests.

**Joseph N. Mehrabi;** No financial relationships exist with commercial interests.

**Joshua Arbesman;** No financial relationships exist with commercial interests.

**Joshua J. Clark, MD;** No financial relationships exist with

commercial interests.

**Joshua W. Schimmel;** No financial relationships exist with commercial interests.

**Josiane Bourré-Tessier ;** No financial relationships exist with commercial interests.

**Joyce Siong See Lee;** No financial relationships exist with commercial interests.

**Judy Doong MD;** No financial relationships exist with commercial interests.

**Julia A. Siegel, MD;** No financial relationships exist with commercial interests.

**Julia Lehman, MD;** No financial relationships exist with commercial interests.

**Julie Lecours, MD;** No financial relationships exist with commercial interests.

**Julie Neidich, MD;** No financial relationships exist with commercial interests.

**Julie Y. Tse;** No financial relationships exist with commercial interests.

**Julio Poveda;** No financial relationships exist with commercial interests.

**Julius Y. Strauss;** No financial relationships exist with commercial interests.

**Jun Lu, MD;** No financial relationships exist with commercial interests.

**Justin Bandino, MD;** No financial relationships exist with commercial interests.

**Justin Nguyen BS;** No financial relationships exist with commercial interests.

**Justin P. Bandino, MD, Maj U.S. Air Force;** No financial relationships exist with commercial interests.

Justin Remer MD; No financial relationships exist with commercial interests.

## K

**Kalee Shah, MD;** No financial relationships exist with commercial interests.

**Kamaria Nelson, MD, MHS;** Janssen Biotech - Other (Grants/Research Funding);

**Karolyn Wanat, MD;** No financial relationships exist with commercial interests.

**Karthik Krishnamurthy;** AbbVie - Speaker (Fees); Janssen Pharmaceuticals, Inc - Speaker (Fees); Regeneron Pharmaceuticals, Inc. - Speaker (Fees); Sanofi/Regeneron - Speaker (Fees);

**Katalin Ferenczi, MD;** No financial relationships exist with commercial interests.

**Kate Kimes, DO;** No financial relationships exist with commercial interests.

**Katherine Brick;** No financial relationships exist with commercial interests.

**Katherine Burke, MD;** No financial relationships exist with commercial interests.

**Katherine Glaser;** No financial relationships exist with commercial interests.

**Kathryn A. Zug, MD;** No financial relationships exist with commercial interests.

**Kathryn Bentivegna;** No financial relationships exist with commercial interests.

**Kathryn Lee Anderson;** No financial relationships exist with commercial interests.

**Katie B. Homan, MD;** No financial relationships exist with commercial interests.

**Katrice Karanfilian;** No financial relationships exist with commercial interests.

**Keith Morley, MD;** No financial relationships exist with commercial interests.

**Kelli Bryant, MD;** No financial relationships exist with commercial interests.

**Kelly Lo;** No financial relationships exist with commercial interests.

**Kenneth G. Linden;** Genentech, Inc. - Investigator (Grants/Research Funding);

**Kenneth Tomecki;** No financial relationships exist with commercial interests.

**Kent S. Handfield, MD, FAAD;** No financial relationships exist with commercial interests.

**Keri Chaney, MD, FAAD;** Regeneron - Investigator (Grants/Research Funding);

**Kerri E. Rieger MD, PhD;** No financial relationships exist with commercial interests.

**Kerry Hennessy, MD;** No financial relationships exist with commercial interests.

**Kevin Gaddis, MD;** No financial relationships exist with commercial interests.

**Kevin Krauland, MD;** No financial relationships exist with commercial interests.

**Kevin Luk, MD, MPH;** No financial relationships exist with commercial interests.

**Kevin R Patel, MD;** No financial relationships exist with commercial interests.

**Kevin S. Emerick;** No financial relationships exist with commercial interests.

**Kevin White;** No financial relationships exist with commercial interests.

**khaled Gharib MD;** No financial relationships exist with commercial interests.

**Kimberly Chun, MD;** No financial relationships exist with commercial interests.

**Kimberly Huerth, MD, M,.Ed;** No financial relationships exist with commercial interests.

**Konstantinos Linos, MD;** No financial relationships exist with commercial interests.

**Kord Honda;** No financial relationships exist with commercial interests.

**Kristen Fernandez, MD;** No financial relationships exist with commercial interests.

**Kristen Holland, MD;** AbbVie - Employee (Salary);

Celgene - Investigator (Fees); Pfizer Inc. - Advisory Board (Fees), Investigator (Fees); Sanofi - Advisory Board (Fees), Investigator (Fees);

**Kristen Lo Sicco;** No financial relationships exist with commercial interests.

**Kristen Russomanno,** MD; No financial relationships exist with commercial interests.

**Kristine Cornejo, MD;** No financial relationships exist with commercial interests.

**Kristine M. Cornejo;** No financial relationships exist with commercial interests.

**Kunchang (Charles) Song, MD;** No financial relationships exist with commercial interests.

## L

**Laurel L Wessman, MD;** No financial relationships exist with commercial interests.

**Lauren Brin-Hermans;** No financial relationships exist with commercial interests.

**Lauren C Payne, MD;** No financial relationships exist with commercial interests.

**Lauren Guggina;** No financial relationships exist with commercial interests.

**Lauren Hoffman, MD;** No financial relationships exist with commercial interests.

**Lauren Metterle, MD;** No financial relationships exist with commercial interests.

**Lauren Mihailides, MD;** No financial relationships exist with commercial interests.

**Lawrence A. Mark;** No financial relationships exist with commercial interests.

**Leah A. Cardwell, MD;** No financial relationships exist with commercial interests.

**Leandra A Barnes, MD;** No financial relationships exist with commercial interests.

**Leigh Compton, MD, PhD;** No financial relationships exist with commercial interests.

**Leigh Hatch, BS;** No financial relationships exist with commercial interests.

**Leila Cattelan;** No financial relationships exist with commercial interests.

**Leslie Robinson-Bostom, M.D.;** No financial relationships exist with commercial interests.

**Lida Zheng, MD;** No financial relationships exist with commercial interests.

**Lina Husienzad, MD;** No financial relationships exist with commercial interests.

**Linda Doan MD, PhD;** No financial relationships exist with commercial interests.

**Linda T. Doan;** No financial relationships exist with commercial interests.

**Lindsay C. Strowd;** Actelion - Speaker (Honoraria); Galderma USA - Consultant (Honoraria); Pfizer Inc. - Investigator (Grants/Research Funding); Regeneron - Advisory Board (Honoraria)

**Lindsay McCormack, BA;** No financial relationships exist with commercial interests.

**Lionel Bercovitch, MD;** Wiley & Sons, Inc. - Other (Honoraria)

**Lisa Ishii, MD;** No financial relationships exist with commercial interests.

**Li-Wei Chang, MD, DSc;** No financial relationships exist with commercial interests.

**Lloyd Cleaver, D.O.;** No financial relationships exist with commercial interests.

**Logan Kolb, DO;** No financial relationships exist with commercial interests.

**Lorena Dollani, MD;** No financial relationships exist with commercial interests.

**Lu Yin;** No financial relationships exist with commercial interests.

**Lubomir Sokol, MD, PhD;** No financial relationships exist with commercial interests.

**Lucia Seminario-Vidal, MD, PhD;** AbbVie - Other (Residency/Fellowship Program Funding); Aptis Partners - Consultant (Honoraria); Boehringer Ingelheim - Investigator (No Compensation Received); Bristol-Myers Squibb - Investigator (No Compensation Received); Celgene Corporation - Investigator (No Compensation Received); Corrona, Inc. - Investigator (No Compensation Received); Eisai Co., Ltd - Investigator (No Compensation Received); Eli Lilly and Company - Investigator (No Compensation Received); Elorac, Inc. - Investigator (No Compensation Received); Glenmark Generics Inc. - Investigator (No Compensation Received); Helsinn Healthcare - Advisory Board (Honoraria), Speaker/Faculty Education (Honoraria); Kyowa Hakko Kirin Pharma, Inc. - Advisory Board (Honoraria), Speaker/Faculty Education (Honoraria); Novartis - Advisory Board (Honoraria), Investigator (No Compensation Received); OncoDerm LLC - Consultant (Honoraria); Soligenix, Inc - Investigator (No Compensation Received);

**Lucy Ledyard, MD;** No financial relationships exist with commercial interests.

**Lyn M. Duncan, MD;** No financial relationships exist with commercial interests.

**Lyn McDivitt Duncan;** No financial relationships exist with commercial interests.

**Lynda Vrooman, MD;** No financial relationships exist with commercial interests.

## M

**Mackenzie O'Connor, BS;** No financial relationships exist with commercial interests.

**Madeline Romano, DO;** No financial relationships exist with commercial interests.

**Maheera Farsi, DO;** No financial relationships exist with commercial interests.

**Manisha Manmohan;** No financial relationships exist with commercial interests.
**Marcia G Tonnesen;** No financial relationships exist with commercial interests.
**Maressa C. Criscito MD;** No financial relationships exist with commercial interests.
**Margaret Gatti-Mays;** No financial relationships exist with commercial interests.
**Margaret Green, MD;** No financial relationships exist with commercial interests.
**Margaret Hammond;** No financial relationships exist with commercial interests.
**Margo J. Reeder;** AbbVie - Investigator (No Compensation Received);
**Maria Colavincenzo;** No financial relationships exist with commercial interests.
**Maria M. Hornberger BS, 2d Lt U.S. Air Force;** No financial relationships exist with commercial interests.
**Mark Ash, MD, MS;** No financial relationships exist with commercial interests.
**Mark Scharf;** No financial relationships exist with commercial interests.
**Marlyanne M. Pol-Rodriguez, MD;** No financial relationships exist with commercial interests.
**Marshall A. Guill MD;** No financial relationships exist with commercial interests.
**Marta Petersen;** XOMA (US) LLC - Investigator (Grants/Research Funding)
**Martin Michael Nunez, M.D.; No** financial relationships exist with commercial interests.
**Mary E. Logue, MD;** No financial relationships exist with commercial interests.
**Mary Maiberger, MD;** No financial relationships exist with commercial interests.
**Mary Noland;** No financial relationships exist with commercial interests.
**Marylee Braniecki MD;** No financial relationships exist with commercial interests.
**Matthew Grant;** No financial relationships exist with commercial interests.
**Matthew Perkins;** No financial relationships exist with commercial interests.
**May Chan, MD;** No financial relationships exist with commercial interests.
**Meena Manivannan, MS4;** No financial relationships exist with commercial interests.
**Megan M. Lockwood, MD;** No financial relationships exist with commercial interests.
**Melissa Wasserstein;** Sanofi Genzyme - Consultant (Honoraria); Takeda Pharmaceuticals USA Inc - Consultant (Honoraria)
**Mellisa Piliang;** No financial relationships exist with commercial interests.
**Merrick Kozak;** No financial relationships exist with commercial interests.
**Micaella R. Zubkov, MS3;** No financial relationships exist with commercial interests.
**Michael Barton, MD;** No financial relationships exist with commercial interests.
**Michael Cardis, MD;** No financial relationships exist with commercial interests.
**Michael Dewall;** No financial relationships exist with commercial interests.
**Michael Fong, D.O.;** No financial relationships exist with commercial interests.
**Michael J Camilleri, MD;** No financial relationships exist with commercial interests.
**Michael J. Isaacs, MD;** No financial relationships exist with commercial interests.
**Michael Murphy, MD;** No financial relationships exist with commercial interests.
**Michael Renzi, MD;** No financial relationships exist with commercial interests.
**Michael Storonsky, MD;** No financial relationships exist with commercial interests.
**Michelle Bain;** No financial relationships exist with commercial interests.
**Michelle Croda, BS;** No financial relationships exist with commercial interests.
**Milena J. Lyon, MD;** No financial relationships exist with commercial interests.
**Miranda Rosenberg, MD;** No financial relationships exist with commercial interests.
**Misha Rosenbach, MD;** aTyr Pharma - Consultant (Honoraria); Derm101 - Independent Contractor (Honoraria); JAMA - Employee (Salary); Janssen Pharmaceuticals, Inc - Consultant (Honoraria); Merck & Co., Inc - Consultant (Honoraria); Promet Therapeutics, LLC - Investigator (Grants/Research Funding)
**Misty G Eleryan, MD, MS;** No financial relationships exist with commercial interests.
**Mitual Amin, MD;** No financial relationships exist with commercial interests.
**Molly Yancovitz;** No financial relationships exist with commercial interests.

## N

**Naeha Gupta, DO, MS;** No financial relationships exist with commercial interests.
**Nancy House, MD;** No financial relationships exist with commercial interests.
**Natasha Mesinkovska MD, PhD;** No financial relationships exist with commercial interests.
**Nathan Cleaver, D.O.;** No financial relationships exist with commercial interests.
**Nathan W. Rojek;** No financial relationships exist with commercial interests.
**Nathaniel Jellinek, M.D.;** No financial relationships exist

with commercial interests.

**Nayha Patel, MS;** No financial relationships exist with commercial interests.

**Neda Nikbakht;** No financial relationships exist with commercial interests.

**Neel Nath;** No financial relationships exist with commercial interests.

**Nemanja Rodic MD;** No financial relationships exist with commercial interests.

**Nessa Aghazadeh Mohandesi, MD;** No financial relationships exist with commercial interests.

**Nicholas Sebes, MD;** No financial relationships exist with commercial interests.

**Nicole Burkemper, MD;** No financial relationships exist with commercial interests.

**Nicole Meunier, MD;** No financial relationships exist with commercial interests.

**Nidhi Shah;** No financial relationships exist with commercial interests.

**Nikita Lakdawala;** No financial relationships exist with commercial interests.

**Niluka D Paththinige, MBBS, MD;** No financial relationships exist with commercial interests.

**Nima Milani-Nejad, MD., Ph.D;** No financial relationships exist with commercial interests.

**Nneka I. Comfere, M.D;** No financial relationships exist with commercial interests.

**Nooshin K. Brinster, MD;** No financial relationships exist with commercial interests.

**Norhan Shamloul;** No financial relationships exist with commercial interests.

## O

**Océane Landon-Cardinal;** No financial relationships exist with commercial interests.

**Olayemi Sokumbi, MD;** No financial relationships exist with commercial interests.

**Olivia Arballo, DO;** No financial relationships exist with commercial interests.

**Olivia Lai;** No financial relationships exist with commercial interests.

**Olivia M.T. Davies, BS;** No financial relationships exist with commercial interests.

**Omar P. Sangueza;** No financial relationships exist with commercial interests.

**Oyetewa Oyerinde, MD;** No financial relationships exist with commercial interests.

## P

**Paetra Ruddy, MD;** No financial relationships exist with commercial interests.

**Palak K. Parekh, MD;** No financial relationships exist with commercial interests.

**Parastoo Dahi, MD;** No financial relationships exist with commercial interests.

**Paul B. Googe;** No financial relationships exist with commercial interests.

**Paul Drake;** No financial relationships exist with commercial interests.

**Paul Griffiths;** No financial relationships exist with commercial interests.

**Pei Ming Yeo, MBBS, MRCP;** No financial relationships exist with commercial interests.

**Peter Sigal, DO;** No financial relationships exist with commercial interests.

**Philip Song, MD;** No financial relationships exist with commercial interests.

**Phillip Devlin, MD;** No financial relationships exist with commercial interests.

**Pooja Khera, MD;** No financial relationships exist with commercial interests.

**Prasanna LDS Karunarathne;** No financial relationships exist with commercial interests.

## R

**Rachael C. Saporito, MD;** No financial relationships exist with commercial interests.

**Rachel Barker, MD;** No financial relationships exist with commercial interests.

**Rachel Blasiak;** No financial relationships exist with commercial interests.

**Rachel Dunlap;** No financial relationships exist with commercial interests.

**Rachel E Maiman, MD;** No financial relationships exist with commercial interests.

**Rachel P. Barker, MD;** No financial relationships exist with commercial interests.

**Rachelle Lacey, MD;** No financial relationships exist with commercial interests.

**Raj Chovatiya, MD, PhD;** No financial relationships exist with commercial interests.

**Rajit Malliah, MD;** No financial relationships exist with commercial interests.

**Randie H. Kim, MD, PhD;** No financial relationships exist with commercial interests.

**Rasnik K. Singh, MD;** No financial relationships exist with commercial interests.

**Reid Waldman, MD;** No financial relationships exist with commercial interests.

**Remi Hamel, MD;** No financial relationships exist with commercial interests.

**Renata Dalla Costa, MD;** No financial relationships exist with commercial interests.

**Ricardo Guerra;** No financial relationships exist with commercial interests.

**Richard Miller, DO;** AbbVie - Speaker/Faculty Education (Honoraria);

**Rima I. Ghamrawi;** No financial relationships exist with commercial interests.

**Robert E. LeBlanc MD;** No financial relationships exist with commercial interests.

**Robert Eilers, MD FAAD;** No financial relationships exist with commercial interests.

**Robert Kowtoniuk, DO;** No financial relationships exist with commercial interests.

**Robert Segal, MD;** No financial relationships exist with commercial interests.

**Robert Simonds, MD;** No financial relationships exist with commercial interests.

**Roberto Novoa;** No financial relationships exist with commercial interests.

**Ronda S Farah,** MD; Capillus Laser Caps - Other (Equipment); Early Sullivan Wright Gizer & McRae LLP - Consultant (No Compensation Received); Eclipse Medical - Other (Grants/Research Funding); Gilead Sciences - Stockholder (No Compensation Received); HairMax - Other (Equipment); Inovio Pharmaceuticals, Inc - Stockholder (No Compensation Received); LaserCap - Other (Equipment); Pfizer Inc. - Stockholder (No Compensation Received); Syneron Candela - Other (Grants/Research Funding); Theradome - Other (Equipment); WEN - Investigator (Grants/Research Funding)

**Rosalynn M. Nazarian;** No financial relationships exist with commercial interests.

**Roxanna Arakozie, DO;** No financial relationships exist with commercial interests.

**Roya Nazarian;** No financial relationships exist with commercial interests.

**Rugvedita Parakh;** No financial relationships exist with commercial interests.

**Ruth Ann Vleugels;** No financial relationships exist with commercial interests.

**Ryanne Brown;** No financial relationships exist with commercial interests.

## S

**S. Max Vale, MD;** No financial relationships exist with commercial interests.

**S. Tyler Hollmig, MD;** Pathway Genomics - Advisory Board (Stock Options); Sciton Inc. - Speaker/Faculty Education (Honoraria)

**Sabra Leitenberger, MD;** No financial relationships exist with commercial interests.

**Samantha Bartling, D.O.;** No financial relationships exist with commercial interests.

**Samantha Gardeen, MD;** No financial relationships exist with commercial interests.

**Samantha Shwe;** No financial relationships exist with commercial interests.

**Sandra Davar, MD;** No financial relationships exist with commercial interests.

**Sara Dill;** Allergan, Inc - Consultant (Fees); Almirall - Consultant (Fees);

**Sara Moradi Tuchayi, MD, MPH;** Brixton Biosciences - Stockholder (Stock)

**Sarah Hogan;** No financial relationships exist with commercial interests.

**Sarah Wolfe;** No financial relationships exist with commercial interests.

**Sayeeda Ahsanuddin, MD;** No financial relationships exist with commercial interests.

**Scott Norton;** No financial relationships exist with commercial interests.

**Sean R. Christensen, MD, PhD;** Leo Pharma Inc. - Advisory Board (Fees); PellePharm, Inc. - Investigator (Grants/Research Funding); Sanofi/Regeneron - Advisory Board (Fees)

**Seth Lofgreen, MD;** No financial relationships exist with commercial interests.

**Shaan Patel, MD, MBA;** No financial relationships exist with commercial interests.

**Shadi Damanpour;** No financial relationships exist with commercial interests.

**Shahab Babakoohi, MD, FACP;** No financial relationships exist with commercial interests.

**Shane A. Meehan, MD;** No financial relationships exist with commercial interests.

**Shaofeng Yan, MD;** No financial relationships exist with commercial interests.

**Sharon Blackford;** No financial relationships exist with commercial interests.

**Sheena Desai, BS;** No financial relationships exist with commercial interests.

**Sheilagh Maguiness;** Regeneron Pharmaceuticals, Inc. - Advisory Board (Honoraria); Stryke Club LLC - Founder (No Compensation Received)

**Sheilagh Maguiness, MD;** Regeneron Pharmaceuticals, Inc. - Advisory Board (Honoraria); Stryke Club LLC - Founder (No Compensation Received);

**Shilpa Mehta;** No financial relationships exist with commercial interests.

**Shivani Patel, MD;** No financial relationships exist with commercial interests.

**Solveig Ophaug, MD;** No financial relationships exist with commercial interests.

**Sonny Huitron, DO;** No financial relationships exist with commercial interests.

**Sook Hwang, MD;** No financial relationships exist with commercial interests.

**Sophia Akhiyat, MD;** No financial relationships exist with commercial interests.

**Sophia Zhang, BS;** No financial relationships exist with commercial interests.

**Spencer Bezalel, MD;** No financial relationships exist with commercial interests.

**Stefanie Altmann, DO;** No financial relationships exist with commercial interests.
**Stephanie Kao, BA;** No financial relationships exist with commercial interests.
**Stephanie R. Jackson Cullison, MD, PhD;** No financial relationships exist with commercial interests.
**Stephen Vance, MD, MBA;** No financial relationships exist with commercial interests.
**Steven Billings, MD;** No financial relationships exist with commercial interests.
**Steven Lander, BA;** No financial relationships exist with commercial interests.
**Steven Manders, MD;** No financial relationships exist with commercial interests.
**Steven T. Chen, MD, MPH, MS-HPEd;** No financial relationships exist with commercial interests.
**Sun Young Ruggeri;** No financial relationships exist with commercial interests.
**Susan Bayliss, MD;** Scioderm - Investigator (Grants/Research Funding);
**Suzanne Ward, MD;** No financial relationships exist with commercial interests.
**Sylvia Hsu, MD;** No financial relationships exist with commercial interests.

## T

**Tasos Gogakos, MD, PhD;** No financial relationships exist with commercial interests.
**Taylor Gray, DO;** No financial relationships exist with commercial interests.
**Teresa Ro;** No financial relationships exist with commercial interests.
**Thomas D. Horn;** No financial relationships exist with commercial interests.
**Thomas Klis MD;** No financial relationships exist with commercial interests.
**Thomas Scharnitz, MD;** No financial relationships exist with commercial interests.
**Tiffany Chen, MD;** No financial relationships exist with commercial interests.
**Timothy A. Durso, MD;** No financial relationships exist with commercial interests.
**Timothy Patton;** No financial relationships exist with commercial interests.
**Ting Yang, MD, PhD;** No financial relationships exist with commercial interests.
**Tor Shwayder, MD;** Regeneron - Speaker (Honoraria)
**Toral Vaidya, MPH;** No financial relationships exist with commercial interests.
**Tracy T. Ngo, BS;** No financial relationships exist with commercial interests.
**Trevor K. Young;** No financial relationships exist with commercial interests.
**Trevor Young, BS;** No financial relationships exist with commercial interests.
**Tyler J. Willenbrink, MD;** No financial relationships exist with commercial interests.
**Tyler Menge, MD;** No financial relationships exist with commercial interests.

## U

**Usman Asad, BS;** No financial relationships exist with commercial interests.

## V

**Valerie M. Carlberg, MD;** No financial relationships exist with commercial interests.
**Valerie Shiu;** No financial relationships exist with commercial interests.
**Vanessa B Voss;** No financial relationships exist with commercial interests.
**Vassiliki Papastavros, MD;** No financial relationships exist with commercial interests.
**Vikash S. Oza MD;** No financial relationships exist with commercial interests.
**Vivian Laquer MD;** No financial relationships exist with commercial interests.

## W

**W. Clark Lambert, MD, PhD;** Leica Corporation - Consultant (Equipment);
**Warren Chan;** Howard Hughes Medical Institute - Other (Grants/Research Funding)
**Warren Piette MD;** No financial relationships exist with commercial interests.
**Warren R. Heymann, MD;** No financial relationships exist with commercial interests.
**Wei-Ming Wang. MD, PhD;** No financial relationships exist with commercial interests.
**Wen Ai Woo, BSc(Hons), MBBS, MRCP(UK);** No financial relationships exist with commercial interests.
**Wenhua Liu, MD;** No financial relationships exist with commercial interests.
**Wesley R. Samore, MD;** No financial relationships exist with commercial interests.
**Whitney T. Gao, BA;** No financial relationships exist with commercial interests.
**Whitney Vinson, MD;** No financial relationships exist with commercial interests.
**William James, MD;** Elsevier Inc. - Other (Other Financial Benefit); WebMD - Other (Honoraria);
**Wilma Bergfeld;** Aclaris Therapeutics Inc. - Investigator (No Compensation Received); Cassiopea S.p.A. - Advisory Board (Honoraria); Concert Pharmaceuticals - Investigator (No Compensation Received); Eli Lilly and Company - Consultant (No Compensation Received); Incyte Corporation - Investigator (No Compensation

Received); Johnson and Johnson Consumer Products Company - Advisory Board (Honoraria); Kythera - Advisory Board (Honoraria), Investigator (No Compensation Received); Pfizer Inc. - Advisory Board (No Compensation Received); Procter & Gamble Company - Advisory Board (Honoraria); Samumed, LLC - Advisory Board (Honoraria), Investigator (No Compensation Received)

## X

**Xiaohui Zhang, MD;** No financial relationships exist with commercial interests.

**Xiaoxiao Li, MD, PhD;** No financial relationships exist with commercial interests.

**Xiaoying Liu MD;** No financial relationships exist with commercial interests.

## Y

**Yen Loo Lim;** No financial relationships exist with commercial interests.

**Yevgeniy Balagula, MD;** No financial relationships exist with commercial interests.

**Yevgeniy Semenov, MD;** No financial relationships exist with commercial interests.

**Yi Gao, MD;** No financial relationships exist with commercial interests.

**Yiang Hui;** No financial relationships exist with commercial interests.

**Yi-Wei Tang, MD, PhD;** No financial relationships exist with commercial interests.

**Yun Tong, MD;** No financial relationships exist with commercial interests.

**Yun Xue MD;** No financial relationships exist with commercial interests.

**Yuri Bunimovich, MD, PhD;** No financial relationships exist with commercial interests.

**Yvonne Chiu, MD;** Novan - Data Safety Monitoring Board (Fees)

## Z

**Zahra Haider, MBBS, iBSc, MRCP (UK);** No financial relationships exist with commercial interests.