AAD American Academy of Dermatology 1938

Directions in Residency

Winter 2016

Official Publication of the Residents/Fellows Committee, American Academy of Dermatology

Seeing double

Adapting resident pathology education for the big (and small) screen

By Euphemia W. Mu, MD, and Shane A. Meehan, MD

Dermatology residents are interested in learning dermatopathology for a variety of reasons — whether to pass their board exams or to enhance patient care through clinicopathological correlation. Notably, dermatology residency programs nationwide dedicate an average of 30 percent of didactic time to teaching dermatopathology[1]. Dermatopathology, however, remains one of the more challenging aspects of dermatology residency to master.

Barriers to learning dermatopathology

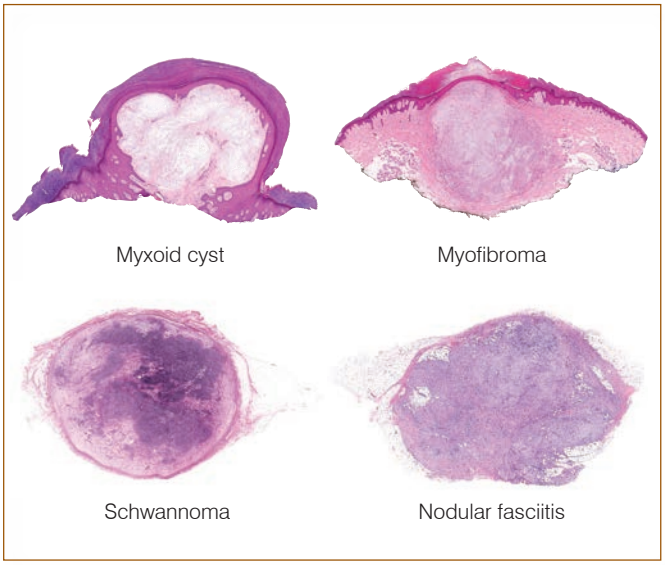
Learning dermatopathology requires regular practice in order to recognize visual patterns just as in clinical dermatology, but residents have less exposure to histology. Many residents are familiar with the frustrating cycle of learning and subsequently forgetting dermatopathology during their training without consistent review.

We became interested in developing ways to enhance dermatopathology education while studying visual adaptive learning. In our survey of residents, the greatest barrier to refining dermatopathology visual recall was lack of access to an easily accessible and organized collection of high quality histologic images. Traditional resources used to study histology either have limited image quality, such as printed textbooks, or are inconvenient to use when studying from home, such as teaching slides.

We decided to write an electronic book, *Doppelgängers & Stags*, that features high yield cases to maximize efficiency of learning dermatopathology. We sought to capture and curate digital images using virtual microscopy platforms to recapitulate the experience of looking at slides from the comfort of home.

Why doppelgängers and why stags?

"Interesting title...what does it mean?" This has been the most frequent inquiry by readers since we published *Doppelgängers & Stags* this year. The title refers to the paired (doppelgänger) and stand-alone (stag) cases, respectively, as they appear in the ebook. The doppelgänger cases allow readers to quickly compare and contrast relevant histologic features of commonly confused diagnoses. In doing so, one is more likely to recall the defining features that distinguish two similar appearing diagnoses. **Figure 1** (see p. 3) is an example of paired cases, cysts that appear similar at low power. At high power, however, differences in the epidermal versus tricholemmal keratinization of the cyst walls become apparent, highlighting the key finding differentiating an infundibular (epidermal inclusion) cyst from a pilar cyst, respectively (**Figure 2**).



In contrast to doppelgängers, stand-alone or "stag" cases represent more esoteric or distinct diagnoses that may appear on the in-service or board examination. **Figure 3** shows an example case containing lobules of serous cells that exhibit deeply basophilic granular cytoplasm — findings that characterize a parotid gland. The multiple choice format of this section provides instant, interactive feedback.

Electronic platforms in dermatologic residency education

Digital media exhibits a number of advantages that augment the value of traditional textbooks, particularly in presenting visual information, which is especially useful in fields like dermatology. The high resolution of electronic digital media more closely imitates the experience of examining glass slides when compared to viewing textbook images. The convenience, interactivity, and portability of electronic platforms help accommodate a busy dermatology resident's study sched-

See ***SEEING DOUBLE*** on p. 3

Inside *this* issue

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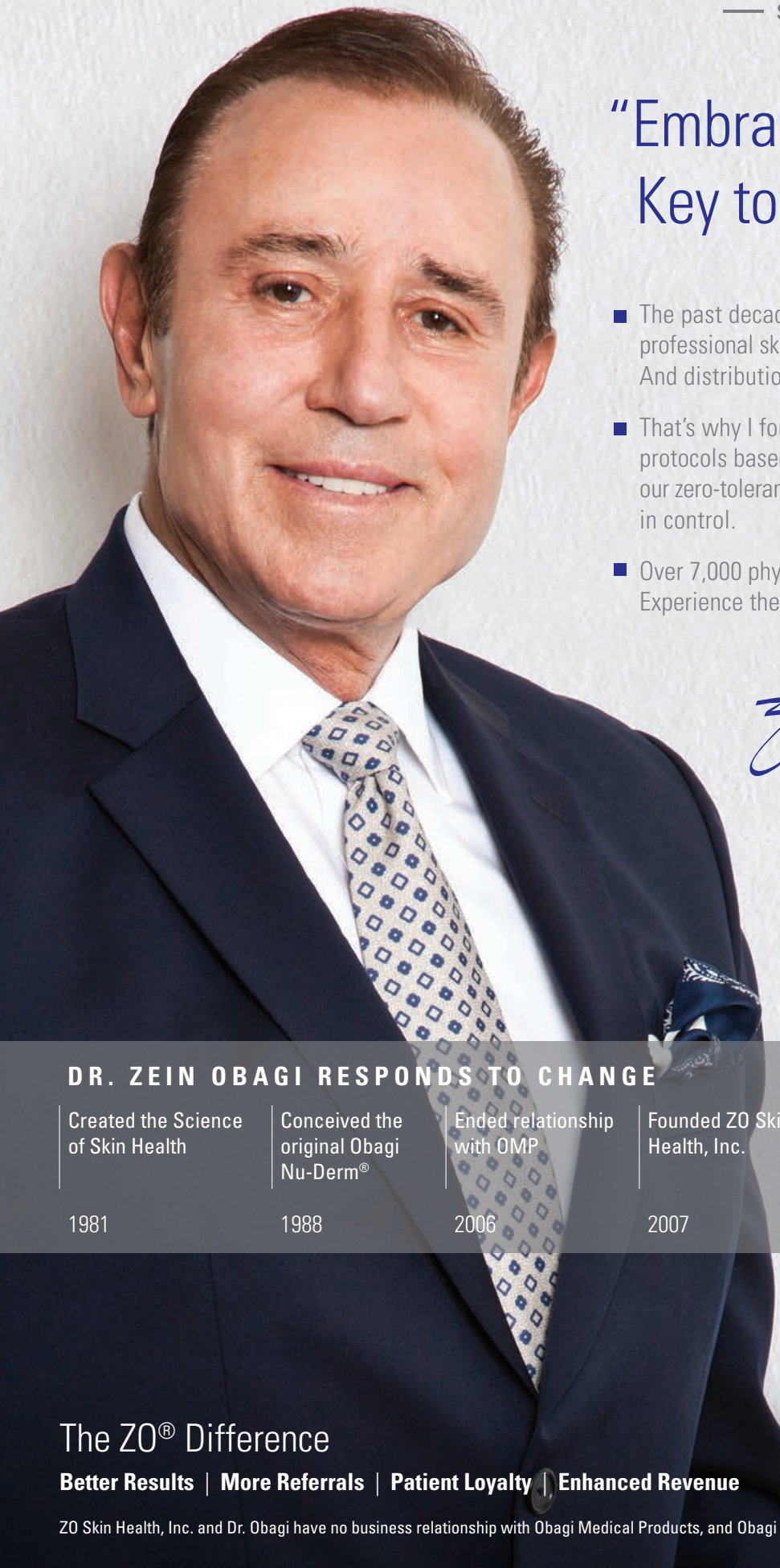

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SEEING DOUBLE *from p. 1*

ule. In addition, electronic sources offer efficient cross referencing and keyword searching to allow one to quickly distinguish between diagnoses. Digital resources enable rapid review of visual information with convenience and resolution, and thereby serve as a powerful tool for enhancing visual memory in dermatopathology and dermatology.

The secret to lasting memories

In the process of creating an instructional ebook, we enjoyed exploring new technologies for expanding our academic resources. But it was the camaraderie and collaborations with our colleagues that most enriched the experience. The teaching cases in our book have inspired numerous discussions and debates. During residency, we are tasked with mastering an extraordinary body of knowledge, and the friendships we forge as we share in daily practice imbue the journey with lasting memories. We hope our project captures the fun we have had learning with our patients, residents, fellows, and attendings, and that it further challenges us to marvel at the beauty of our field. DR

References:

1. Hinshaw, M., et al., The current state of dermatopathology education: a survey of the Association of Professors of Dermatology. J Cutan Pathol, 2009. 36(6): p. 620-8.1321-1366. Print.

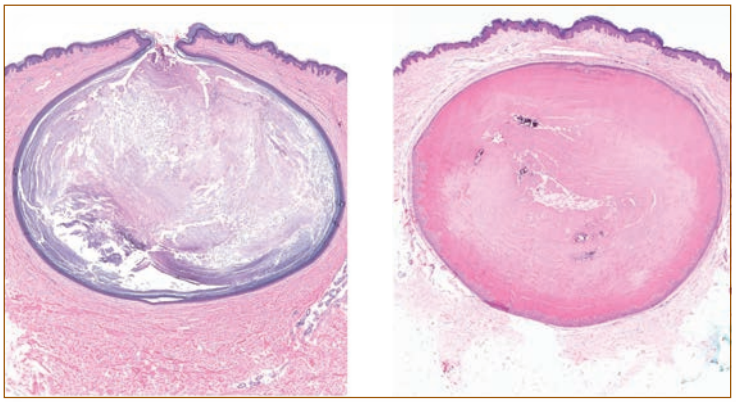


Figure 1

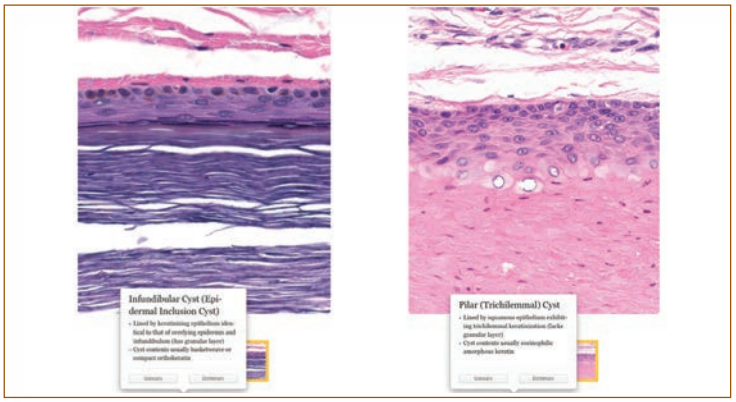


Figure 2

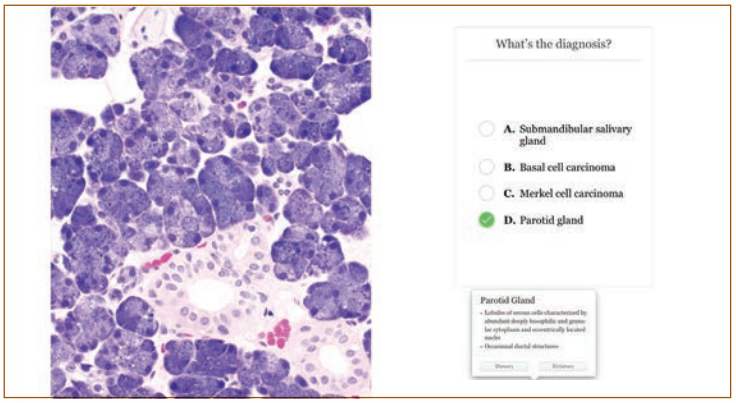
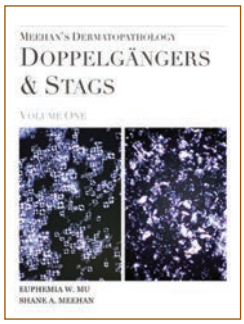


Figure 3

Euphemia W. Mu, MD (PG-4)

and Shane A. Meehan, MD, associate professor, are in the NYU School of Medicine at the Ronald O. Perelman Dept. of Dermatology. Their recently published e-book, Doppelgängers & Stags, *is available through the Apple iTunes store at* **https://itunes.apple.com/us/book/meehans-dermato pathology-doppelgangers/id1128545158?mt=11**.



Do you have an innovative method of study? ***We'd like to know about it!*** *Email dmonti@aad.org.*

Most Common Cutaneous Metastasis Based on Anatomical Location

by Laura Battle, MD

Location	Malignancy Type		Clinical Presentation	Histopathologic Findings	Staining pattern
Scalp	Men	^Lung	Alopecia neoplastica	Small cell: Scant cytoplasm	+keratins, +TTF-1, +CD56, +/-NSE, +/-chromogranin, +/-synaptophysin
				Non-small cell (adenocarcinoma): Gland formation	+CK7, +/-TTF-1
		Renal- Clear cell carcinoma	Pyogenic granuloma-like	Prominent hemorrhage, clear cells	+EMA, +CD10, +PAX 8
			Alopecia neoplastica	Clear cells	+EMA, +CD10, +PAX 8
	Women	*Breast	Alopecia neoplastica	Lobular: Single filing	+CK7, +GCDFR-15, +ER/PR, -CK20
				Ductal: Glandular structures, comedo necrosis	+CK7, +GCDFR-15, +ER/PR, -CK20
Face and neck	Men	SCC of the head and neck	Nonspecific papulonodules	Large cells with intercellular bridges, keratin pearls	+CK5/6, +p63, +CK903
		^Lung	"Clown nose" (reddish-brown bulge of nasal tip)	Small cell and non-small cell: see above	See above
	Women	*Breast	Nonspecific papulonodules	Lobular and Ductal: See above	See above
	Both	ALL	Nonspecific papulonodules	Monotonous infiltrate, "sheets of cells"	B-cell type MC: +TdT, +CD5, +CD19, +CD20, +CD10
		CLL	Nonspecific papulonodules	Monotonous infiltrate, "sheets of cells"	+CD5, +CD20, +CD43
		AML	Nonspecific papulonodules, granulocytic sarcoma "chloroma," green lesions	Monotonous infiltrate, "sheets of cells"	+CD13, +CD33, +CD68, +myeloperoxidase
		CML	Nonspecific papulonodules	Monotonous infiltrate, "sheets of cells"	-leukocyte alkaline phosphatase
Lower extremities	Both	Melanoma	Black papules and nodules, though they may be amelanotic	Epithelioid cells with prominent nucleoli confined to the dermis	+S-100, +Melan-A (MART-1), +HMB45, +MITF
Chest	Men	^Lung	Nonspecific papulonodules	Small cell and non-small cell: See above	See above
	Women	*Breast	Inflammatory carcinoma (carcinoma erysipeloides)	Tumor cells in dilated lymphatic vessels	+CK7, +GCDFR-15, +ER/PR, -CK20
			En cuirasse: Indurated with *peau d'orange* appearance	Fibrosis with infiltrating tumor cells	+CK7, +GCDFR-15, +ER/PR, -CK20
			Carcinoma telangiectodes: Red-violent papules	Tumor cells in lymphatic vessels, RBC sludging	+CK7, +GCDFR-15, +ER/PR, -CK20
			Paget's disease	Large, atypical epithelial cells with abundant cytoplasm, "eyeliner sign"	+CK7, +CAM 5.2, +EMA, +AE1/AE3, +PAS

Laura Battle, MD, is PGY-3 at the University of Arkansas for Medical Sciences.

Most Common Cutaneous Metastasis Based on Anatomical Location

by Laura Battle, MD

Location	Malignancy Type		Clinical Presentation	Histopathologic Findings	Staining pattern
Abdomen	Men	Colon	Peri-umbilical nodule "Sister Mary Joseph nodule"	Columnar cells, intracytoplasmic mucin, gland formation, "dirty" necrosis	+CK20, +CK7, +CDX2, +villin
		^Lung	Nonspecific papulonodules	Small cell and non-small cell: See above	See above
		Stomach	Peri-umbilical nodule "Sister Mary Joseph nodule"	Signet ring cells	+CK7, +CK20, +CDX2
	Women	Colon	Peri-umbilical nodule "Sister Mary Joseph nodule"	Columnar cells, intracytoplasmic mucin, gland formation, "dirty" necrosis	+CK20, +CK7, +CDX2, +villin
Back	Men	^Lung	Nonspecific papulonodules	Small cell and non-small cell: See above	See above
	Women	*Breast	Nonspecific	Lobular and Ductal: See above	See above
Pelvis	Men	Colon	Nonspecific papulonodules	See above	See above
	Women	Colon	Nonspecific papulonodules	See above	See above
		Ovary	Nonspecific papulonodules	Psammoma bodies in papillary serous carcinoma	+CA125, +CK7, +ER/PR, +WT-1 (serous carcinoma)

*Indicates most common source of cutaneous metastasis for women.
^ Indicates most common source of cutaneous metastasis for men.
Abbreviations: Neuron-specific enolase (NSE), Acute lymphoblastic leukemia (ALL), Chronic lymphocytic leukemia (CLL), Acute myeloid leukemia (AML), Chronic myeloid leukemia (CML)

References

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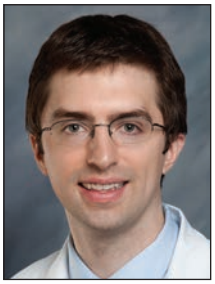
2. James W, Berger T, Elston D. Chapter 28. Andrews' Disease of the Skin. 12th ed. Philadelphia: Elsevier, 2016.
3. Calonje E, Brenn T, Lazar A, McKee P. Chapter 30. McKee's Pathology of the Skin. 4th ed. Elseiver, 2012.

Boards' Fodders online!

In addition to this issue's Boards' Fodder, you can download two new Boards' Fodder online exclusives from ***www.aad.org/Directions.***

The latest online Boards' Fodders is **Skin Signs of Internal Malignancy** *by Amandeep Sandhu, MD, Caroline Perez, MD, and Sharon E. Jacob, MD. To view, download, or print every Boards' Fodder ever published, check out the archives at* ***www.aad.org/boardsfodder.***

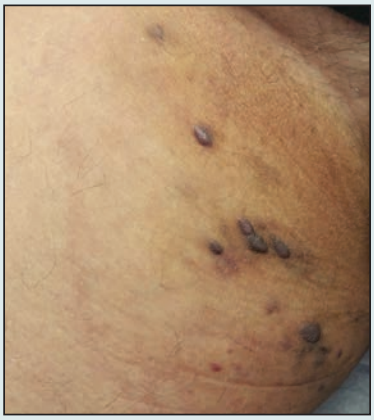


Michael Zumwalt, MD is a PGY-3 dermatology resident at Loma Linda University Medical Center.

Race for the Case: Winter 2016

By Michael Zumwalt, MD

A 66-year-old Caucasian man recently diagnosed with Majocchi's granuloma and tinea cruris — having just completed a 6 week course of oral terbinafine — presented for his follow up. After resolution of his Majocchi's granuloma and tinea cruris, the patient acutely developed dark, violaceous papules/plaques on his bilateral thighs, scattered within the area of his previous tinea cruris and on the bilateral arches of his feet.



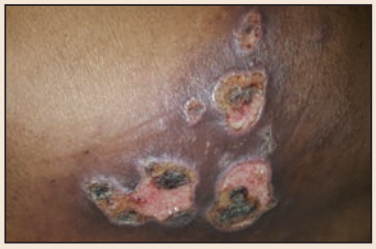
1. What findings would expect to see on histopathologic examination?
2. What specific stain can be used to help confirm the diagnosis?
3. Name the four classification types of this disease.

Respond online with the correct answers at **www.aad.org/RaceForTheCase** for the opportunity to win a Starbucks gift card! If you win, we will also publish your mug (face), and if you have an interesting story to tell residents, we might share it *(see our current winner profile to the right)*. Good luck!

Answers to Fall 2016 Race for the Case

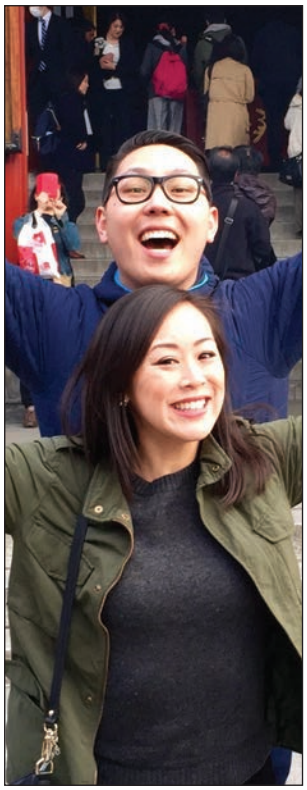
Fall 2016 RFTC was submitted by Alina Goldenberg, MD, MAS — a resident physician, department of dermatology at University of California, San Diego.

A 32-year-old African American male presented to the ER with generalized fatigue, and over the previous three months had a 25-pound weight loss along with headaches and a rash on his back. The rash was previously diagnosed as shingles with unclear treatment and worsening progression. The physical exam revealed five non-tender, grouped and coalescing angular ulcers with central hemorrhagic and necrotic crust, and surrounding localized mottled hyperpigmentation. Size of the largest ulcer was 5cm x 5cm. His past medical history is non-contributory, and his social history is remarkable for prior incarceration. His occupation is in construction, and he temporarily resides in Arizona.



1. *What is the diagnosis and 3 differentials?* ***Disseminated COCCIDIOIDOMYCOSIS; blastomycosis, histoplasmosis, TB***
2. *Historical snippet: who first described the lesions?* ***Alejandro Posadas—medical student from Argentina while examining a soldier with a lesion on cheek***
3. *What previously off-market skin test can be used for diagnosis?* ***Coccidioides immitis Spherule-Derived Skin Test Antigen (Spherusol, San Diego, CA: Nielsen BioSciences).***
4. What are the risk factors for this patient? ***African American race, male gender, occupation, prior residence in Arizona. Immunosuppression work-up negative for HIV, or underlying malignancy.***
5. *What does this condition have in common with syphilis, sarcoidosis, TB, pulmonary embolus?* ***"The great imitators" — cutaneous cocci can have variable clinical presentations, including reactive manifestations without visible microorganisms (erythema nodosum, erythema multiforme, exanthem, granulomatous reaction, sweet's); or organism-specific manifestations identified with culture or histopathology.***

RFTC winner profile: Joseph Chao, MD



Joseph Chao, MD, with Stacy.

Congrats to Joseph Chao, MD, a second-year resident at the University of Arizona in Tucson, Arizona. He grew up in Lake Havasu City, Arizona — home of the London Bridge and one-time MTV Spring Break destination, circa 1995.

While his dermatologic interests include complex medical dermatology and surgery, he currently has no fellowship plans.

When not at work, Joseph enjoys cooking with his fiancée, Stacy, climbing at the gym and on Mt. Lemmon, and being a hipster with his dog, Kuma. Other hobbies include upcoming seasons of *Game of Thrones*, and watching his current guilty pleasure, *Westworld*.

Changes in reimbursement are coming — are you prepared?

Have you been hearing about how dermatology reimbursement may be changing? Wondering what you should do to prepare for the future? Right now, the best thing you can do is learn how the pay you receive is decided upon, and recognize how your input can influence that decision. Start by reading the October 2016 article from the new Outside Perspectives column in *Dermatology World* titled, "Medicare Specialist Breaks Down Code Valuation Process for Fee Schedule" (at **aad.org/codevaluation**). There, Sheila Madhani — the director of a Washington, D.C.-based health-industry consulting firm — discusses code valuation for physician services, and touches on everything from the background of the Medicare Physician Fee Schedule, to how RVUs and practice expenses are determined. Another great resource is a page at AAD.org titled, "How are Medicare fees set?" (**aad.org/medicarefees**) which goes through the step-by-step process of how values are determined for CPT codes before the annual Medicare Physician Fee Schedule is established.

One key way physicians can weigh in on this process is to participate in RUC surveys if requested to do so. This is extremely important because you may receive one when you start practicing, so keep in mind this is something to take very seriously. The survey aims to quantify everything about a specific dermatology procedure/service, including the amount of time it takes to complete it. It's the first step to establishing work values for CPT codes, and once the results are analyzed, they are then presented by the specialty to the RUC, who will later develop and submit recommendations to CMS. Despite the fact that CMS has authority over what coverage and payment levels will be, their fee schedule is primarily reliant upon these physician surveys since the results ultimately define Work RVUs.

How are Medicare fees set?

Find out more at aad.org/medicarefees.

Following our latest Tweets?

The AAD has made some recent updates on social media with a streamlined Twitter feed and an all-new member Facebook page! If you were already following **@AADmtgs** on Twitter before, that account has recently changed to become the new **@AADmember**. Follow us for up-to-date Academy news and information, and continue getting the latest updates on Annual and Summer Meetings. This exclusive info will also be posted to the new AADmember Facebook page, so be sure to like and interact with us for the latest insight from across the specialty.

Sign up your team now for Resident Jeopardy 2017!

Feel competitive much, lately? We think you do. To sign up for Resident Jeopardy 2017, potential contestants need to send their team name along with the two members of the team, institution, year of training, and email address to **speakers@aad.org**. The deadline for entries is Jan. 11.


DIRECTIONS *in* RESIDENCY

Learning how to learn

Spring 2017

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New *Directions*! Check out the latest *Dermatology World* publication in 2017!

Exciting changes are happening to *Directions* as it becomes part of the *Dermatology World* family of publications next year. An updated look, several new features, and new Boards Fodder charts are all coming your way in 2017. Watch for it!

Message from the Chair

Faranak Kanangar, MD

As I have recently completed residency, I'd like to focus this message on the topic of life after residency. If I could sum up this period of life in one word it would be…fantastic! On the other side lies autonomy, patients who are grateful for your care, becoming a diplomat of the American Board of Dermatology, and of course financial rewards for your efforts. It is an extremely long road to get here, and there are many challenges post-residency, including figuring out finances and loan repayment, learning the inner workings of the health care system, such as billing, etc. But overall, dermatology is still a great field.

For success post-residency, it is imperative to get your hands on as many learning opportunities as possible during residency. These learning experiences will become your skill set and an asset to you. In your own program, see as many patients as you can since each case has a teaching point. Outside of your program, try to attend as many conferences as you are allowed to. Fortunately, there are many scholarships that enable residents to attend and learn. I personally learned many of my important skills and pearls at conferences hosted by the AAD, ASDS, ASLMS, CalDerm, and Coastal Dermatology, just to name a few.

Try to do as many procedures as you can, and familiarize yourself with devices and lasers. Even if you get your hands on a procedure or laser device just once or twice, it will go a long way when you start working and you have some familiarity. See as many pediatric patients as possible. At UC Davis, we had a great pediatric dermatologist, and I also had the opportunity to do a rotation in pediatric dermatology at UC San Diego, Rady's Children's Hospital. Pediatric management can be challenging and the more you can expose yourself to this population, the better.

As for choosing your job after residency, make sure you join a supportive work environment. Although everyone is different, I think it may be helpful to join a group initially as opposed to working alone. I have been lucky to join a group of wonderful dermatologists who are all available to provide advice and resources. The best part about picking jobs after residency is you can now (finally) do what is right for you. If you would like to work six days a week… you can! If you are completely burnt out by residency and want to start with one or two days a week, you can do that, too!

Hang in there, and keep on learning. For more pearls, make sure to attend "Life after Residency: A Toolkit for Success" on Thursday, Mar. 2, 2017 at the 2017 AAD Annual Meeting in Orlando.

Thank you for continuing to read *Directions in Residency*, and watch for some very exciting changes coming in 2017 when it merges with the *Dermatology World* family of publications (see p. 7). DR

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