

Merkel cell carcinoma

By Abdulhadi Jfri, MD, MSc, FRCPC, FAAD, and Catherine Pisano, MD, FAAD

Merkel cell	Causes	Location
Receptor of light touch in the basal layer	<ul style="list-style-type: none"> Merkel cell polyomavirus 80% UV signature mutations 20% 	<ul style="list-style-type: none"> Head and neck (most common) Extremities Buttock

Clinical features

Rapidly growing painless pink-red to violaceous dome shaped nodule.

- Asymptomatic
- Expanding
- Immunosuppression
- Older than 50
- UV exposed site

Metastatic Merkel of unknown primary **4%**

Merkel metastasis at time of diagnosis **40%**

Risk factors:

- Age
- Cumulative sun exposure
- Immunosuppression (10%)

Histologic features

Diffuse uniform small round blue cells primarily seen in the dermis with possible epidermal and/or subcutaneous involvement.

+ Stains:

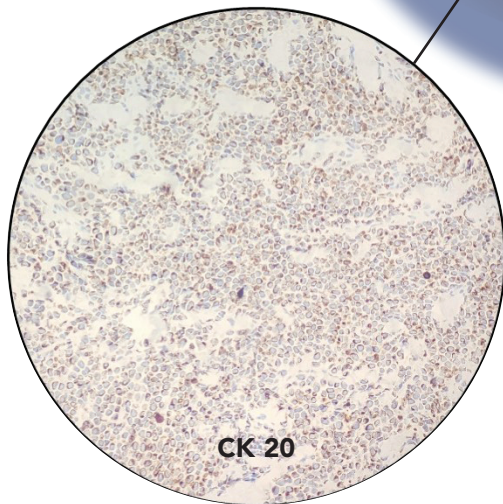
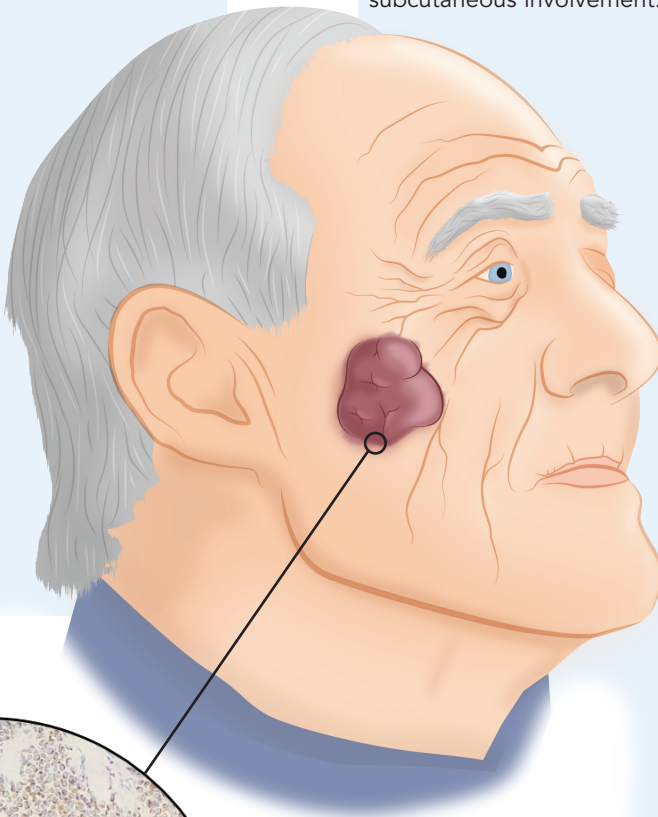
- CK20 (perinuclear dot)
- CK 5/6
- CK7
- CD56
- Neuroendocrine: synaptophysin, chromogranin, somatostatin, calcitonin, vasoactive intestinal peptide (VIP)

- Stains:

- S100 (+ve in melanoma)
- TTF1 (+ve in small cell lung ca)
- CD20, CD45, CD3 (+ve in lymphoma)

Path patterns:

Small blue round cells, sheet like, nested and trabecular

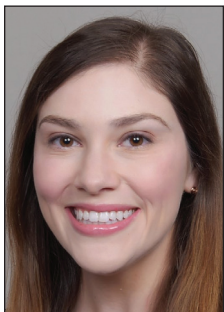


ddx is for small blue round cells on path

- Lymphoma
- Ewing sarcoma
- Merkel cell carcinoma/melanoma
- Olfactory/other (rhabdomyosarcoma)
- Neuroblastoma
- Small cell (oat cell) lung cancer



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Clinical ddx

Basal cell carcinoma, squamous cell carcinoma, amelanotic melanoma, cutaneous lymphoma, cutaneous metastasis, angiosarcoma, dermatofibrosarcoma protuberans, keratoacanthoma, neuroblastoma, adnexal tumors, and neural tumors (neuroma, schwannoma).

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AJCC 8th T staging

Tis:	In situ
T1	≤ 2 cm
T2	> 2 cm ≤ 5 cm
T3	> 5 cm
T4	Muscle, fascia, cartilage, or bone

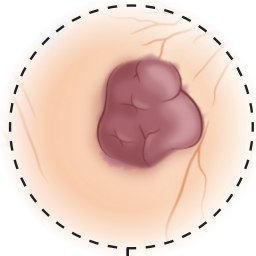
AJCC 8th clinical (cTNM)

St.	T	N	M
0	Tis	cN0	M0
I	T1	cN0	M0
IIA	T2-T3	cN0	M0
IIB	T4	cN0	M0
III	T0-T4	cN1-3	M0
IV	T0-T4	Any N	M1

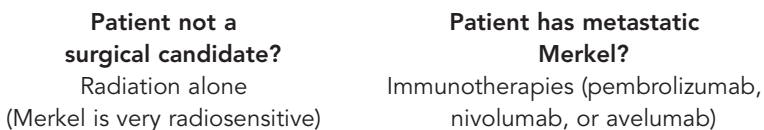
AJCC 8th pathological (pTNM)

St.	T	N	M
0	Tis	pN0	M0
I	T1	pN0	M0
IIA	T2-T3	pN0	M0
IIB	T4	pN0	M0
IIIA	T1-T4	N1a(sn)	M0
	T0	N1b	
IIIB	T1-T4	N1b-3	M0
IV	T0-T4	Any N	M1

Management



- Surgical excision with 1-2 cm margin
- Sentinel lymph node biopsy
- Radiation of the Merkel site and draining node basin if needed
- PET CT scan or CT chest/abdomen/pelvis to search for distant metastasis



Markers to follow-up response to treatment

- MCPyV oncoprotein antibodies (AMERK) at baseline, if positive, serial titers may be drawn to monitor response to treatment and help to predict recurrent disease/increased tumor burden
- Circulating tumor DNA (ctDNA) (FDA approved for monitoring colon cancer post-surgery, under investigation in MCC)

Prognosis: 5-year overall survival (OS):

Local: 51%

Nodal 35%

Distant 14%

Poor prognostic factors:

Clinical

Size: > 2 cm
Location: head & neck
Male
Immunosuppression

Path

Increased P63
Sheet like pattern
Negative CK20
Negative Merkel polyomavirus

Boards bonus!



In addition to this issue's Boards Fodder, download two new online Boards Fodder charts. **Paisley tie differential diagnoses**, by Sujitha Yadlapati, MD, and Thomas Davis, MD, FAAD; and **Graft-versus-host disease (GVHD)**, by Abdulhadi Jfri, MD, MSc, FRCPC, FAAD, and Rachel Meltzer, MD, MPH, FAAD. Check out the archives at www.aad.org/boardsfodder.

Got Boards?



AAD welcomes new Boards Fodder chart ideas. View the Boards Fodder guidelines for submission at www.aad.org/member/publications/more/dir. Contact DW Directions Editor Dean Monti at dmonti@aad.org.

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3. Kathleen Coggshall, Tiffany L. Tello, Jeffrey P. North, et al. Merkel cell carcinoma: An update and review Pathogenesis, diagnosis, and staging. *J Am Acad Dermatol*. 2018 Mar;78(3):433-442. doi: 10.1016/j.jaad.2017.12.001. Epub 2017 Dec 9.
4. *NCCN Clinical Practice Guidelines in Oncology*. Merkel cell carcinoma. Version 1. 2021-Feb 18, 2021.