

Promontory sign microscopic differential diagnosis

By Alexandra Stroia, DO, and Stephen Olsen, MD

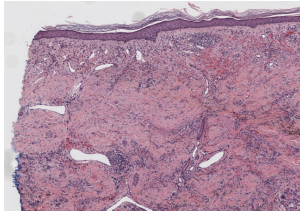
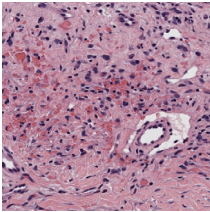
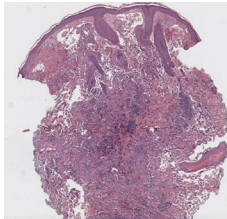
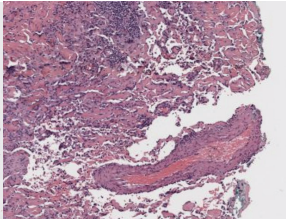
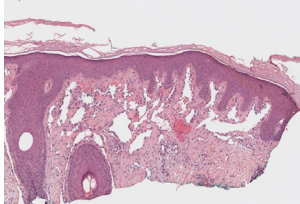
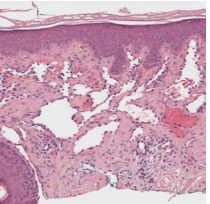
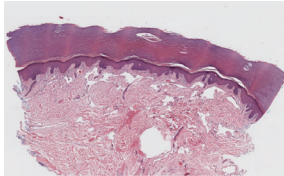
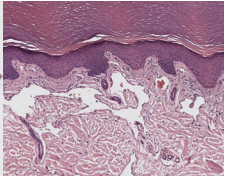


Alexandra Stroia, DO, is a PGY-3 at Trinity Health Livingston in Howell, Michigan.



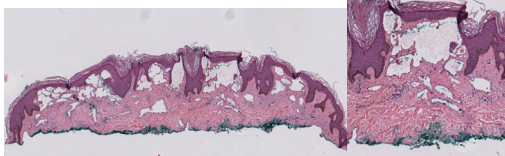
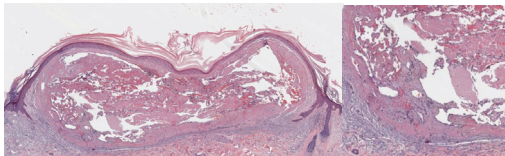
Stephen Olsen, MD, is a board-certified dermatopathologist at Trinity Health Livingston in Howell, Michigan.

Histology slides courtesy of Stephen Olsen, MD.

Diagnosis	Histopathologic features	Stains	Histology image
Kaposi sarcoma	<ul style="list-style-type: none"> • Busy dermis with diffuse infiltration of spindled cells and small channels • Ectatic lymphatic-like vessels • Extravasated red blood cells • Plasma cells common 	CD31+, CD34+, Factor VIII+ (weakly positive), ERG+ HHV8+ (nuclear). Latency-associated nuclear antigen (LANA-1) is the specific HHV8 marker	 
Angiosarcoma	<ul style="list-style-type: none"> • Crack-like spaces between collagen bundles • Spaces lined by hyperchromatic endothelial cells • Nodular areas commonly epithelioid with more pronounced atypia 	CD31+, CD34+, Factor VIII+, ERG+ D2-40+ MYC+ (post-radiation)	 
Hobnail hemangioma	<ul style="list-style-type: none"> • Central superficial dilated vessels with hobnail nuclei • Peripheral proliferation of small vessels • Angulated look to the blood vessels • Hemosiderin deposition 	CD31+, CD34+, Factor VIII+, ERG+ D2-40- GLUT1-	 
Acquired progressive lymphangioma (lymphangioendothelioma)	<ul style="list-style-type: none"> • Proliferation of well-circumscribed, anastomosing, thin-walled irregular staghorn vessels • Arise post trauma, surgery, chronic lymphedema, or radiation • Usually single or localized plaque or nodule • Limited to the dermis 	CD31+, CD34+, Factor VIII+, ERG+ D2-40+ LYVE-1+ PROX1+	 

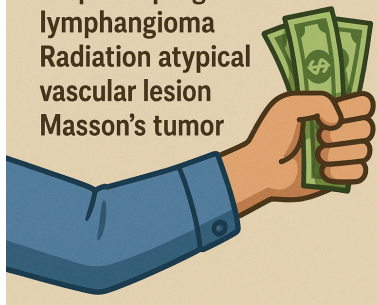
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Diagnosis	Histopathologic features	Stains	Histology image
Post-radiation atypical vascular lesion	<ul style="list-style-type: none"> Well-circumscribed vessels, with minimal anastomosis, and single layer of non-atypical appearing endothelial cells Arise post-radiation Often multiple small papules or plaques within irradiated skin 	CD31+, D2-40+ MYC-	
Intravascular papillary endothelial hyperplasia (Masson's tumor)	<ul style="list-style-type: none"> Recanalized thrombus within vascular space Fibrin in thrombus within papillary projections Papillary projections with hyalinized cores 	CD31+, CD34+, Factor VIII+	

KASH ARM

Kaposi sarcoma
AngioSarcoma
Hobnail hemangioma
Acquired progressive lymphangioma
Radiation atypical vascular lesion
Masson's tumor



Promontory sign: New vessels surrounding adnexal structures or pre-existing vessels

DDx: KASH ARM

References:

1. Bolognia JL, Callen JP, Jorizzo JL, Schaffer JV. *Dermatology*. 5th ed. Elsevier; 2024.
2. Elston DM and Ferringer T. *Dermatopathology*. 3rd ed. Elsevier; 2018.
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4. Fernandez-Flores A and Rodríguez R. Promontory Sign in a Reactive Benign Vascular Proliferation. *Am J Dermatopathol*. 2010;32(7):700-703.
5. Lazova R, McNiff JM, Glusac E, Godic A. Promontory Sign-Present in Patch and Plaque Stage of Angiosarcoma. *Am J Dermatopathol*. 2009;31(2):132-136. **DR**

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