

Papillary endothelial hyperplasia (Masson's lesion) of the toe: A case report

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A unique case of papillary endothelial hyperplasia (Masson's Lesion) detected on the fifth toe is presented. Angiosarcomas may initially present with similar pathologic features, so early identification of a suspicious vascular lesion is paramount in determining if aggressive treatment is necessary.

Keywords: Masson's lesion, tumor, papillary endothelial hyperplasia, angiosarcoma

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Papillary endothelial hyperplasia was first described as a neoplasm by Pierre Masson in 1923, which he called a 'hemangioendotheliome végétant intravasculaire' [1]. Masson's tumor, lesion, or hemangioma represents a proliferation to the cells of the endothelium into the lumen of the vessel leading to a subsequent obstruction. Several vascular pathologies have been linked to the development of intravascular papillary endothelial hyperplasias, such as pyogenic granulomas, lymphangiomas, and hemangiomas [2,3,4]. Multiple reports of these lesions occurring in internal organs exist; such as the liver, kidney, and brain [5,6,7]. They have been reported in similar musculoskeletal sources such as the finger, ankle, and dorsum of the foot, with no prior documented descriptions occurring in the digits of the foot [8,9,10]. These lesions have been found to occur nearly twice as often in females and are typically small, measuring 0.2-2.0cm in diameter, with sharp demarcation and slight cutaneous elevation [11].

The diagnosis cannot be made by clinical evaluation alone, and requires histological evaluation to rule out neoplastic qualities such as invasive growth past the vessel walls.

Case Report

A 75-year-old Caucasian female reported to clinic with complaints of "aching pain" in her right foot, fifth digit, for 6 months duration. She denied smoking or drinking alcohol and her medical history was significant for hypertension, hyperlipidemia, and gastro-esophageal reflux disease. The patient had no history of recent trauma to the foot or clotting disorders. On clinical examination, a small (0.4x0.4cm) hemorrhagic blister with cyanotic discoloration was noted to the medial aspect of the right fifth toe. Initially perceived as a simple friction blister, the lesion was lanced with a #27-gauge needle with several small droplets of blood expressed. The patient was instructed to follow-up should the pain persist for a biopsy of the lesion.

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Figure 1 Lesion at second appointment, prior to biopsy, with centralized eschar from drainage attempt on prior visit.

She returned in one month with complaints of residual discomfort, at which time the digit was anesthetized and a 4mm punch biopsy was utilized to extract the lesion in toto. The specimen was sent for histopathology in formalin. The patient tolerated the procedure well, with the biopsy site allowed to heal by secondary intention. The patient performed her own daily dressing changes with triple antibiotic ointment and a band-aid until closed, and no additional treatment was performed following the pathology report of a benign Masson's Lesion. At two months after the procedure, the patient was feeling well with no signs of recurrence.

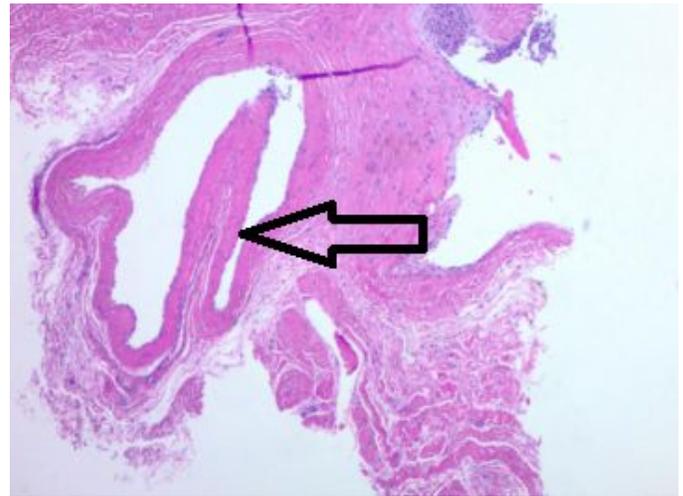


Figure 2 Cross-section with associated hyperplasia of endothelial wall into the venous lumen.

Pathologic Examination

Gross description of the specimen was described; "1 punch biopsy of skin measuring 0.4 x 0.4 x 0.3cm and 1 piece of red-brown tissue measuring 0.4 x 0.3 x 0.1cm." The pathology report diagnosed the biopsied tissue as a "Dilated vein with thrombus and papillary endothelial hyperplasia (Masson's Lesion)." The report also noted, "No staining of lesional nuclei is present with an immunohistochemical marker for HHV-8," indicating that the lesion was not a Kaposi's sarcoma-associated herpes virus [12].

Discussion

Masson's lesions are formed in a process of vascular hyperplasia. It is induced by thrombosis and inflammation, which is considered a reactive process of endothelial cells. Thrombus formation is a pathologic process routinely associated with this occurrence, as was the case in this patient. The development of a thrombus that leads to this lesion can be linked to trauma. Not to be excluded is the consideration that the previous attempt at drainage of this sanguineous bulla, albeit with a 27 gauge needle, may have contributed in formation of this lesion. Not all Masson's lesions show a clear contribution from vascular pathology or thrombus formation; however, multiple variables such as blood pressure and cholesterol can influence the vascular system, and thrombi may dislodge and disappear over time.

In this case, there was no history of direct trauma to this patient's toe. However, vascular pathology may have resulted with contribution of hypertension on the microvasculature as well as the constant inherent pressure occurring inter-digitally.

Conclusion

While this lesion was ultimately benign in nature, the decision to biopsy and confirm diagnosis should always be pursued if any question for advanced disease process is suspected. Fortunately, this diagnosis allowed both the patient and physician piece of mind with no additional intervention necessary. This example of a digital Masson Lesion may provide the physician with an additional differential diagnosis for a suspicious vascular-cutaneous lesion of a toe.

References

1. Masson P. Hemangioendotheliome végétant intravasculaire. *Bull Soc Anat Paris* 1923; 93: 517-23.
2. Inalöz HS, Patel G, Knight AG. Recurrent intravascular papillary endothelial hyperplasia developing from a pyogenic granuloma. *J Eur Acad Dermatol Venereol.* 2001;15:156–8.
3. Takayama A, Nakashima O, Kobayashi K, Kojiro M. Splenic lymphangioma with papillary endothelial proliferation: a case report and review of the literature. *Pathol Int.* 2003;53:483–488.
4. Tanio S, Okamoto A, Majbaudhin A, Sonoda M, Kodani I, Doi R, et al. Intravascular papillary endothelial hyperplasia associated with hemangioma of the mandible: a rare case report. *J Oral Maxillofac Surg Med Pathol* 2016;28:55–60.
5. Hong SG, Cho HM, Chin HM, et al. Intravascular papillary endothelial hyperplasia (Masson's hemangioma) of the liver: a new hepatic lesion. *J Korean Med Sci.* 2004;19(2):305–308.
6. Essid MA, Bouzouita A, Blel A, et al. Masson's tumor of the kidney: a case report. *J Med Case Rep.* 2018;12(1):376. Published 2018 Dec 22.
7. Lesley WS, Kupsky WJ, Guthikonda M. Intravascular papillary endothelial hyperplasia arising within a posteroinferior cerebellar artery aneurysm : case report and review of the literature. *Neurosurgery.* 2000;47:961–965. discussion 966.
8. Erol O, Ozcakar L, Uygur F, Kecik A, Ozkaya O. Intravascular papillary endothelial hyperplasia in the finger: not a premier diagnosis. *J Cutan Pathol* 34:806–807, 2007.
9. Znati K, Daoudi A, Chbani L, et al. Intravascular papillary endothelial hyperplasia of the ankle: a case report. In *Annales de chirurgie plastique et esthetique* 2009;54(6), 600-602.
10. Serin, M, Altinel D, Leblebici C, et al. Intravascular Papillary Endothelial Hyperplasia of the Foot. *The Journal of Foot and Ankle Surgery,* 2018;57(1), 188-190.
11. Kuo TT, Sayers CP, Rosai J. Masson's "vegetant intravascular hemangioendothelioma": a lesion often mistaken for angiosarcoma. Study of seventeen cases located in the skin and soft tissues. *Cancer,* 38: 1227-1236, 1976.
12. Ablashi DV, Chatlynne LG, Whitman Jr J. Spectrum of Kaposi's sarcoma-associated herpesvirus, or human herpesvirus 8, diseases. *Clinical microbiology reviews.* 2002;15(3), 439-464.