Case Report

DOI: 10.21276/AABS.2993

Intravascular Papillary Endothelial Hyperplasia (Masson's Tumor) of Wrist

Shakti Kumar Yadav, Alka Yadav, Roshina Naeem, Sompal Singh, Namrata Sarin and Sonam Kumar Pruthi*

Department of Pathology, North Delhi Municipal Corporation Medical College and Hindu Rao Hospital, Delhi

ABSTRACT

Nonspecific slow growing lesions of hand and wrist can be difficult to diagnose. We present a case of intravascular papillary endothelial hyperplasia (IPEH), or Masson's tumor of the wrist. Present case is a 23-year-old female presented with a vague, soft, mobile and mildly tender swelling over the ventral aspect of the right wrist. The present case highlights the importance of excision and histopathological examination along immunohistochemistry in these lesions.

Keywords: *Vascular Tumor, Masson's Tumor, Intravascular Papillary Endothelial Hyperplasia, Wrist*

Introduction

Intravascular papillary endothelial hyperplasia (IPEH) is a benign intravascular lesion. It mimics other benign as well as malignant vascular proliferations. It is mostly found in head and neck region and the extremities. [1] The classical histological features of this is multiple papillary structures covered by hyperplastic endothelial cells in the vascular lumen. Along with this intra-luminal location of the lesion and a close association with organizing thrombus, the absence of necrosis, cellular pleomorphic, and mitotic activity are helpful in clinching the diagnosis. In addition, immunohistochemistry helps to demarcate its vascular origin and proliferative potential. [2] We present a case where we have evaluated histological and immunohistochemical markers in Intravascular papillary endothelial hyperplasia. It is important to not mistake this clinically benign lesion for other well differentiated tumors of vascular origin.

Case Report

Present case was a 23-year-old female who presented with a slowly growing mass on the ventral aspect of the right wrist. There was no history of trauma. The mass was slow growing over the past few years, but started to hinder the day-to-day movements. The lesion was approximately 2 cm × 1.5 cm, soft, mobile and slightly tender. The patient requested the mass to be removed as it was causing problem in her writing work.

On gross examination a grey brown, irregular tissue piece was identified. H & E-stained section, revealed, dilated vessels with intraluminal papillary formations. Some areas show desquamating endothelial cells and focal thrombi (fig 1&2). Immunohistochemical stain for CD34 highlighted the endothelial lining. A final histological diagnosis of IPEH was rendered.

Discussion

Intravascular Papillary Endothelial Hyperplasia commonly called as Masson's tumor after its original description by Masson who called it vegetant intravascular haemangioendothelioma. [1]

It is a rare benign vascular endothelial proliferation representing about 2% of all the vascular tumors in skin.[2]

Pathogenesis of this lesion is still unknown, but it is considered as reaction and eventual proliferation of endothelial cells of normal blood vessels in response to a variety of chemical signals probably hormonal.[3-5]

Masson in his original description regarded it as a true neoplasm arising from an ulcerated haemorrhoidal vein, which showed degenerative changes including necrosis and thrombosis.[1, 6]

It usually presents in the third and fourth decades of life, most commonly occurs in the skin and subcutis of the fingers and head-neck regions as "pure" lesions [7]. Although this lesion can occur in virtually any vessel, it is mostly located in veins of head-neck, fingers and trunk. Clinically it appears as a superficial subcutaneous swelling with overlying skin showing blue or red tinge.

Three distinct types are described 1 primary "pure" or intravascular form which arises in dilated blood vessels, usually veins. 2 a secondary or "mixed" form 40% which originates within a pre-existing varix like aneurysm, haemangioma, arteriovenous malformation, lymphangioma and pyogenic granuloma. 3 an extravascular form which

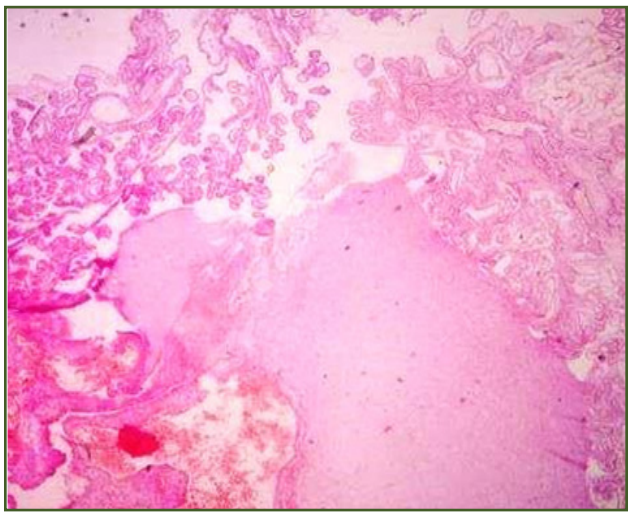

Fig. 1: Photomicrograph showing desquamating endothelial cells and focal thrombi (H&E, 100x).

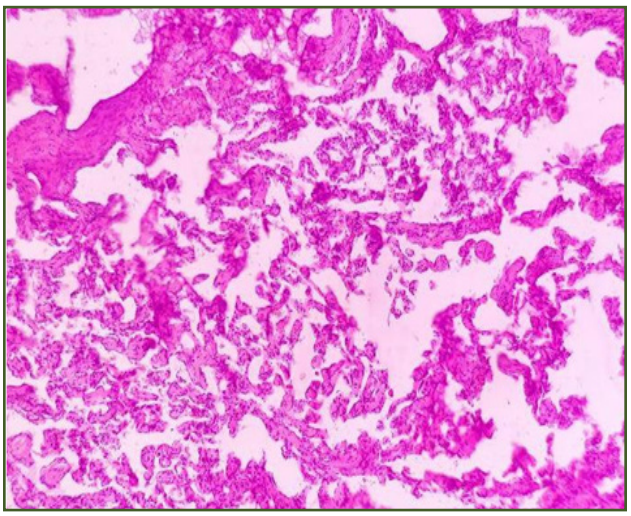

Fig. 2: Photomicrograph showingdilated vesselwith intraluminal papillary formations (H&E, 100x).

arises in hematomas.[8, 9] . Although any of this form is not related to previous history of trauma.

Pure lesions most commonly occurs in skin and subcutaneous tissue of fingers, head and neck regions. [2-5, 10], while mixed lesions tend to occur intramuscular region[11]. Other common locations of this lesion are cranial cavity, mandible, maxillary sinus, tongue, orbital fossa, thyroid, triceps, superior vena cava, lung parotid, cervix, liver, adrenal gland renal vein.

The differentials of this entity include various other benign as well as malignant vascular proliferative lesions. Particularly those in which there is fusion of papillae to form anastomotic pattern which may mimic angiosarcoma [12-15]. IPEH has characteristic papillary proliferation of reactive endothelial cells. These papillae are composed of hypocellular and hyalinised cores which are lined by one to two layers of plump endothelium. It is commonly associated with thrombus. IPEH does not have any cellular atypia, atypical mitosis or infiltrative growth pattern, all these features which are present in malignancy.[16]

Low grade angiosarcoma shows an infiltrating pattern of growth along with nuclear hyperchromasia, atypical cells, mitosis and necrosis[17-19].

Immunohistochemistry is also helpful in detection and categorization of this lesion. Cellular markers of proliferation Ki-67 may help identifying the biological behaviour of this lesion[16]. Various other immunohistochemical markers like CD34, CD31, CD105 are also helpful. CD105 is help is differentiation from angiosarcoma in which it is overexpressed [18]. IPEH is also show varying positivity with vimentin, laminin, podoplanin and type IV collagen. [14, 20]

The treatment of Masson's tumor is conservative surgical excision. It has excellent prognosis except in cases with intracranial involvement. Recurrence is very rare except when it is arising in primary vascular lesion which itself is recurring. The role of radiation therapy is not clear but there are some reports of successful treatment in cases of recurrent IPEH, both intracranially and in digits[2-5, 10].

Conclusion

In conclusion clinical features of Masson's tumour are nonspecific. Histopathological examination and immunohistochemistry, is helpful for diagnosis. Due its close morphological resemblance with low-grade angiosarcoma care must be taken to prevent misdiagnosis and unnecessary aggressive treatment.

Reference

1. Goldblum JR, Weiss SW, Folpe AL. Enzinger and Weiss's Soft Tissue Tumors E-Book: Elsevier Health Sciences; 2013.
2. Hutcheson EL, Picarella EA, Blevins PK. Masson's tumor of the hand: a case report and brief literature review. Ann Plast Surg. 2012;69:338-9.
3. Kitagawa Y, Tamai K, Kim Y, Hayashi M, Makino A, Takai S. Intravascular papillary endothelial hyperplasia of the digit: MRI features with histological correlation. J Hand Surg Eur Vol. 2013;38:306-12.
4. Anthony SG, Mudgal CS, DeLaney TF, Shin RD, Raskin KA, Ring DC. Recurrent intravascular papillary endothelial hyperplasia of the right middle finger treated with radiation therapy. J Bone Joint Surg Br. 2008;90:95-7.
5. Tarallo M, Spagnoli AM, Fino P, Lo Torto F, Scuderi N. Masson's tumor: a soft tissue tumor simulating a tendon cyst: case report. G Chir. 2012;33:34-7.

6. Abdul Nasir S. The learning styles of early adult students from different cultural backgrounds in malaysia. Distance Education Centre UiTM. 2009;4:1-9.
7. Feintisch AM, Marano AA, Borah GL. Intravascular Papillary Endothelial Hyperplasia (Masson's Tumor) of the Hand. J Hand Surg Asian Pac Vol. 2017;22:128-30.
8. Hashimoto H, Daimaru Y, Enjoji M. Intravascular papillary endothelial hyperplasia. A clinicopathologic study of 91 cases. Am J Dermatopathol. 1983;5:539-46.
9. Pins MR, Rosenthal DI, Springfield DS, Rosenberg AE. Florid extravascular papillary endothelial hyperplasia (Masson's pseudoangiosarcoma) presenting as a soft-tissue sarcoma. Arch Pathol Lab Med. 1993;117:259-63.
10. Tokyol C, Demir Y, Aktepe F. Cutaneous intravascular papillary endothelial hyperplasia of the hand: a case report and review of the literature. Turk J Pediatr. 2005;47:71-4.
11. Clifford PD, Temple HT, Jorda M, Marecos E. Intravascular papillary endothelial hyperplasia (Masson's tumor) presenting as a triceps mass. Skeletal Radiol. 2004;33:421-5.
12. Cohen A, Maly A, Azaz B. Intravascular papillary endothelial hyperplasia of the lower lip: surgical approach and review of the literature. Gerodontology. 2009;26:305-8.
13. Salyer WR, Salyer DC. Intravascular angiomatosis: development and distinction from angiosarcoma. Cancer. 1975;36:995-1001.
14. Soares AB, Altemani A, Furuse C, Demasi AP, Gati C, Nunes N, et al. Intravascular papillary endothelial hyperplasia: report of 2 cases and immunohistochemical study. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2008;106:708-11.
15. Tosios K, Koutlas IG, Papanicolaou SI. Intravascular papillary endothelial hyperplasia of the oral soft tissues: report of 18 cases and review of the literature. J Oral Maxillofac Surg. 1994;52:1263-8.
16. Fernandes D, Travassos DC, Ferrisse TM, Massucato EM, Navarro CM, Onofre MA, et al. Oral Intravascular Papillary Endothelial Hyperplasia Associated with an Organizing Thrombus: Case Report and Immunohistochemical Analysis. Case Rep Pathol. 2016;2016:1908767.
17. Amerigo J, Berry CL. Intravascular papillary endothelial hyperplasia in the skin and subcutaneous tissue. Virchows Arch A Pathol Anat Histol. 1980;387:81-90.
18. Inoue H, Miyazaki Y, Kikuchi K, Fujinami M, Yoshida N, Ide F, et al. Intravascular papillary endothelial hyperplasia of the oral cavity. J Oral Sci. 2011;53:475-80.
19. Sarode GS, Sarode SC. Extra-vascular type of oral intravascular papillary endothelial hyperplasia (Masson's tumor) of lower lip: a case report and review of the literature. Indian J Dent Res. 2015;26:101-5.
20. Fontes A, Campos MS, de Sousa SC, Martins MT, Nunes FD. Diagnostic implications of oral intravascular papillary endothelial hyperplasia. Odontology. 2011;99:92-7.

***Corresponding author:**
Dr Sonam Kumar Pruthi, Department of Pathology, North Delhi Municipal Corporation Medical College and Hindu Rao Hospital, Delhi
Phone: +91 011-23905652
Email: sonam_manipal@yahoo.com

Date of Submission : 11/11/2020
Date of Acceptance : 09/12/2020
Date of Publication : 20/12/2020

Financial or other Competing Interests: None.