

Intravascular Papillary Endothelial Hyperplasia of the Foot. A Case Report

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Introduction

Intravascular papillary endothelial hyperplasia was first described by Masson in 1923 as a hyperplasia of endothelial cells.¹ This lesion is also referred to as a Masson's Tumor, Masson's pseudoangiosarcoma, and intravascular vegetative hemangioendothelioma.² Some have suggested that it represents an profuse reparative response to vascular injury.³ It is important for physicians to perform a comprehensive study on the lesion including clinical and histological examinations with proper imaging to differentiate it from malignant vascular neoplasms and guide treatment.²

Case report

A 56 year old male presented to the clinic with complaints of left 3rd intermetatarsal space (IMS) pain for 15 years and was diagnosed with a 3rd IMS neuroma. He failed conservative treatment options including orthotics, cortisone injection, and alcohol sclerosing injections. He then underwent a left foot 3rd IMS neurectomy through a dorsal approach with no intraoperative complications. On gross examination of the specimen, it was described as "two elongated grey-tan, ligamentous fragments of soft tissue, aggregating 2.2 x 1.0 x 0.6cm." Final pathological diagnosis was "Traumatic neuroma and thrombosed artery". The patient healed uneventfully and returned to activities such as running and skiing without pain 2 months post operatively.

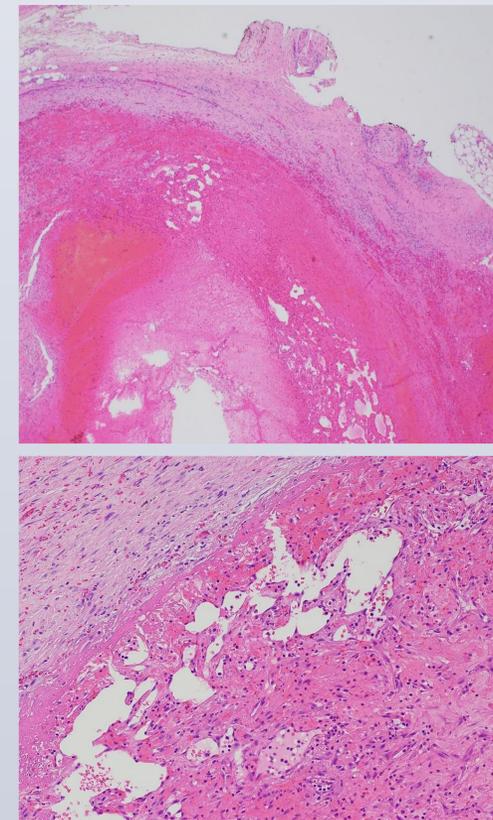
Case report

At 7 months postoperatively, he began to complain of bruising and swelling around the surgical site which comes and goes, and denied any traumatic events. He stated that he has a sensation of a fluid build-up in the foot, which improves with massage. He states that now he can feel a lump in the top of his foot. Upon physical exam, his left foot is neurovascularly intact. Ecchymosis is noted across the 2nd-4th MPJs which doesn't extend planarly. A mass is visible along the incision. The semi-mobile, palpable mass was not fluctuant. It had no induration, and was approximately 8mm in diameter. Photographs were also taken at that time as shown in Figure 1. The mass was then aspirated in the office which produced 2cc of sanguineous fluid without any clot noted. Magnetic resonance imaging (MRI) was then performed on the left foot. The MRI was positive for complex well-marginated mass of the dorsal left 3rd interspace at the level of the metatarsophalangeal joint. There is some fluid component, but soft tissue component is noted as well which could represent a hematoma or seroma, or soft tissue neoplasm.



Case report continued

The patient then underwent a mass excision. Intraoperatively the mass was purple in color and directly deep to the dermis. It had surrounding hematoma and what appeared to be traumatized tissue. Under gross pathological evaluation, it was described as a "red, rubbery tissue measuring 2.1 x 2.0 x 1.1 cm. (Figure 2) The specimen shows a large focal area of hemorrhage, 1.5cm at the greatest dimension". The final diagnosis was "benign hematoma with focal endothelial proliferation and features suggestive of recanalized intravascular thrombus. (Masson's tumor). (Figures 3,4). At 1 week the patient developed a surgical site infection with dehiscence of the incision, but denied any fever, chills, nausea, and vomit. The wound did not probe to bone. Cultures were positive for Enterococcus faecalis which was treated with oral antibiotics. His wound was treated with local wound care and a wound VAC which ultimately healed. No recurrence of the Masson's tumor has occurred and the patient returned to his normal activity level without limitations.



Discussion

Intravascular papillary endothelial hyperplasia represents 2-4% of all vascular neoplasms of the soft tissue.³ The lesions occur most commonly in the extremities and in the head and neck region.⁴ Etiology of this IPEH is unknown. There are certain characteristics which distinguish IPEH from hemangiosarcoma. These characteristics include intravascular papillary endothelial proliferation with otherwise normal endothelial linings, usually associated with thrombi, only slight atypia in papillary structures, and it is unusual for piling up of endothelial cells.⁵

There have been 3 types of IPEH described. A pure form of hyalinized collagen occurring within dilated vascular spaces, and has a predilection for fingers, head, and neck. The mixed form developing in a vascular lesion such as a pyogenic granuloma or hemangioma with a tendency toward being intramuscular. The third form arises in hematomas.^{4,5} There are some who question if the IPEH forms in a thrombus matrix⁶ or if the thrombus occurs due to venous stasis caused by sludging in the presence of IPEH.⁷

The color is generally reddish to purple. Differential diagnosis can include "venous malformation, glomus tumor, angiolymphoid hyperplasia with eosinophilia, pleomorphic hyalinizing angiectatic tumor of soft parts, intravenous atypical vascular proliferation, and cutaneous angioleiomyomas. Malignant melanoma, Kaposi's sarcoma, hemangioendothelioma, and, even, angiosarcoma."¹ Definitive diagnosis is made by histological evaluation. The classic characteristic is endothelial proliferation via papillary structures that are inserted into a dilated vessel wall.²

In conclusion Masson's tumors are benign intravascular papillary endothelial neoplasms which have similar appearance to other benign and malignant soft tissue tumors. It is important to understand the classic characteristics of IPEH to prevent overly aggressive surgical resection of this lesion. Recurrence of these lesions is quite rare, however there have been studies showing recurrent IPEH. The prognosis is usually good when there is not significant vascular compromise.²

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