

Primary Intraosseous Cavernous Hemangioma of the Proximal Tibia: A Rare Case Report

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Abstract

Primary intraosseous cavernous hemangioma is a rare benign skeletal tumor, which occurs at all ages, but is more common in the 4th decade of life. Bone hemangioma is a vascular hamartoma of bone structures and primary lesion accounts for less than 1% of all bone tumors with a male to female ratio of 1/1.5. We present a rare case of a 55 year old female patient, presenting with complaints of knee pain for 2 years with no significant traumatic history. Radiological investigation was done and patient then underwent tumor excision with curettage and bone cementing of the right proximal tibia. Histopathological sample was later diagnosed as cavernous hemangioma.

Keywords: Primary intraosseous; Skeletal tumor; Bone hemangioma; Knee pain; Hamartomas; Posttraumatic; Cosmetic deformity

Introduction

Primary cavernous hemangiomas are rare conditions and present as silent slow growing swellings of the affected bone. Preoperative diagnosis poses a difficulty with treatment mandating complete excision where possible.

Case Report

We present a middle aged female patient presenting with complaints of an insidious onset dull aching type of pain in the right knee joint with no traumatic history. Patient gives no history of weight loss or any other significant history. On examination, tenderness was noted along the lateral joint line with no palpable mass. Terminal knee range of motion was painfully restricted [1].

Discussion

Primary bone hemangiomas constitute less than 1% of all bone tumors. Bone hemangioma is most commonly seen in 4th decade of life and the male/female ratio is 1/1.5. The locations of these lesions are commonly long bones of the vertebral column and the skull. Intraosseous hemangiomas are classified as benign tumors of vascular nature with some authors classifying them as hamartomas. They originate and expand inside bone structures. They are usually congenital, rarely of posttraumatic origin.

Women in the fourth and fifth decades of life are mostly affected. Local trauma is thought to be one possible factor. In our patient, there was no such predisposition for intraosseous hemangioma development. As intraosseous hemangioma tends to grow very slowly, it remains clinically silent until the tumor becomes large. Therefore, early detection is crucial to a lesser cosmetic deformity.

A lytic lesion affecting the bone, with bone spicules extending from center to periphery in the lytic lesion (sunburst pattern or honeycombing) are characteristic for the lesion. However, this finding may be seen in meningioma, osteogenic sarcoma, and osteoblastic metastases. The MRI (Magnetic Resonance Imaging) signal of hemangioma is variable and the hyperintensity of hemangiomas at T1-weighted sequences is an important distinguishing feature for these tumors

These tumors can be misdiagnosed as a dermoid cyst, a giant cell tumor of bone, multiple myeloma, and metastasis. Preoperative

diagnosis of this tumor may be difficult because of its similarity to other bone pathologies. The most useful radiological tool is CT (Computerised Tomography), clearly showing cortical and trabecular structures. The diagnosis of cavernous hemangiomas is established by histopathology, based on this, they are classified as cavernous or capillary type according to their vascular network. The cavernous hemangioma is composed of large thin-walled vessels and sinusoids lined with a single layer of endothelium. However, a small fine vascular network filled with blood forms the capillary hemangioma. Capillary hemangiomas are usually present at birth. In contrast, most cavernous hemangiomas occur in adulthood.

The goal of the treatment in hemangioma is to remove the tumor completely without any functional deficit, cosmetic deformity, or significant tissue loss. Biopsy of the lesion in order to exclude malignancy should be done cautiously because of the risk of severe bleeding [2-5].

In the past, radiotherapy and sclerotherapy were the treatment of choice. But today radiotherapy may only be reserved for cases in which surgery is not feasible due to the adverse effects such as tissue necrosis, retardation of growth of bones and teeth, telangiectasia, and malignant degeneration, and sclerosing agents are used for soft-tissue hemangiomas of the head and neck. Other treatment modalities include angiography with embolization, curettage, and cryotherapy. Ciccone et al. [6] in their study concluded that increase in BMI (body mass index) along with higher waist circumference was associated with increased IMT (intima media thickness) of carotid artery. Hence, people with abdominal fat accumulation are at a higher risk of developing atherosclerosis. Along with this, obese patients can undergo trivial trauma in the weight bearing portion of the tibia resulting in a traumatic stimulus which could lead to the formation of a hamartoma (Figures 1-3).

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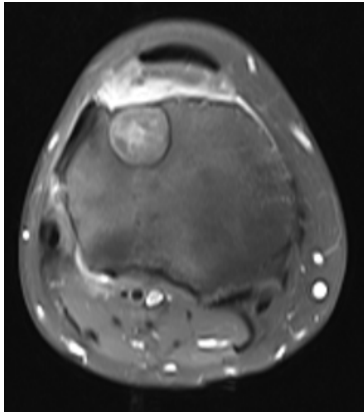


Figure 1: Axial view of the lesion on MRI.

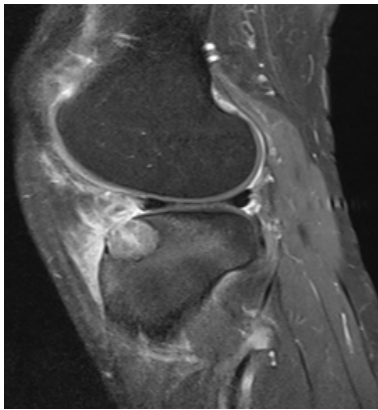


Figure 2: Sagittal view of the lesion in the proximal tibia on MRI.

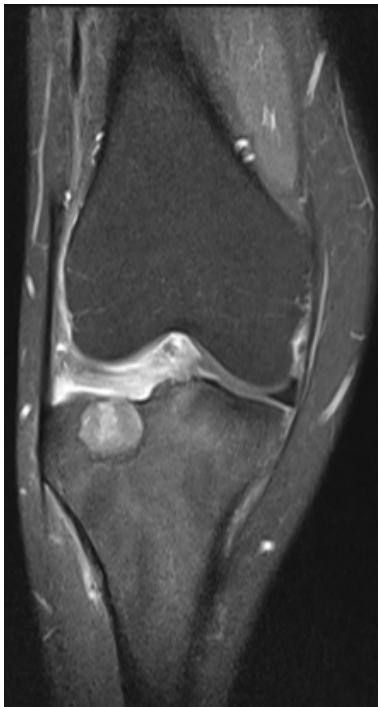


Figure 3: Coronal view of the lesion on MRI.

Conclusion

Primary cavernous hemangioma of the proximal tibia is a rare presentation for which ideal modality of investigation is CT scan and treatment is complete excision of the lesion. In our practice, the defect was filled with bone cement in suspicion of malignant lesion and also to reconstruct the defect.

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