

CASE REPORT

Post - Traumatic Pigmented Villonodular Synovitis of Tibialis Posterior Tendon Sheath - A Case Report.

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Abstract

PVNS presents as unexplained spontaneous onset of pain and swelling in the joint. PVNS is a locally aggressive lesion leading to joint and tissue destruction. In the setting of non- specific symptoms, PVNS is diagnosed with clinical suspicion confirmed by MRI scan and microscopic evaluation of the involved tissue. The treatment of the condition is necessary and involves excision of the lesion if detected early or salvage procedures as joint replacement in later stages of the pathology. Some new forms of treatments as biological and radiation therapy are described in literature but are yet not uniformly promoted.

Keywords: PVNS, Tibialis posterior, Giant cell tumor, Tendon, Ankle MeSH terms: Pathology, musculoskeletal, leg, tendon, Surgical excision, sports medicine

Introduction

PVNS presents as unexplained spontaneous onset of pain and swelling in the joint [1-3]. PVNS is a locally aggressive lesion leading to joint and tissue destruction [2,3]. In the setting of non- specific symptoms, PVNS is diagnosed with clinical suspicion confirmed by MRI scan [4, 5] and microscopic evaluation of the involved tissue [2]. The treatment of the condition is necessary and involves excision of the lesion if detected early or salvage procedures as joint replacement in later stages of the pathology [3,6]. Some new forms of treatments as biological and radiation therapy are described in literature but are yet not uniformly promoted [7,8].

Case Report

A 16 year old girl was referred by her General practitioner for concerns of persistent painful swelling on medial side of ankle and foot. She sustained injury to her left ankle while playing soccer almost a year ago. She made return to playing soccer after 4 weeks of initial injury but continued to have pain and swelling in the above-mentioned region. The pain was more after sports activities and was progressively worsening.

On examination, she had fluctuant and mildly tender swelling overlying the insertion of Tibialis posterior tendon at the navicular bone with minimal pain on resisted testing of Tibialis posterior muscle. The MRI scan of her foot and ankle reported extensive tenosynovitis along the Tibialis posterior tendon with hemorrhagic components at two different locations. (See Figure 1 and 2). She underwent surgery for excision and debridement of the pathology. The lesion was seen as a brown discoloured tissue at the medial ankle, which continued into another lump along the Tibialis posterior tendon sheath in the lower medial side of leg. The histology and microscopic examination of the excised tissue confirmed Pigmented Villonodular Synovitis (PVNS), which consisted of nodular proliferation of histiocytoid cells with hemosiderin in superficial cells



Figure 1: PD Fat sat sagittal image sequence showing PVNS of about 40 mm longitudinal length along musculotendinous junction of Tibialis Posterior tendon

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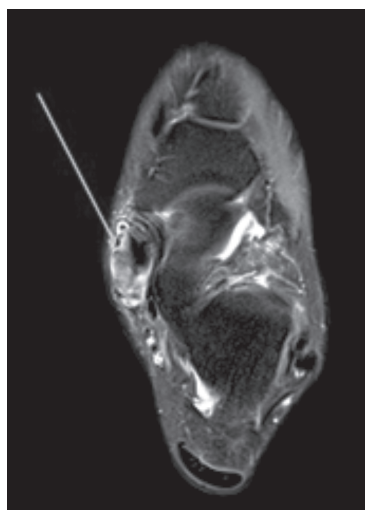
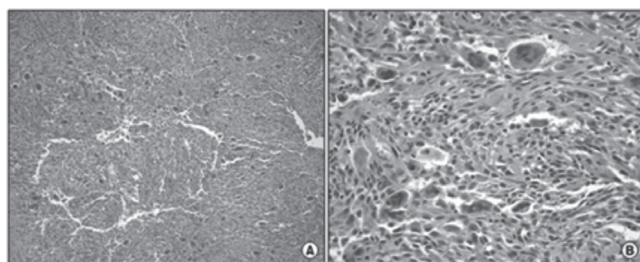


Figure 2: PD Fat sat Coronal image sequence showing PVNS at the level of Insertion of Tibialis Posterior tendon



Histological image showing nodular many histiocyte cells with interspersed multinucleated giant cells and hemosiderin deposits

Discussion

Pigmented Villonodular synovitis (PVNS) is a hypertrophy with associated inflammation of the synovial lining of the joints, tendons, bursa and other tissues. PVNS is locally aggressive and leads to destruction of the joint and surrounding tissues. (2) Depending on the type of joints/structures involved and amount of synovium affected, PVNS can present as Diffuse PVNS which is more common, affects bigger joints (knee or hip) and involves large part of the synovium or Localized PVNS, which is less common, more frequent in females, involves tendon sheaths and small joint of hand and feet and only affects limited part of the synovium (3).

PVNS is commonly seen in 3rd and 4th decade of life but can affect the population in both the extremes of age (2,4). No identifiable cause in terms of relation to specific job, environmental trigger, ethnicity or activity is described. (4).

PVNS presents with non-specific symptoms and a common presentation is spontaneous unexplained swelling and pain in the joint. Disease progression results in increased pain and reduction in range of motion of the

joint. Tendon sheaths of foot and ankle are less commonly involved (5). The Diffuse form is more painful and resembles Rheumatoid arthritis, osteoarthritis and bone and soft tissue tumors (6).

The plain radiographic findings of PVNS may be normal in initial presentation, however, in advanced stages show cystic erosions, increased density of the synovium, secondary to hemosiderin deposition and peri-articular soft-tissue swelling with no calcification along with joint effusion (3,5).

The MRI features of PVNS include joint effusion, synovial hypertrophy, hemosiderin deposits in the synovium, cartilage and bone destruction (4, 5).

Grossly, PVNS appears as a proliferative synovial process with brownish Villonodular fronds in the affected joints. Histopathologically, the tumor is generally represented by many mononuclear histiocytic cells and irregularly interspersed multinucleated giant cells. Hemosiderin pigments could also be detected. Some foamy histiocytic cells may individually interspersed or form clusters (2,3).

The treatment in localised form of PVNS is complete excision of the swelling with a clearance margin of normal tissue. In diffuse form, synovial excision and debridement of the affected bone is advised. In advance cases, joint procedures as arthrodesis and joint replacement are considered (3,8). Irradiation and systemic medication especially targeting the CSF1/CSF1R axis (imatinib, nilotinib, emactuzumab and PLX3397) have been proposed in patients with diffuse, relapsed, or multifocal PVNS (7, 8).

Conclusion

This case report highlights the importance of considering even the less common pathologies in the differential diagnosis of a common condition as chronic ankle pain. PVNS has not been reported very frequently especially around the ankle joint. Diagnosing and treating the pathology earlier will prevent both the morbidity and the time-loss from work and sports

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