Section: Miscellaneous

Case Report

AN UNUSUAL PRESENTATION OF SYNOVIAL CHONDROMATOSIS IN YOUNG ADULT

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ABSTRACT

A 20-year-old male presented with pain and swelling of the left ankle joint resulting in a change in profession. Clinicoradiological investigations revealed synovial chondromatosis. A very rare presentation at that site requires a high index of suspicion.

Keywords: Synovial chondromatosis, ankle joint, Loose bodies, synovium

INTRODUCTION

Case Report

A 20-year-old male dancer sustained a twisting injury to his left ankle 6 months ago for which he was treated. Later he developed pain and swelling which is gradually progressive resulting in a change in profession and difficulty in performing routine activities. On clinical examination, there is a diffuse swelling present over the dorsal aspect of the left ankle with tenderness with terminal restriction of dorsiflexion of ankle movements with no foot deformities. Neurovascular examination is normal.

Weight-bearing x-ray of Left ankle shows multiple intraarticular loose bodies. [Figure 1] Magnetic resonance imaging confirms multiple hypointense foci of varying sizes around the ankle joint, predominantly in the anterior aspect of the talus suggestive of primary synovial chondromatosis. [Figure 2]

Mini open arthrotomy with loose body removal and partial synovectomy was done through an anterolateral approach. [Figure3] Histopathological examination confirmed nodules of cartilage with foci of calcification and osseous transformation suggestive of primary synovial chondromatosis.

At 3 months follow-up, the patient was symptom-free and started his professional activities. There is no recurrence of symptoms seen clinicoradiologically even after 1 year. [Figure 4]

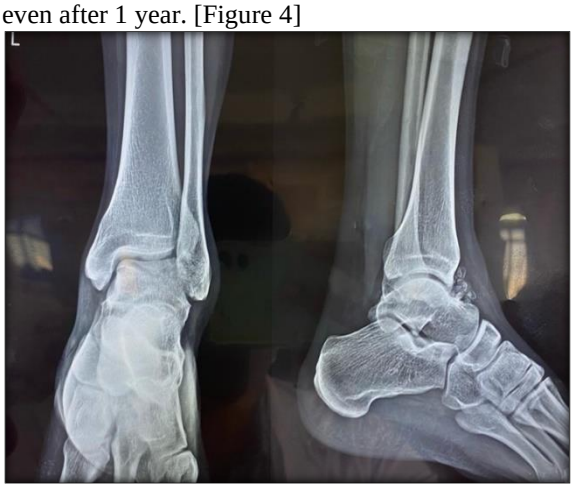

Figure 1: Pre-op X-ray showing multiple loose bodies anterior to ankle joint

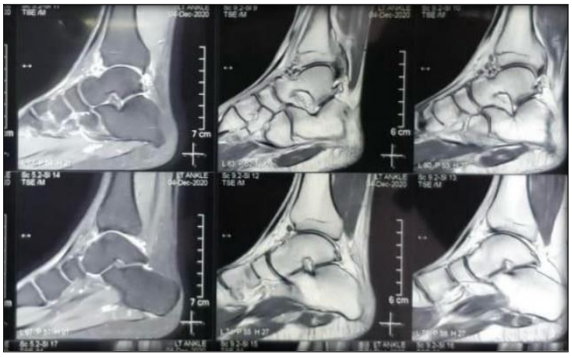

Figure 2: Pre-op MRI showing multiple loose bodies anterior to ankle joint

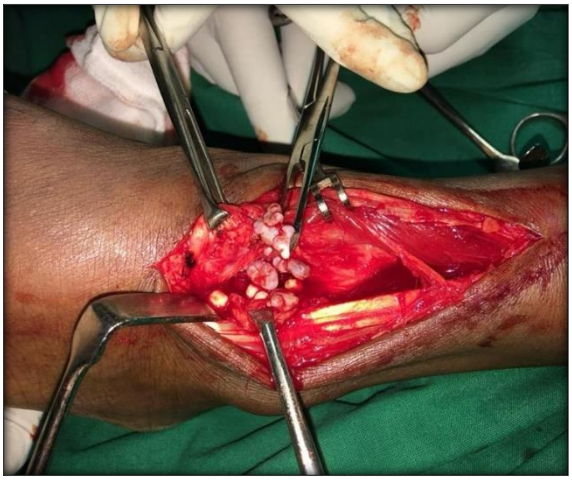

Figure 3: Intra operative showing multiple loose bodies

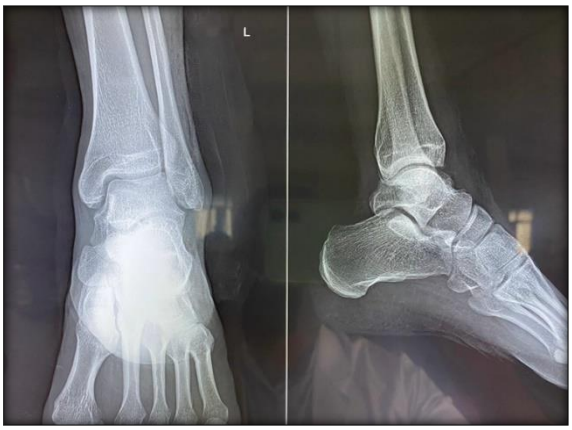

Figure 4: After 1-year post-op X-ray showing no signs of recurrence

DISCUSSION

Synovial chondromatosis is a rare clinical entity commonly involving the third to fifth decade,[1] with male predominance. There is increased predilection to the knee joint followed by hip, shoulder, and elbow with rare involvement of the ankle joint.[1,4] The most common joint involved in the foot is the subtalar joint.

Synovial chondromatosis is differentiated into primary and secondary.[2]

Primary

It is progressive, commonly seen in normal joints with the incidence of trauma in 24% of the population reported by Stensby et al.[3] The exact pathogenesis is unknown. It may be due to undifferentiated mesenchymal stem cell proliferation in synovium resulting in nodular foci of hyaline cartilage.[4] Silva et al concluded that primary synovial chondromatosis is a secondary disorder following cartilage shredding into the joint.[5]

Secondary

Secondary Synovial chondromatosis is seen in abnormal joints. It is more common than primary. Due to the absence of cytogenetic aberrations, they have very low chances of recurrence.

However, because of the vague symptoms and non-specific physical assessment with a vague history of ankle sprains, the diagnosis is difficult. The most common complaints are pain, swelling, stiffness, restriction of movements along catching sensations, which are often aggravated with physical activity and may present with tingling and burning sensation in the foot. Laboratory studies are usually normal. Radiologically, we see multiple intraarticular bodies of uniform size in the joint along with ring and arc mineralization.[6] The CT scan helps in differentiating primary from secondary. It shows calcified intraarticular nodules with the presentation of ring and arc pattern of mineralization or target appearance within any joint. MRI is the best modality of investigation with low or isometric nodules signaling T1-weighted images, and high signalling T2-weighted images. Bone scan helps in determining the level of activity of the disease. Hispothalogical examination shows the cobblestone appearance of the lobulated hyaline cartilage, surrounded by synovium with some degree of nuclear atypia without mitosis. It also helps in ruling out different joint disorders, benign conditions like pigmented villonodular synovitis, periosteal chondroma, synovial hemangioma, and malignant disorders like synovial chondrosarcoma.[2]

Milgram classified synovial chondramatosis into early, late, and transition depending on calcification and ossification of loose bodies.[7]

Management

The main aim of the treatment is to relieve pain, improve function, and prevent or limit chondral damage and arthritis. Even though it is a benign condition with progressive resolution, surgery mainly depends on symptomatic presentation and functional demands of the patient.

Conservative management includes NSAIDS, cryotherapy, and ultrasound therapy. Surgical management.[3]

Stage 1 - synovectomy.

Stage 2- synovectomy and removal of intraarticular bodies.

Stage 3- Only loose body removal.

The traditional method is arthrotomy and debridement. Before the closure of the wound, an abundance of normal saline washing is required.

Even 3% hydrogen peroxide can be used to decrease recurrence.

Arthroscopy proved to be a more effective method to treat both intraarticular and extraarticular pathologies with better resolution and lesser morbidity.[8]

Frequent complications after surgery include Degenerative arthritis, Joint dislocations, Recurrence.

CONCLUSION

Primary synovial chondromatosis of the ankle joint is a very rare presentation that requires high index suspicion for diagnosis. Even though arthroscopic loose body removal and debridement have better results we have used an open method for synovectomy and excision of loose bodies to prevent recurrence and are well oriented towards approach. Due to the atypical presentation of the site, suspicion is required for the diagnosis and careful management to prevent recurrence.

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