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Osteochondroma In Calcaneum And Talus In A 25 Years Old Female: A Rare Case Report

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Abstract
Osteochondroma is the most common benign bone tumor, but its occurrence in the foot, particularly in the talus and calcaneum, is exceedingly rare. This case report presents a patient with a symptomatic osteochondroma affecting both the talus and calcaneum, leading to pain and restricted ankle mobility. Radiological investigations, including X-ray and MRI, confirmed the diagnosis. The patient underwent surgical excision, which resulted in symptom resolution and functional improvement. Histopathological examination confirmed the diagnosis of osteochondroma. This case highlights the importance of considering osteochondroma in the differential diagnosis of foot tumors and emphasizes the role of imaging and surgical management in achieving favorable outcomes.

Keywords: *Osteochondroma, Talus, Calcaneum, Benign bone tumor, Foot tumor, Rare case*

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I. Introduction

Osteochondroma is a benign bone tumor that arises from endochondral bone and accounts for 20–50% of benign bone tumors and approximately 10–15% of all bone tumors (1). It commonly affects the long bones of the appendicular skeleton, such as the femur, tibia, and humerus, with rare occurrences in the small bones of the foot (2). The talus and calcaneum are particularly uncommon sites for osteochondroma, making its diagnosis and management challenging.

Most osteochondromas are asymptomatic and incidentally diagnosed. However, when they occur in the foot and ankle, they may present with pain, swelling, restricted movement, and even mechanical impingement due to the confined anatomical space (3). Imaging studies, including X-ray, computed tomography (CT), and magnetic resonance imaging (MRI), play a crucial role in confirming the diagnosis by identifying the characteristic cortical and medullary continuity with the host bone (4).

Surgical excision is the treatment of choice for symptomatic osteochondromas, particularly in cases where the tumor causes pain, limits movement, or raises concerns about malignant transformation (5). This case report describes a rare instance of osteochondroma affecting both the talus and calcaneum, emphasizing the diagnostic approach, treatment, and clinical outcomes.

II. Case Presentation

25 years old female complaints of pain and swelling over in right foot since 5 months, pain was insidious in onset and progressive in nature which dull aching type, pain aggravated on movement and relieved on rest and medication. Swelling was also insidious in onset and was initially peanut size and progressed to the present size

On Examination:
-26 years old female moderately built and nourished with BMI:24kg/m2

Local examination right foot:
-On Inspection:
-swelling of 3x3 cm over medial aspect of right foot
-no scars and sinuses
-no deformity
-On Palpation:
-no local raise of temperature

-tenderness present over and arount the swelling
-swelling is hard in consistency, immobile and transillumination test negative
-ROM at right ankle is painfull and restricted

Investigations:
-X-ray right ankle ap and lateral shows a bony growth over talus and calcaneum
-MRI Right ankle joint:Pedunculated osteochondromas with possible secondary chondromatous transformation arising from sustentaculum tali of calcaneum and medial tubercle of talus. Fig1 Fig2

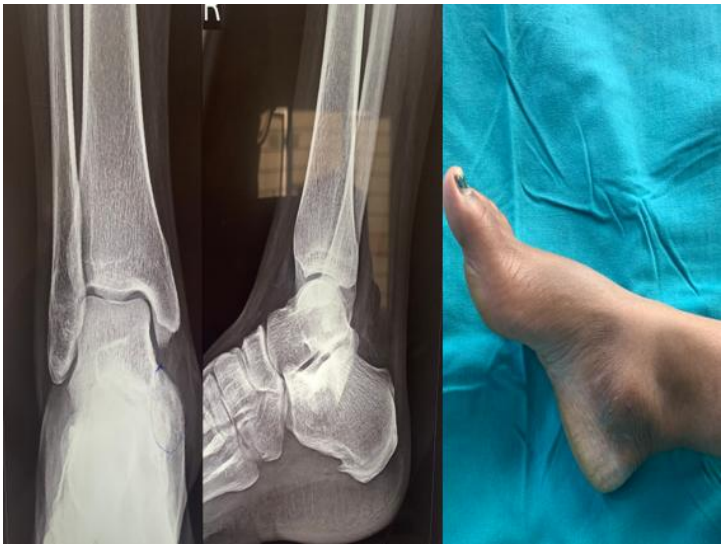


Fig1: show bony growth over talus and calcaneum
Fig2: shows swelling over medial aspect of right foot

Management
• Excision and biopsy of right calcaneum and talus bony growth was done.
• Intraoperative biopsy done and sent for histopathological reporting, pus culture and sensitivity, AFB/ZN staining.
• Histopathological Examination:Sections show a bony lesion composed of bony trabeculae interspersed by marrow spaces composed of adipocytes and fibrous tissue admixed with few thin walled blood vessels. The bony tissue is covered by a cartilaginous cap composed of sheets of mature chondrocytes seen within lacunae and showing endochondral ossification rimmed by osteoblasts and focally containing osteoclasts. No atypia / malignancy see, with the impression on osteochondroma negative for malignancy.
• AFB/ZN staining and culture yielded no growth.
• Post operative Xray showed satisfactory excison with no fracture.

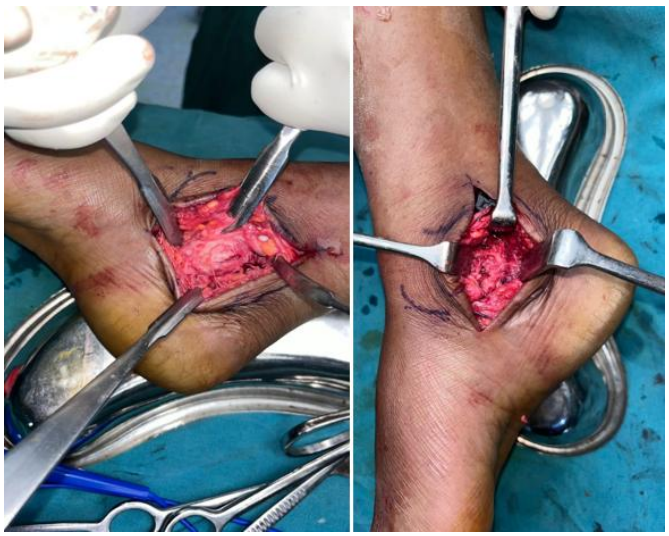


Fig3a Fig3b

Fig 3c

Intraoperative image shows bony growth over calcaneum and talus. (Figure 3a) . Intraoperative image showing post excision of the bony growth from calcaneum and talus (Figure 3b) . The intraoperative biopsy was performed and the specimen was sent for Histopathological examination, pus culture and sensitivity, AFB/ZN stainin(Figure 3c)

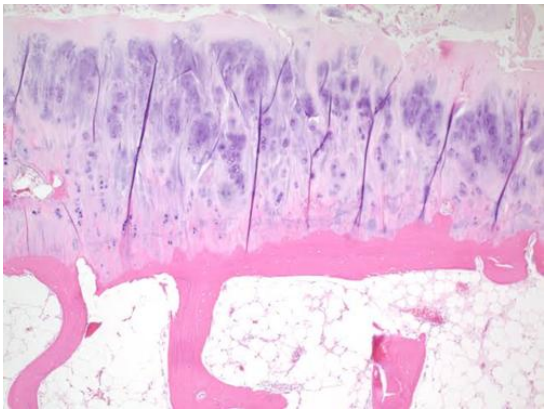
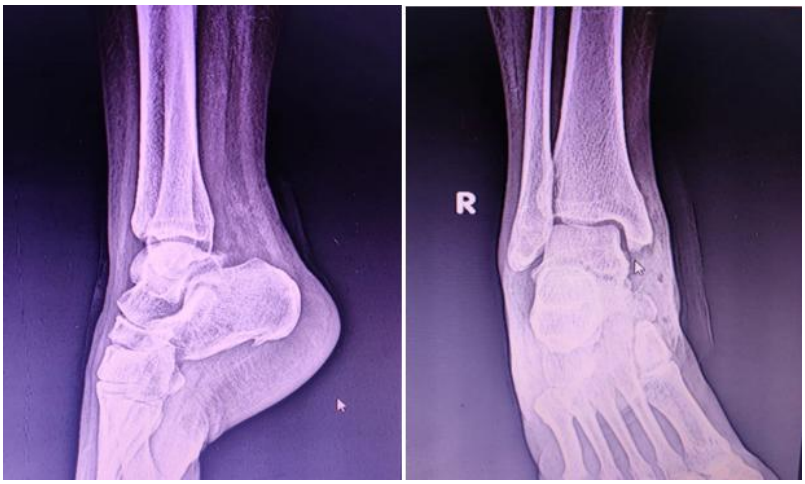


Fig 4 (Histopathology reports suggestive of osteochondroma with no malignancy)



Post operative Xray showed satisfactory excison with no fracture
(fig 5a and 5b)

III. Discussion

Osteochondroma is a developmental bone anomaly that occurs due to aberrant cartilage growth at the metaphysis of bones. The rarity of osteochondroma in the talus and calcaneum can be attributed to the embryological development of these bones, which differ from long bones commonly affected by the condition (6). While solitary osteochondromas are more common, multiple osteochondromas may be associated with hereditary multiple exostoses (HME), a genetic disorder involving EXT1 and EXT2 gene mutations (7).

In this case, the patient presented with localized pain and restricted movement, symptoms that are often seen in osteochondromas affecting weight-bearing bones. Radiological investigations confirmed the presence of exophytic bony growths with continuity of cortical and medullary bone, characteristic of osteochondroma. MRI was particularly useful in evaluating the cartilage cap thickness, which is essential in ruling out malignant transformation, as a cap thickness greater than 2 cm in adults is concerning for secondary chondrosarcoma (8).

The primary treatment for symptomatic osteochondroma is surgical excision, which was performed in this case. Excision is recommended when symptoms such as pain, neurovascular compression, or joint restriction occur. In our patient, surgical removal of the tumor led to complete symptom relief and functional recovery. Histopathological examination confirmed the diagnosis, demonstrating mature trabecular bone covered by a hyaline cartilage cap. Postoperatively, the patient had an uneventful recovery with no evidence of recurrence at follow-up.

Although osteochondroma is a benign lesion, it requires long-term follow-up in cases with suspicious features such as rapid growth, pain at rest, or irregular calcifications, which could indicate malignant transformation (9). This case highlights the importance of early diagnosis and appropriate management of osteochondroma in atypical locations to prevent complications.

IV. Conclusion

Osteochondroma of the talus and calcaneum is extremely rare but should be considered in the differential diagnosis of bony tumors in the foot. This case underscores the role of imaging in establishing the diagnosis and guiding surgical planning. Surgical excision remains the treatment of choice for symptomatic cases, with good functional outcomes and a low risk of recurrence. Awareness of this rare presentation is essential for timely diagnosis and management, ensuring the best possible patient outcomes.

References

[1]. Unni KK, Inwards CY. Dahlin's Bone Tumors: General Aspects And Data On 10,165 Cases. 6th Ed. Lippincott Williams & Wilkins; 2010.
[2]. Kitsoulis P, Galani V, Stefanaki K, Et Al. Osteochondromas: Review Of The Clinical, Radiological, And Pathological Features. In Vivo. 2008;22(5):633-646.
[3]. Murphey MD, Choi JJ, Kransdorf MJ, Flemming DJ, Gannon FH. Imaging Of Osteochondroma: Variants And Complications With Radiologic-Pathologic Correlation. Radiographics. 2000;20(5):1407-1434.
[4]. Dorfman HD, Czerniak B. Bone Tumors. Mosby; 1998.
[5]. Wuisman PI, Gier RE. The Treatment Of Symptomatic Osteochondromas. J Bone Joint Surg Am. 1997;79(8):1220-1230.
[6]. Bernard SA, Murphey MD, Flemming DJ, Kransdorf MJ. Imaging Of Hereditary Multiple Exostoses. Radiographics. 2003;23(2):409-419.
[7]. Schmale GA, Conrad EU, Raskind WH. The Natural History Of Hereditary Multiple Exostoses. J Bone Joint Surg Am. 1994;76(7):986-992.
[8]. Gioe TJ, Bray EA, Miller DC, Wenger DR. Osteochondroma Of The Talus: A Case Report. J Pediatr Orthop. 1983;3(3):362-364.
[9]. Ahmed AR. Giant Solitary Osteochondroma Of The Talus Causing Tarsal Tunnel Syndrome: A Case Report. J Foot Ankle Surg. 2010;49(1):62-66.