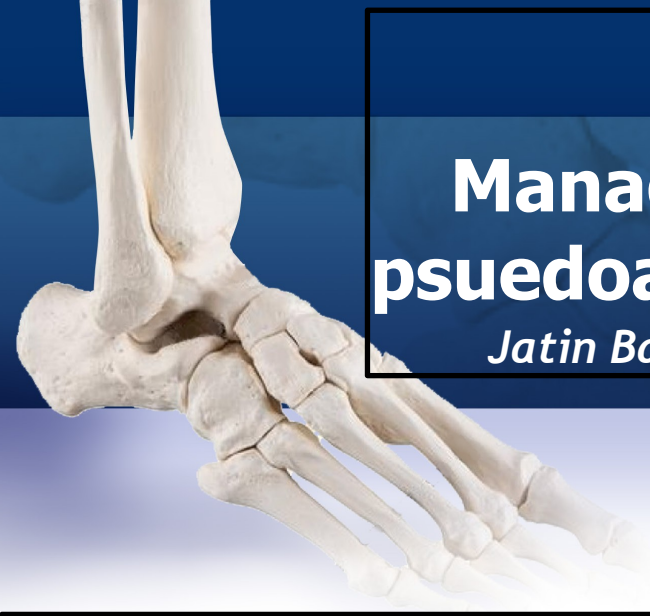




Management of a rare fifth metatarsal exostosis with psuedoarthrosis in a 29 year old male : A Case Report

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Introduction

Exostoses of the fifth metatarsal are uncommon particularly those associated with pseudarthrosis formation. Such lesions may present with chronic pain, altered gait, and functional limitation. Diagnosis is often delayed due to the rarity of the condition and its nonspecific symptoms. Authors present a case of chronic lateral foot pain caused by a fifth metatarsal exostosis with pseudarthrosis, highlighting the diagnostic and therapeutic challenges encountered.

Clinical presentation

A 29-year-old male retail worker presented with a history of intermittent lateral right foot pain since the age of 9, which had progressively worsened over the preceding two years. The patient described difficulty with footwear, occasional limping, and an altered gait characterised by preferential weight-bearing on the medial side of the foot, leading to increased wear on the medial aspect of his shoes. On examination, the right foot demonstrated a dysplastic, shortened fifth toe with splaying of the lateral rays. There was focal tenderness over the lateral midfoot and forefoot junction, particularly around the fourth and fifth metatarsals.

Investigation

Plain X-rays of the right foot showed a short, deformed fifth metatarsal with an exostosis and pseudarthrosis extending toward the fourth metatarsal. The opposite foot was normal. MRI confirmed a large exostosis from the proximal medial fifth metatarsal head abutting the fourth metatarsal, with pseudarthrosis, mild marrow edema, and dysplastic changes of the fifth metatarsal. Given the rarity of the condition, a SPECT-CT was planned after MDT review to assess metabolic activity at the pseudarthrosis site. the 3D Bone model provided valuable insights into the exact direction and orientation of the exostosis which helped in surgical planning.

Operative technique

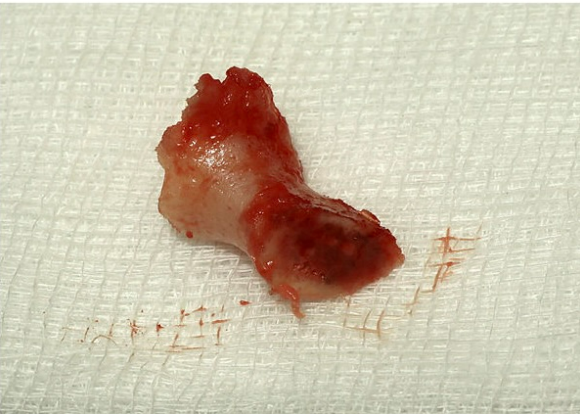
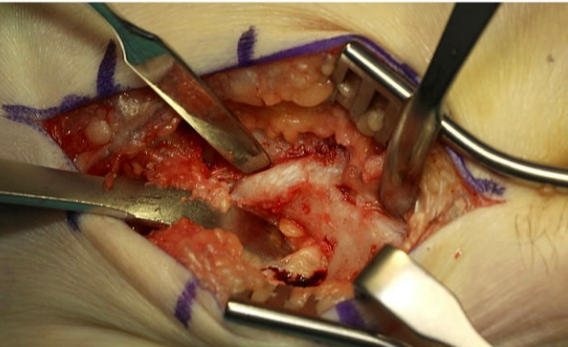
A longitudinal incision was made over the dorsal aspect of the foot, centered between the 4th and 5th metatarsals, following preoperative demarcation using an image intensifier. The peroneal tendons were identified and protected. Dissection was carried out lateral to the extensor tendon of the fifth toe.

A subperiosteal dissection was performed to expose the base and shaft of the 4th metatarsal, 5th metatarsal along with the intervening bony bridge. The boundaries of the bony bridge were clearly delineated and resected using a combination of oscillating saw and osteotome. Hemostasis was achieved, and bone wax was applied to the raw bony surfaces.

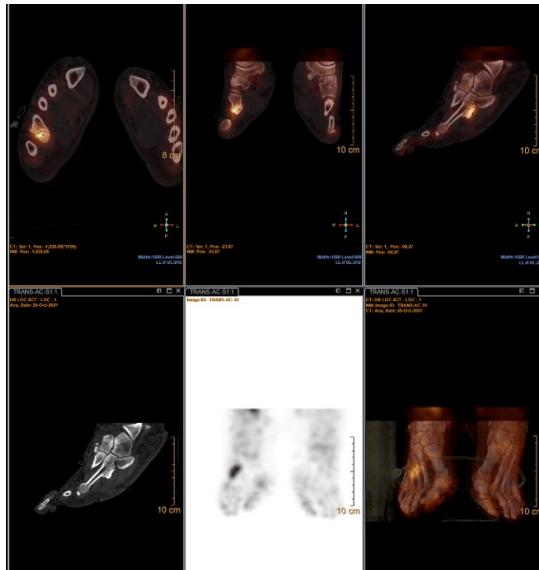
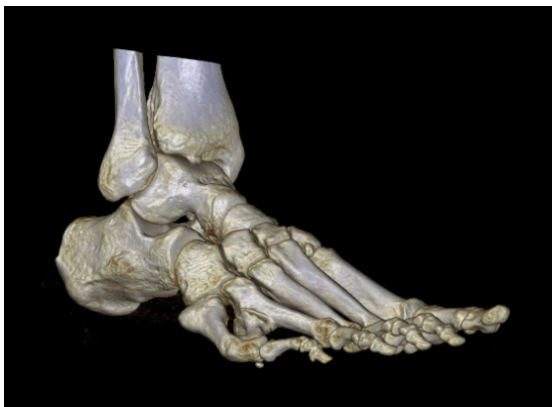
The excised bony bridge was sent for histopathological examination. The surgical site was thoroughly irrigated, and the wound was closed in layers. This approach aligns with current surgical recommendations for symptomatic exostoses and pseudarthrosis unresponsive to conservative treatment.



Preoperative xray showing exostosis with psuedoarthrosis



Intraoperative image showing exostosis with psuedoarthrosis



3D Reconstruction CT Scan (Top) and Bone scan (Bottom)



Postoperative Xrays showing removal of exostosis with no reoccurrence.



3D bone models showing exostosis from dorsal and plantar surfaces.

Post operative Course

Histopathological analysis confirmed features consistent with a benign exostosis. Follow-up blood tests revealed normal inflammatory markers. The patient reported marked improvement in pain and function, with improved MOXFQ scores postoperatively.

Discussion and Conclusions

This case highlights the importance of recognising structural anomalies like fifth metatarsal exostosis with pseudarthrosis in chronic lateral foot pain. Advanced imaging—MRI, SPECT-CT, and 3D reconstruction—was crucial for accurate diagnosis and surgical planning, with 3D modeling providing superior anatomical detail. Surgical excision and debridement led to symptom relief and functional recovery. Early multimodal imaging and timely intervention are key to achieving good outcomes, with ongoing follow-up advised to monitor for recurrence

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