RESEARCH PAPER

A Twisted Turn: Retrofibular Osteochondroma with Peroneal Tendon Subluxation — A Rare Case Report

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ABSTRACT

Background: Osteochondroma is the most common benign bone tumor, typically arising from the metaphysis of long bones. While the distal femur and proximal tibia are common sites, distal fibula is rarely affected. Retrofibular osteochondromas are uncommon and may cause compression or instability of adjacent peroneal tendons, causing mechanical symptoms such as snapping, subluxation, or pain.

Case Presentation: We present the case of a 14-year-old female with a gradually progressive swelling over the lateral aspect of left ankle for two years, associated with pain during prolonged ambulation. Clinical examination revealed a firm, immobile swelling superior to the lateral malleolus with a positive peroneal stress test. Radiographs and MRI demonstrated a retrofibular osteochondroma arising from the distal fibular metaphysis, with associated peroneal tendon displacement and tendinitis. The patient underwent complete surgical excision of lesion & retinacular repair. Histopathology confirmed osteochondroma. At six-month follow-up, she was asymptomatic with full ankle motion and no recurrence.

Conclusion: Retrofibular osteochondroma causing peroneal tendon subluxation is rare but should be considered in the differential diagnosis of lateral ankle pain in adolescents. Early recognition and surgical management prevent chronic tendon injury and yield excellent functional outcomes.

Keywords: *Osteochondroma, distal fibula, peroneal tendon subluxation, ankle tumor, benign bone lesion.*

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INTRODUCTION

Osteochondroma, or osteocartilaginous exostosis, represents nearly 20–50% of benign bone tumors & approximately 10–15% of all bone tumors.[1,2] These lesions develop as cartilage-capped bony projections on the external surface of bones undergoing endochondral ossification.[1,2] Most cases occur around the knee—especially distal femur & proximal tibia—where growth is most active.[1,2] The distal fibula is an unusual site, accounting for less than 1% of reported osteochondromas.[3,4]

While most osteochondromas are asymptomatic and discovered incidentally, symptoms occur due to mechanical irritation, compression of nearby neuro-vascular or tendinous structures, fracture, bursitis, or malignant transformation.[1,2,7] When the lesion arises from postero-lateral aspect of distal fibula, it may encroach on the peroneal tendon sheath, causing irritation, tendinitis, or subluxation.[3,4]

Peroneal tendon subluxation is usually traumatic, most commonly resulting from rupture or laxity of superior peroneal retinaculum.[3] Tumor-induced subluxation due to retrofibular osteochondroma is exceedingly rare, with only handful of cases documented in literature.[3,4,6] We report a case of retrofibular osteochondroma in an adolescent female presenting with peroneal tendon subluxation, successfully managed with surgical excision and retinacular reconstruction, consistent with previously reported management strategies.[3,4,7]

Case Presentation

A 14-year-old female presented to the outpatient orthopaedic clinic with complaints of swelling over lateral aspect of her left ankle for two years, gradually increasing in size. The swelling was painless initially, but she later experienced dull aching pain during long walks, relieved by rest. She denied any history of trauma, infection, or constitutional symptoms such as weight loss or night pain. There was no family history of similar lesions or multiple hereditary exostoses.

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Fig 1&2 - Pre-op Clinical Pictures

Inspection showed localized, well-defined swelling just above the lateral malleolus on the left side. The overlying skin was normal with no scars or sinuses. On palpation, the swelling was bony hard, immobile, and non-tender, measuring approximately 3 × 2 cm. No warmth or fluctuation was noted. Ankle movements were full and pain-free, although a snapping sensation was felt during active eversion and dorsiflexion of foot. The peroneal stress test was positive, suggesting tendon subluxation. Neurovascular examination was normal.

Fig 3 - Pre-op Xray

Plain radiographs of left ankle revealed a sessile bony outgrowth projecting from posterolateral aspect of the distal fibular metaphysis, with continuity of the cortex & medullary cavity with the parent bone, characteristic of osteochondroma.

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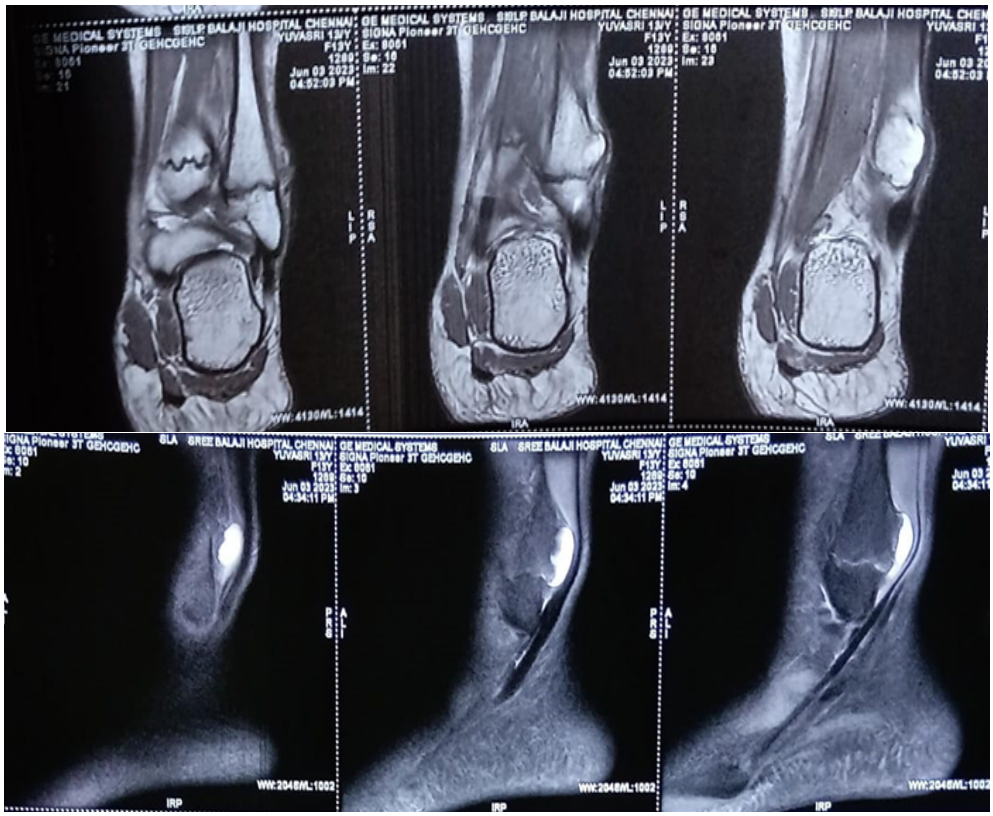
Fig 4 - Pre-op CT

CT scan confirmed the lesion's origin and projection posteriorly, displacing adjacent soft tissues without cortical destruction.



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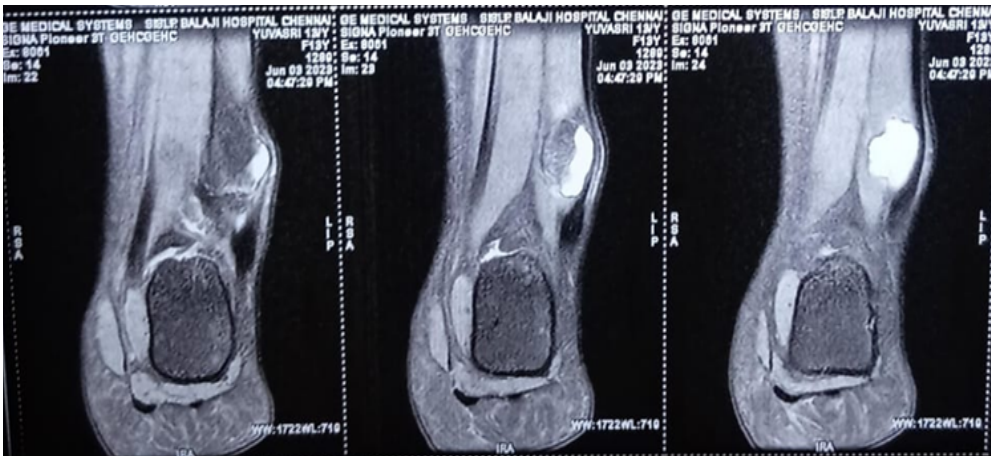

Fig 5, 6 & 7 - Pre-op MRI

MRI showed a bony protuberance measuring 1.1 × 4.8 cm with a cartilage cap of 0.6 cm thickness, displacing the peroneus longus and brevis tendons anterolaterally with associated tendinitis and mild sprain of the posterior talofibular ligament. The diagnosis of retrofibular osteochondroma with peroneal tendon subluxation was made.

SURGICAL MANAGEMENT

After preoperative evaluation, the patient underwent excision of the osteochondroma under combined spinal and general anesthesia. Patient was positioned in lateral decubitus position with affected limb uppermost. 6cm longitudinal incision was made along posterolateral aspect of distal fibula. A bony exostosis was visualized arising from posterolateral distal fibula. Peroneal tendons were displaced and irritated by the lesion but remained intact. Superior peroneal retinaculum was stretched & partially detached.

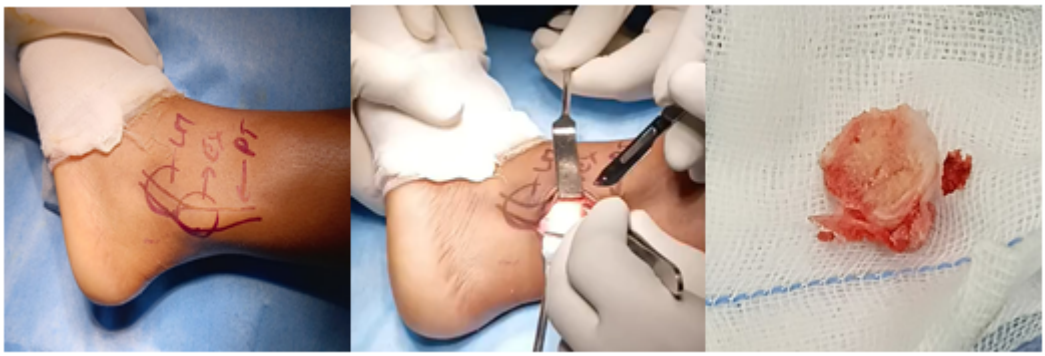

Fig 8,9 & 10 - Intra-op Images

Peroneal tendons were carefully retracted anteriorly. The lesion was excised in toto using an osteotome, ensuring complete removal of the cartilage cap. The bone surface was smoothened, and bone wax applied. The superior peroneal retinaculum was repaired and reinforced to restore tendon stability. Wound closure was done in layers after thorough irrigation. The specimen was sent for histopathology.

Histopathology and Postoperative Course

Histopathology showed trabecular bone continuous with the parent cortex & medulla, capped by a hyaline cartilage layer undergoing enchondral ossification. No atypia or malignant features were seen, confirming osteochondroma.

Postoperatively, the limb was immobilized in below-knee plaster slab for 2weeks. Sutures were removed on day 14, followed by gradual ankle mobilization and physiotherapy. By six weeks, the patient was fully weight-bearing with no pain or swelling. At six-month follow-up, she demonstrated full ankle range of motion, no snapping, normal gait, and no radiological evidence of recurrence.

Fig 11 - Immediate Post-op Xray

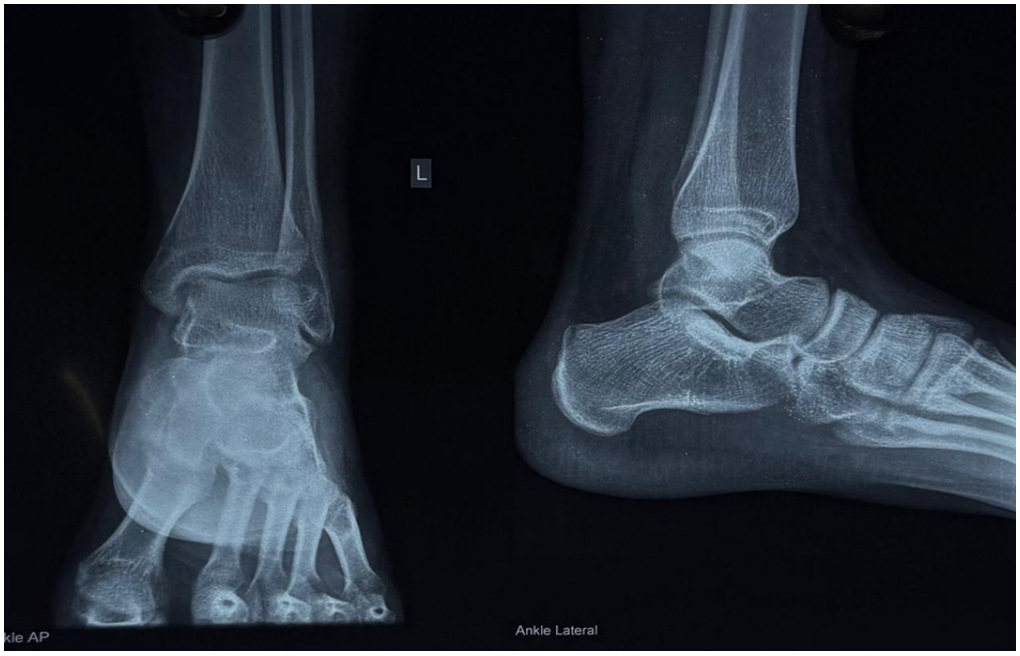

Fig 12 - Xray at 6 months Follow-up

DISCUSSION

Osteochondromas are developmental lesions arising from the growth plate and typically cease enlargement after skeletal maturity.[1,2] The majority occur in long bones, with distal fibular involvement being rare.[1–4] When located posteriorly, these lesions may impinge on adjacent soft tissues, including the peroneal tendons, leading to mechanical symptoms such as irritation or subluxation.[3,4,6] In the present case, osteochondroma originated from posterolateral metaphysis of the distal fibula, causing compression and displacement of the peroneal tendons, ultimately resulting in subluxation.[3,4]

MRI remains the imaging modality of choice, as it accurately delineates the cartilage cap thickness, defines soft tissue relationships, and helps exclude malignant transformation.[1,2] Surgical excision is indicated when the lesion causes pain, functional limitation, cosmetic deformity, or tendon subluxation.[2,7] Complete excision of cartilage cap is necessary to avoid recurrence.[1,7] Our patient demonstrated excellent postoperative recovery, consistent with outcomes reported in similar cases.[3,4,7]

Recurrence following excision is uncommon (<2%), most often related to incomplete removal of cartilage cap.[1,2] Malignant transformation is exceedingly rare (<1%), occurring predominantly in patients with multiple

hereditary exostoses rather than solitary osteochondromas.[5,8]

CONCLUSION

Retrofibular osteochondroma with peroneal tendon subluxation is an extremely rare entity. It should be suspected in adolescents presenting with chronic pain in lateral ankle, swelling, and snapping. Early diagnosis using MRI and prompt surgical excision with retinacular repair ensure excellent functional and cosmetic outcomes with minimal recurrence risk.

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