Os Subfibulare: A case report of painful fibular accessory ossicle

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A case report describing os subfibulare is presented. A 16 year-old female presents with a painful lump of the lateral malleolus. The os subfibulare formed a painful pseudo-arthrosis and the accessory ossicle was excised. Surgical excision resulted in complete, symptomatic relief. Case presentation includes radiographic and computed tomography findings with discussion of various accessory ossicles and their respective incidence in the lower extremity.

Key words: Os subfibulare, accessory ossicle, pseudo-arthrosis.

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Os subfibulare is a rarely reported ossicle involving the inferior portion of the fibular tuberosity of the ankle. In general, accessory ossicles commonly observed in order of frequency of the lower extremity include: tibiale externum, os trigonum and os peroneum. Accessory bones that are rare in the foot include accessory interphalangeus, os peroneum, anomolous os calcaneum and talus, os trignum and os tibiale extenum. Os peroneum can fracture following an inversion and may mimic sport injury.

If fractured, the injury can extend through a segment of the malleolus. An ossicle may also be avulsed as a ligament failure analogue, similar to a sleeve fracture of the patella. This is more common in the lateral than in the medial malleolus.

These avulsions, if not adequately diagnosed and treated, may progress to delayed union, nonunion, or a chronically painful ankle. We report a case of symptomatic os subfibulare.

Case Report

A 16 year-old female presented with pain of the right lateral ankle for six months duration. Pain was worse with shoe gear and painful when walking and running. She attempted various shoe gear and multiple courses of anti-inflammatory medication with no benefit or symptomatic relief. There was no evidence of instability or locking of the ankle joint. She denied any prior trauma. Clinical examination revealed a visible swelling 2cm by 2cm over the lateral malleolus. There was a palpable bony swelling that felt hard and fixed to the antero-inferior aspect of the lateral malleolus. It was tender on deep palpation. The ankle, subtalar and forefoot range of motion was within normal limits.

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Radiographic evaluation of the right ankle revealed an abnormality of the lateral malleolus. (Fig. 1A and B) There was an accessory ossicle at the lateral malleolus. The ossicle is enlarged and has a bifid appearance. Computed tomography (CT) coronal and sagittal images show a single, anterior medial accessory ossicle of the fibula or os subfibulare. (Fig. 2) Three-dimensional images show the ossicle with a local pseudo-arthrosis of the large os subfibulare along the distal anterior edge of the lateral malleolus. (Fig. 3)

Since symptoms were recalcitrant, exploration and removal of the ossicle was performed. An incision was centered over the area of edema and a pseudo-arthrosis was demonstrated. The accessory ossicle was separated easily.

Part of the anterior talar fibular ligament was sutured to the lateral malleolus. Post-operatively, the ankle was placed in a posterior splint and held in neutral position for two weeks. After suture removal, the ankle was protected in range-of-motion brace for six weeks. One year post-operatively, the patient was noted to be totally asymptomatic.

Discussion

Normally, the secondary center of ossification of the lateral malleolus appears during the first year of life, and fuses with the shaft at 15 years. Twenty two percent of normal children under the age of 16 have one or more accessory ossicles in the foot and ankle. The accessory ossicles most commonly observed, in order of frequency, are the tibiale externum, os trigonum and os peroneum.

In 3,460 radiographs of patients over 7 years of age, the os tibiale externum was the most common accessory bone.
The precise cause of symptoms in patients is conjectural. The most likely explanation is that anomalous ossification centers, not yet fused to the body of the epiphysis, have been subjected to trauma, causing disruption to the fibrous or cartilaginous attachment and results in a fibrous union or pseudoarthrosis. Mechanical irritation or joint instability may produce local pain and tenderness and contribute to recurrent ankle sprains.

In this case, the operative findings revealed a mobile, separate ossicle attached to the lateral malleolus with an established pseudo-arthritis. In summary, symptomatic os subfibulare is extremely rare. When symptoms persist, surgical excision and repair of collateral ligament is indicated.11

References