Case Report

Intraosseous Ganglion Cyst of the Distal Tibia in a Young Male Patient

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Abstract

The case of a 25-year-old man with a ganglion cyst of the medial aspect of the ankle has been presented. Biopsy was taken during the surgery and sent for histopathology, which showed cystic area lacking epithelial lining filled with mucoid material. The patient was treated with curettage of the medial malleolus.

Keywords: Benign tumor, ganglion, intraosseous ganglion, medial malleolus

Introduction

A ganglion cyst is defined as a benign cystic mass that is surrounded by dense connective tissue, without a synovial lining, and is filled with a gelatinous fluid rich in hyaluronic acid and other mucopolysaccharides.[1] It is common near joints, tendons, and tendon sheaths. However, the occurrence inside the bone is rare.[2]

Intraosseous ganglia are often multiloculated lesions composed of fibrous tissue with extensive mucoid changes located in the subchondral bone adjacent to the joints.[3]

They occur in mature skeletons of all ages, but have a peak incidence in the fourth and fifth decades of life.[4] Moreover, they are most commonly located around the wrist joint as a soft-tissue swelling originating from scapholunate or radioscaphoid joints or surrounding tendon sheath.[5] However, the occurrence in the subchondral region of the ankle is rare, with only few reports in the literature.[6]

We report a case of an intraosseous ganglion of the medial malleolus with no communication with joint space in a 25-year-old male who was treated effectively by curettage.

Case Report

A 25-year-old man, not known to have any medical illnesses, was referred to our clinic for the treatment of limping and pain in the medial aspect of his right ankle which started 2 months ago and had deteriorated in the past 7 days. The pain was aching in nature and was aggravated on weight bearing. There was no history of trauma.

On examination, there was no obvious deformity noticed and no swelling or skin changes; on palpation, there was no effusion, swelling, or tenderness. The patient had full range of motion in his ankle, and there was no vascular or neurological abnormality.

Blood examination including total lymphocyte count, erythrocyte sedimentation rate, C-reactive protein, rheumatoid factor, and serum uric acid was unremarkable.

Plain radiographs revealed solitary radiolucent lobulated lesion with marginal osteosclerosis seen in the medial malleolus with no communication with the joint space [Figure 1].

Magnetic resonance imaging (MRI) of the ankle showed solitary, unilocular, well-defined, intraosseous, periarticular lesion on the medial malleolus of cystic components and hypointense components (calcification), hypointense rim in T1 and T2 (osteosclerosis), and surrounded by bone marrow

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Figure 1: (a) Ankle X-ray anteroposterior view. (b) Ankle X-ray lateral view

edema measuring 15 mm with no postcontrast injection enhancement. There was no communication with the joint space or fracture [Figure 2].

The differential diagnosis includes giant cell tumor, benign cyst, aneurysmal bone cyst or nonossifying fibroma, and Brodie abscess.

The patient underwent surgical debridement of bone lesion through medial incision over the medial malleolus; three biopsies were taken during the surgery and sent for histopathology. Intraoperatively, there was no pus detected; three swabs for culture and sensitivity were taken, and no bone graft was used.

No organisms were grown from the microbiology swab specimens. Histology showed cystic areas lacking epithelial lining filled with mucoid material; areas of fibrosis with reactive fibroblasts were adjacent to the cystic areas. Fragments of bone trabeculae were also identified.

Postoperatively, he was afebrile, and a nonweight-bearing short-leg cast was applied to protect the ankle joint. The cast was removed at 6 weeks, and physiotherapy commenced [Figure 3].

At follow-up, the patient was asymptomatic. The cavity was radiologically filled and he returned to work.

At the latest follow-up (5 months postoperatively), the patient had no pain or limitation of movement, and there was no evidence of local recurrence.

Discussion

Intraosseous ganglion cyst is a rare benign cystic lesion of the bone with a minor male preponderance. The youngest reported patient in the literature was aged 18, whereas the oldest patient was 86. Most patients are in the middle-age group.[7,8]

The etiology of intraosseous ganglia is uncertain. It has been shown that cysts in osteoarthritis arose from an intrusion of

Figure 2: Preoperative ankle magnetic resonance imaging

synovial fluid into bone at the joint surface. Other theories as to the cause of intraosseous ganglia include degeneration in intramedullary connective tissue and metaplasia of skeletal connective tissue.[9]

Patients may complain of persistent pain that worsens with the use of the affected region. Physical examination may reveal swelling with tenderness; however, there are often no abnormal findings.[10] On radiographs, the intraosseous ganglia appear as well-defined, lytic, oval, or round lesions located in the juxta-articular (subchondral) region with or without cortical expansion and soft-tissue extension.[10]

The differential diagnosis of intraosseous ganglion includes unicameral bone cyst, chondromyxoid fibroma, Brodie abscess, giant cell tumor, fibrous dysplasia, and pigmented villonodular synovitis.[11]

Surgical excision is required in the majority of cases to confirm the diagnosis as well as to alleviate pain when conservative measures are unsuccessful. The recurrence rate following excision of soft-tissue ganglions can range from 7% to 43%. 15 It appears that the recurrence following curettage of an intraosseous ganglion is rare.[12]

Conclusion

An intraosseous ganglion is a rare lesion. However, it is one of the causes of ankle pain and limping; therefore, it should be included in the differential diagnosis of any benign osteolytic lesions in the ankle joint.

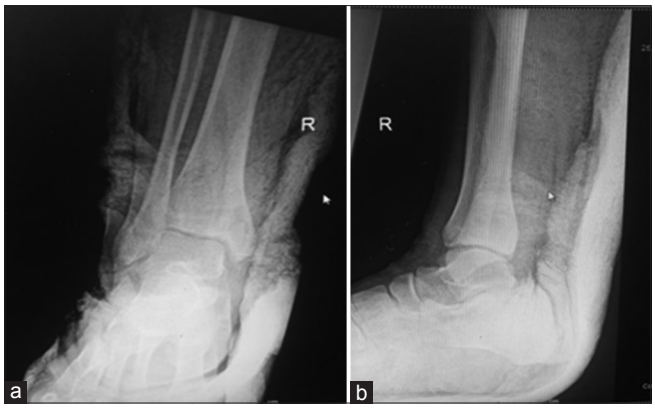

Figure 3: (a) Postoperative ankle X-ray anteroposterior view. (b) Postoperative ankle X-ray lateral view

MRI is an essential method of imaging for diagnosis and operative planning, accompanied with histopathology to confirm the diagnosis.

Surgical curettage is the treatment of choice.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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