

A rare case of intra-osseous ganglion cyst of lower end of tibia

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Abstract

Introduction: A 40 year old male came with complain of pain over left ankle region since 1 month, which was progressive in nature and aggravated while walking. On examination, there was mild tenderness over the anterior aspect of the distal tibia. X-rays of tibia with ankle joint were suggestive of a lytic lesion on the distal end of tibia. MRI revealed a benign lesion with the possibility of either an INTRA OSSEOUS GANGLION CYST or GEODE. Excision of the cyst with curettage and cementing was done and the cyst was sent for histo-pathological examination which established the diagnosis of intra osseous ganglion cyst. Patient was satisfied after the surgical excision of the cyst as he was relieved of pain.

Keywords: Intra osseous ganglion, distal tibia, benign lesion, excision with curettage and cementing.

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INTRODUCTION

A ganglion cyst, also known as a Bible cyst or Bible bump, is a benign soft tissue tumor that may occur in any joint, but most often occurs on or around joints and tendons in the hands or feet.¹ This can be traced to the scapho-lunate or radio -scaphoid joints or surrounding tendon sheath. Intra osseous ganglion are rarely reported and occur mainly as carpal bone cysts.^{2,3,4,5} Common locations of intra osseous ganglion cyst are epiphyses of long bones (medial malleolus, femoral head, proximal tibia, carpal bones)/sub-articular flat bone (acetabulum). Intra osseous ganglia of the distal tibia are rare.^{6,7} Recurrence is uncommon.⁸ We report a

case of an intra osseous ganglion of the distal end of tibia with no soft tissue involvement.

CASE REPORT

A 40 year old male patient presented with gradually increasing pain over left ankle joint since 1 month which aggravated while walking and relieved on rest. There was no history of trauma and was not associated with fever, loss of weight or any other constitutional symptoms. Past history and family history was non contributory. On clinical examination there were no inspeactory findings. On palpation, mild tenderness was present over the anterior aspect of distal tibia. There was no local rise of temperature. Range of motion of the left ankle joint was full and free. There was no loss of power and sensation. Laboratory data were within normal limits. X ray of the left ankle joint revealed a well defined, lobulated, solitary lytic lesion with a thin rim of sclerotic bone. MRI was suggestive that the epiphyseal cystic area in the distal tibia in the subchondral region is a benign lesion with surrounding minimal marrow edema with differentials of

1. Intraosseous ganglion cyst
2. Geode

Surgery in the form excision of cyst with curettage and cementing was done and the excised cyst was sent for

histopathological examination. Histopathological report confirmed the diagnosis of intraosseous ganglion cyst.

Operative Procedure

After spinal anaesthesia patient was given a supine position. After seeing the C-Arm image, an anterior incision was taken over lower end of tibia. Soft tissue was dissected. Bone was exposed and a cortical window of approximately 3cm x 2cm was made. The cyst was exposed and excised. Cyst was gelatinous in consistency and measured approximately 1.5cm x 1.5cm. Curettage was done and a thorough wash was given. 1 gm Antibiotic (Vancomycin) was mixed in 20 gms of cement and the cavity was filled with it. After a thorough wash closure was done and a below knee posterior slab was given. The intra operative specimen (cyst) was sent for histopathological evaluation. Post operative x ray was done.

Post operatively sterile dressings were done on POD 2, 5 and 8, and the ankle ROM was started on POD 8. Sutures were removed POD 12. Non weight bearing walking was started with a walker.

DISCUSSION

Despite their benign histology, the cysts can be problematic. Pain and mass effects associated with the lesions can make ambulation and wearing shoes difficult.⁹ Intra osseous ganglion cysts are small cavities occurring within subchondral regions of bone near a joint surface. These lesions are identical in appearance to their soft tissue counterparts. They probably represent a degenerative process and in the presence of a normal joint

are referred to as intraosseous ganglion cysts. The majority of intra osseous cysts present with pain which aggravates on standing or exercising.¹⁰ Radiographic studies reveal well defined lytic area with a prominent sclerotic margin. Cysts are usually 1 cm in diameter. Cysts more than 2cms in size are uncommon. The radiographic studies do not show a connection with the joint or adjacent synovial tissue.¹⁰ Histologic findings show that the walls of the cyst are composed of flattened fibrous tissue without an epithelial or endothelial lining. In most examples the fibrous tissue capsule has 2 distinct layers. The outer layer is composed of compact fibrous tissue elements while the inner layer has a loose myxoid appearance.¹⁰ Intraosseous ganglion is a benign, nonneoplastic bone lesion with histological similarity to that in soft tissue.^{11,12,13} Intraosseous ganglion contains mucoid viscous material with no epithelial or synovial lining.¹⁴ Peak incidence of intraosseous ganglion is in the 4th and 5th decades of life, and it is rare in children.^{15,16} The prevalence of intraosseous ganglia has been reported to have a small male preponderance.¹⁷ The differential diagnoses include tumors that arise in the epiphyseal to metaphyseal region, such as giant cell tumor of bone, aneurysmal bone cyst, and chondroblastoma.^{14,15,18} Synovial fluid intrusion is the currently favored pathological mechanism of soft-tissue ganglion.²⁰ The etiology of intraosseous ganglion is unknown. One theory is that intraosseous ganglion may be caused by penetration of a soft-tissue ganglion into the underlying bone.^{11,19}

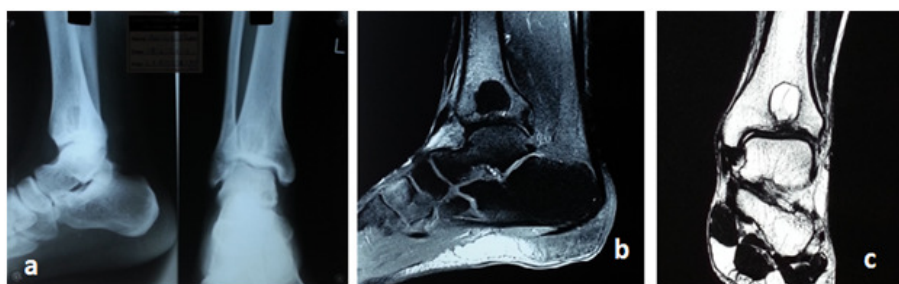


Figure 1 a): X-Ray: well-defined lytic lesion over distal end of tibia just above the particular surface with well demarcated rim of sclerotic bone
b): MRI: lesion with well defined and lobulated margin measuring approx 1.8cm antero-posteriorly
c): MRI AP view: 1.6cm lesion extending up to the subarticular region with erosion of the subchondral bone

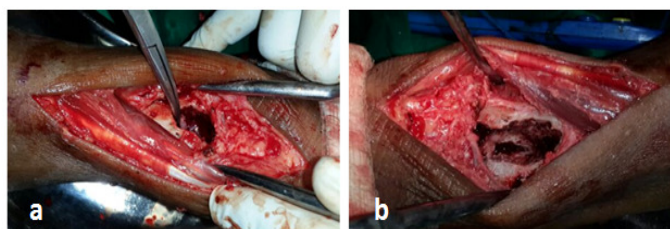
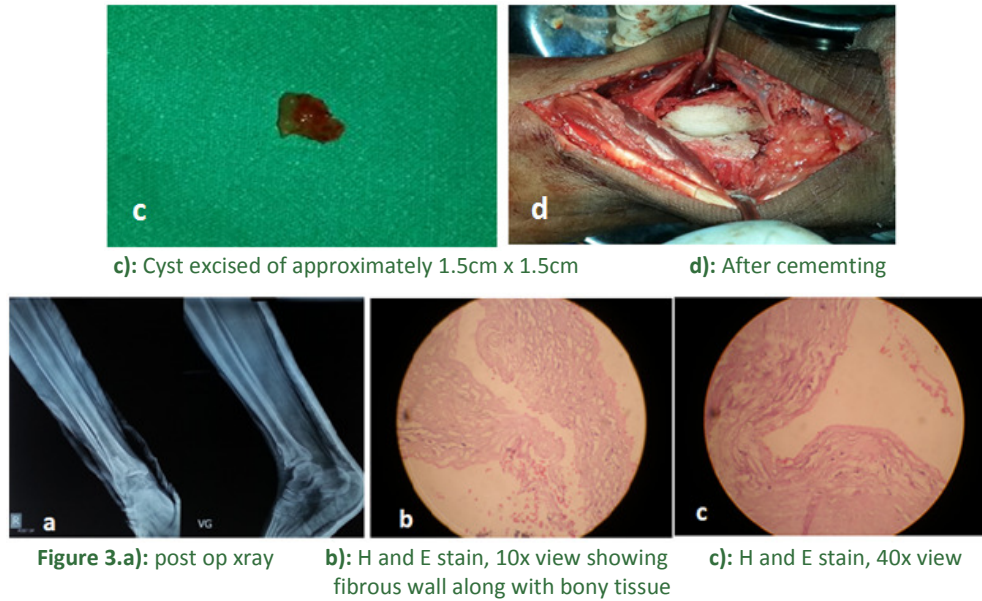


Figure 2 a): Cortical window made,
b): After curettage



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