

A Rare Clinical Entity : Unicameral Bone Cyst of Humerus

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ABSTRACT

A case report presents the experience of diagnosis and management of Unicameral Bone Cyst(UBC) of midshaft Humerus. The lesion had a pathognomonic radiologic appearance of Unicameral Bone Cyst and diagnosis was histologically confirmed. We treated operatively by open curettage with auto graft bone augmentation with external fixator and significant improvements was noted in post-operative period. On basis of analysis of treatment results open curettage with auto graft bone augmentation with external fixator. if required, effective procedure Obtaining good functional results and shorter period of treatment.

KEYWORDS: Pathological fracture, Curettage, Unicameral Bone Cyst, bone grafting, External Fixator.

INTRODUCTION:

Unicameral bone cyst (UBC), is also known as a simple bone cyst. Unicameral Bone Cyst is a benign lytic lesion. UBCs can occur in any bone structure, usually found in the proximal humerus and proximal femur region. Additionally, it usually affects males twice more than females. UBC is usually lined by membrane of variable thickness and consist of solitary cavity filled with clear yellow fluid. UBC comprises approximately 3 % of all primary bone lesions. One of the theories for UBC suggests that the cysts result from a disorder of the growth plate. Another study suggests that the cysts result from developmental anomaly in the veins of the affected bone when there is problems with circulation due developmental anomaly of the affected bone. Some study suggests that frequent repeated trauma to the bone develop high risk of developing a bone cyst. These lesions are usually asymptomatic and found usually when patient develops pain, swelling and stiffness of the adjacent joint also occur. The most common complication of UBC is a pathological fracture, and this is most frequent cause of presentation.

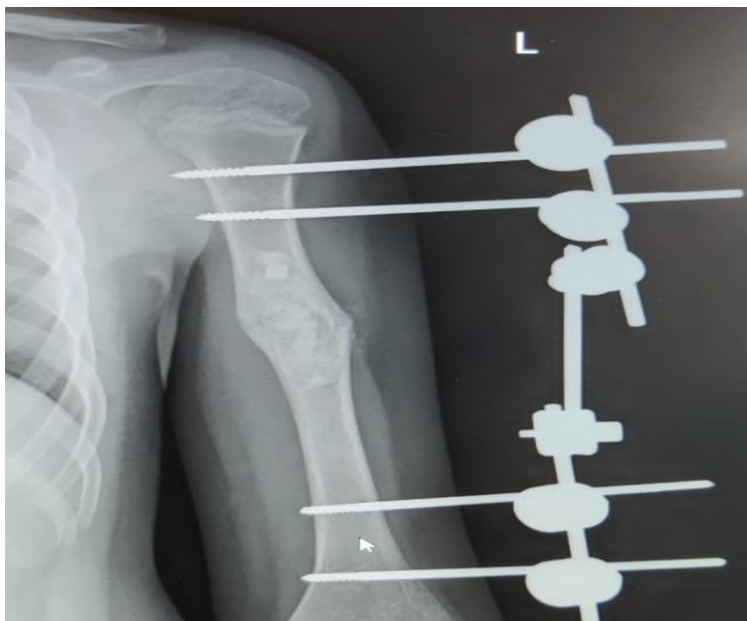
CASE REPORT:

A 9-year-old Male patient presented to the orthopaedics outpatient department with complaints of pain and swelling in arm since 20 days. Pain was insidious in onset, gradually increasing, aggravated while movements over left upper limb and relieved with bed rest and analgesics. Patients mother gave alleged history of trauma to left arm region due to self-fall at home 2 years back. On examination, swelling was localised to left midshaft humerus region, soft, tender, compressible, non reducible, and non-pulsatile. Radiological evaluation was done which was suggestive of solitary

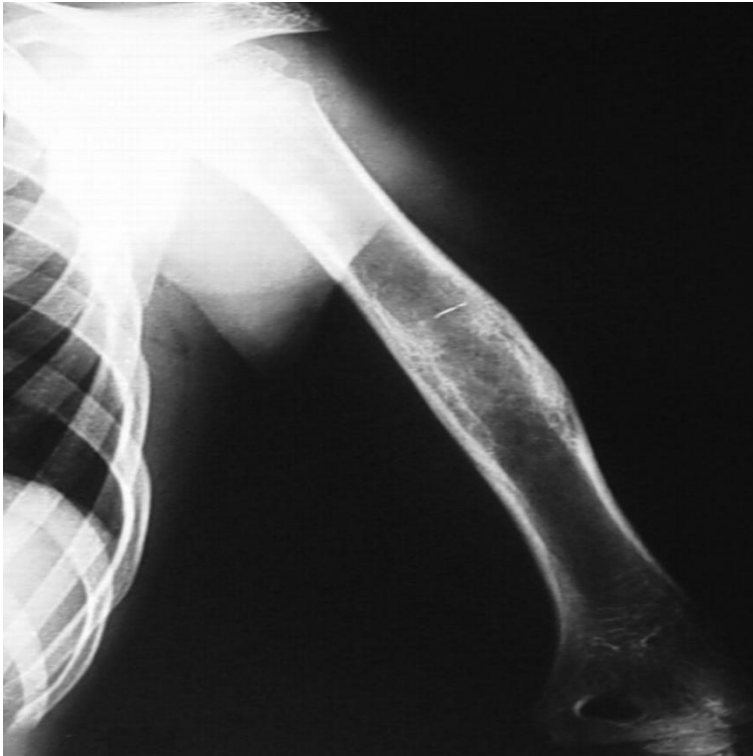
benign lytic bony lesion with sclerotic margins in left midshaft humerus. Patient was operated under General Anaesthesia. Through lateral approach dissection was done in layers. Intra operatively the lesion was assessed and under fluoroscopic guidance a k-wire was passed from infero-lateral margin of lesion upto the cavity to localise and create an opening in the bone to drain out the fluids inside the cyst. After the fluid is drained, curette is used to scrape the lining tissue out of the lesion clear yellowish fluid leaking from the lesion was noted and thorough open Curettage was done. Tissue and fluid harvested from cavity was sent for histopathology reporting and culture -sensitivity. Bone graft harvested from iliac crest was filled in place of cavitory lesion and then the pathological fracture was stabilised with external fixator. External Fixator was removed after for 4 weeks followed by regular physiotherapy. Histo pathology Reporting confirmed diagnosis as unicameral bone cyst.



AP View of Left Humerus s/o benign lytic lesion



Post Operative AP view of humerus



Post Operative AP View After 12 weeks

RESULTS:

Our aim was to achieve pain-free movements at left upper limb. During follow up examinations at 1, 3, 6 months patient had painful and full range of motion over left upper limb. The full range of pain free movements at left upper limb in Elbow And Shoulder Range Of Motion was documented and patient could resume daily activities.

DISCUSSION:

In younger age group incidence of involvement of atypical sites for UBC are calcaneus, talus and ilium, mid shaft humerus are significantly more and most often it is asymptomatic UBC may be revealed by pain, fissure or a pathological fracture. The cause of UBC still remains unknown, but being investigated with further ongoing research, Jonathan Cohen proposed a theory that the UBC occurs when interstitial fluids accumulate in one from blockage in cancellous bones. Because it doesn't causes any symptoms, a unicameral bone cyst (UBC) can expand and weaken the bone, which creates bones very prone for fracture. A bone weakened by a cyst can break by just a minor injury. This type of fracture is referred as a "pathologic fracture". This may progress to the "fallen fragment" sign, pathognomonic of a simple bone cyst, which describes the migration of a fragment of bone to a dependent portion of the fluid filled cyst. Similarly, an aspect with a gas bubble which has migrated upward "rising bubble sign" is also suggestive of UBC. Radiographically, UBC is well-circumscribed, radio lucent bony lesion with sclerotic margins. For management of UBC Curettage and bone grafting procedure is done. The cyst is aspirated completely and then surrounding walls of cyst scraped out of the bone. After curettage, the empty cavity of the cyst is filled with a Bone graft- A bone Graft taken from a donor (allograft), OR from another bone of patient's own (auto graft) or bone cement mixture.

CONCLUSION:

The excellent functional recovery depends upon proper diagnosis, treatment and early functional training. UBC is rare clinical entity and represents approximately 3 % of all primary bone lesions. Symptomatic patients with chronic pain should be considered for surgical intervention-open curettage with bone graft augmentation as a definitive treatment option.

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