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A rare case report of GCT of distal end ulna

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Abstract

Introduction: Several cases of long bone giant cell tumor have been reported in the literature. We report the case of a patient with a giant cell tumor in the distal ulna. This is very unusual, with a reported incidence of 0.45 to 6%.

Case presentation: A 25-year-old female presented with a painful swelling of the right wrist. After performing a detailed clinical examination and investigations, a diagnosis of distal ulna giant cell tumor was made. The tumor was treated with an En bloc Resection, biopsy and stabilization of wrist using tri cortical bone graft.

Conclusions: This tumor may have a good prognosis if it is diagnosed early and radically treated. It is important to be aware of atypical cancer localizations in order to perform a proper diagnosis.

Keywords: Case report, GCT, cancer localizations

Introduction

Giant-cell tumor (GCT) of the bone is a benign, and locally invasive tumor. It is accounting for about 3% to 5% of all primary bone tumors. GCTs of the bone usually occur at the epiphysis of the long bone such as femur, tibia, humerus, and radius. GCTs occurring at the distal end of the ulna are extremely rare, accounting for 0.45% to 3.2% of all the cases of GCTs.

Case report: A 25 year old female presented to the out patient department with complaints of pain and swelling over the right wrist for the past 1 year. There was no history of any associated trauma. Swelling was insidious in onset and gradually progressive.

Examination: Rt Wrist- Swelling of 5x4 cms over the ulnar aspect of right wrist. Not warm, Tenderness (+), Hard in Consistency, Non Mobile, Skin over the swelling Pinchable. ROM – Full and Painful.

X rays: A well-defined *eccentrically* placed lytic lesion involving distal ulna with a *nonsclerotic margin*. The Sub chondral bone is intact.



Fig 1: X ray AP and Lateral

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MRI: T 1 image – showing well defined hypo intense lesion involving epi metaphysic. Sub articular location. Fat suppression image- Hyper intense expansile lesion involving distal end of ulna. Articular surface appears normal.



Fig 2: Articular surface appears normal

Treatment

Planned for En bloc Resection and Biopsy. 10 cm incision made over the distal ulna on the dorsal aspect of ulna. Skin and subcutaneous dissection done and tumour exposed. Care taken not to injure the capsule of the tumour. Both the proximal and distal ends of the tumour exposed. Leaving a tumour free margin of 2 cms osteotomy performed using multiple drill holes. The Entire tumour is dissected out with the Capsule intact. To *Fix the unstable wrist following Surgery*- After resection of tumour, tricortical bone graft harvested from the iliac crest and fixed to the distal radius to improve the wrist stability. A portion of extensor carpi ulnaris separated off from its attachment and passed through a drill hole made on the proximal end of ulna. The specimen was sent to biopsy.



Fig 3: Exposing the tumour

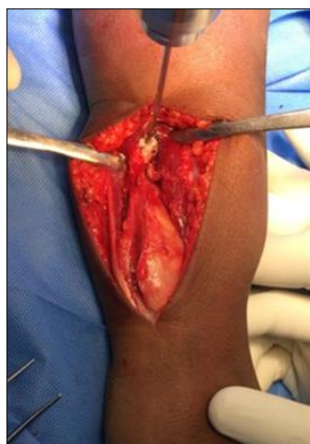


Fig 4: Osteotomy using multiple drill holes

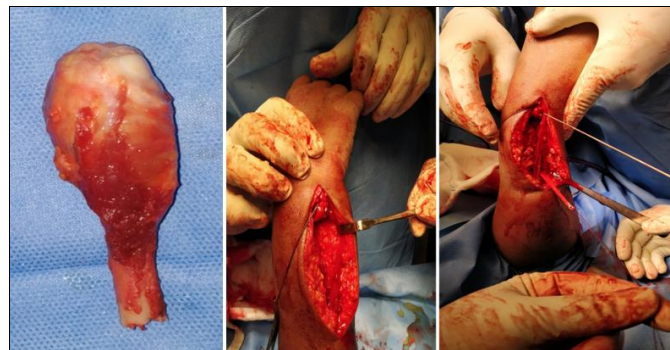


Fig 5: Completely Excised tumour and fixing the unstable wrist

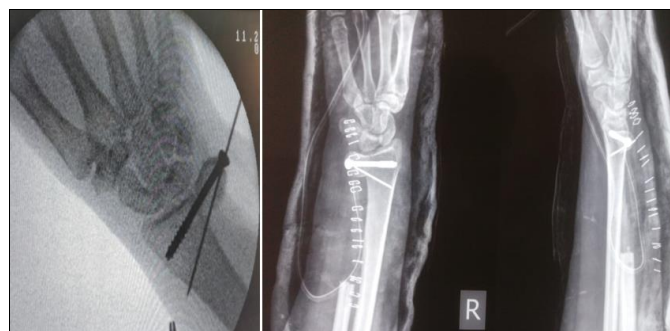


Fig 6: C arm picture and Post operative X ray

Results

Patient was immobilised in AE slab for 6 weeks. After 6 weeks plaster was removed and wrist mobilisation started. The range of wrist movements was full and painless. Biopsy report also confirmed the diagnosis. There was no wrist instability or pain on further follow up.

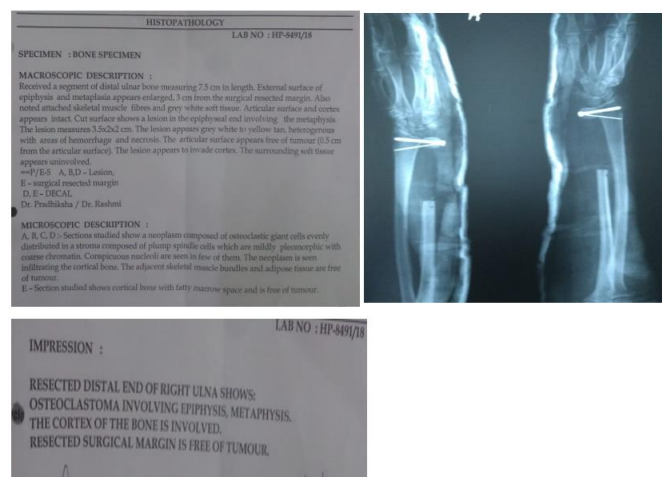


Fig 7: 6 weeks post operative X ray

Discussion

Giant-cell tumor (GCT) of bone is essentially benign tumor. Occurrence in the distal ulna is rare. There has been an intralesional curettage with bone or artificial material graft or en bloc resection in the treatment of a low-grade GCT of the distal ulnar end. Resection of the distal end of the ulna, so-called the Darrach's operation, is a simple and easy solution but long-term results are still unpredictable, especially with high stress manual labour. This may be attributed to abnormal stress distribution after resection of the distal ulna. The Sauvé-Kapandji procedure [3, 4] and radiolunate fusion have been used for reconstruction to prevent ulnar translation of the entire carpus. However, there are many problems including

the necessity of a healthy distal end of the ulna and an unacceptable decrease in range of motion of the wrist after these surgeries. Goal for our young active patient was to preserve as much wrist instability and movement as possible. Hashizume *et al.* used a longer iliac bone graft to achieve the buttress effect against axial stress loading, hence the term “ulnar buttress arthroplasty”. In the present case, the distal stump of the ulna after resection of the distal ulna including GCT lesion was stabilized by the Iliac graft. The ulnar support consisting of iliac bone graft, preservation of TFCC and ulnar collateral ligament leads to good result.

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