**Giant Cell Tumour of Proximal Ulna – Atypical Location in a 32 Yr Old Male – A Rare Case**

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**Abstract:** Giant cell tumour (GCT) of bone, or osteoclastoma, was classically described as a locally invasive tumour that occurs close to the joint of a mature bone. GCT was rare, generally benign and locally aggressive tumour. It represents approximately 3% to 5% of all primary bone cancers. It usually occurs in adults between the ages of 20 and 40 years. However GCT of bone was uncommon in children younger than 15 years and in adults older than 65 years of age. The ulnar metaphysis is an unusual site (0.45% to 3.2%) for a primary bone GCT. Typically the tumour appears to be an expanded radiolucent lesion located in the epiphyseal end of the tubular bone. In our experience, a substantial proportion of patients seek traditional means of treatment before medical consultation and they present late with extensive involvement of soft tissue and articular surface, making joint preservation difficult or impossible. For reconstruction, several options have been described, which include fibular autografts, allografts and cement augmentation. Inherent to all these procedures is the risk of delayed union of the graft and preserving functional mobility of the joint. We report a rare case of a proximal ulna GCT diagnosed in a 32 years old Male. It was treated with intralesional curettage, and with bone cement reconstruction.

**Keywords:** Ulna, Bone Cement,

**I. Introduction**

Giant cell tumour of bone was a locally invasive tumour which was close to the joint of a skeletally mature bone. It was generally considered to be benign, acts as locally aggressive and may metastasize to lymph nodes and lungs. Seventy five to ninety percent of giant cell tumours are located at the epiphysis of long bones and in most series common sites were proximal tibia, distal femur and followed by distal radius. 1  The tumour extends mainly proximally and distally involving articular surface and metaphysis of the bone. As the bone expands the surrounding cortex was thinned. The radiolucency of a giant cell tumour is due to massive destruction of the cortical and cancellous bone without any calcification or periosteal reaction. Although giant cell tumours of bone were common in distal radius, proximal humerus and distal humerus but its occurrence in proximal ulna was rare. The tumour extends mainly proximally and distally involving articular surface and metaphysis of the bone. As the bone expands the surrounding cortex was thinned. The radiolucency of a giant cell tumour was due to massive destruction of the cortical and cancellous bone without any calcification or periosteal reaction.

**II. Case Report**

A 32 year old male presented with history of pain and swelling over his right elbow intermittently since 6 months. Patient noticed swelling after he had pain over elbow. Patient gave history of insidious onset of swelling over elbow 6 months back which subsided over past 2 months. Diffuse swelling without any engorged veins, scars, abscess or sinus was seen over postero-medial aspect of proximal ulna starting from inferior aspect of elbow. There was local tenderness over olecranon and proximal ulna without local raise of temperature. Three point bony relation of humeral epicondyles and olecranon was maintained and there was no abnormality in the carrying angle of elbow on affected side. He had no restriction of movements at the elbow joint. Icm muscle wasting was present over proximal forearm of affected side. The neurovascular examinations were normal. Axillary lymph nodes were not palpable. Radiographs of elbow showed lytic lesions in proximal ulna with periosteal reaction suggestive of GCT, Aneurysmal Bone cyst, unicameral bone cyst (Fig 1). ESR was raised (40mm) and total blood count, differential count, CRP was normal (to rule out infectious focus). MRI showed a hypointense signal in the T1W sequences and a hyperintense signal in the short T2W. A cortical bone rawplug was removed through a skin incision at the postero-medial side of the selling over proximal ulna.
Accessing the cystic cavity revealed a gelatinous ‘chocolate brown’ material, with many areas of darker colour. After thorough curettage, the cavity measured about 36 cc was packed with bone cement (Fig 2). We believed that exothermic property of bone cement would act as a local adjuvant to prevent recurrence apart from adding strength to the large curetted lesion.

We followed the case up to 2 months until patient improved elbow movements to functional extent (10-130 degrees) and radiological consolidation of graft at the edges of lesion was evident (Fig 4). However, follow-up to evaluate recurrence and malignant transformation is awaited. The interval between surgery and local recurrence reported, is an average of 19 months duration as reported in literature.
III. Discussion

Osteoclastoma was a rare benign tumour, but it may behave unexpectedly, regardless of the results of radiological or histological examinations. It was usually located in the long bone meta-epiphysis and it frequently involves the subchondral bone without involvement of the articular surface. Larger tumours may extend into the metaphysis and, more rarely, into the diaphysis. GCT must be distinguished from other benign lesions such as, non-ossifying fibroma, fibrous dysplasia, ABC (Aneurysmal Bone Cyst), Osteoblastoma. The aim of treatment was to remove the tumor completely and preserve the articulation. However, this was not always successful when giant cell tumors seemed to behave more aggressively and had a higher recurrence rate approximately 40%-9-10-11. A simple curettage provides an excellent functional outcome, but with a higher recurrence rate of 9 if compared with the patients who received adjuvant therapy (45% versus 18%). Therefore, various adjuvant therapies have been associated with the curettage: phenol, cryotherapy, cement or polymethyl methacrylate (PMMA) used intraoperatively. The recurrence rate ranges from 5% to 8% when cement was used, and approximately 2.3% after cryosurgery12,13,14.

In studied of Schajowicz showed that curettage alone was an inadequate oncological procedure that’s why when combined with an adjuvant therapy it provides a better result with respect to one-block excision, especially in terms of functionality. Therefore, the correct treatment achieved by a balance between oncological radicality and the restoration of skeletal segment functionality15,16,17,18. In the present case intralesional curettage was done with bone cement augmentation.

IV. Conclusion

Diagnosing osteolytic lesions at long bone epiphysis was difficult and requires a great deal of experience and often can be misinterpreted. It was important to know atypical cancer locations in order to perform a proper diagnosis. When considering clinical, radiological and histological findings, the diagnosis of a GCT can be readily made even in atypical locations and when treated early and radically recurrence can be avoided with good prognosis.

References

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