IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 4 Ver. XI (Apr. 2016), PP 79-82
www.iosrjournals.org

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[1]. 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[2]. The ulnar metaphysis is an unusual site (0.45% to 3.2%) for a primary bone GCT[2]. 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

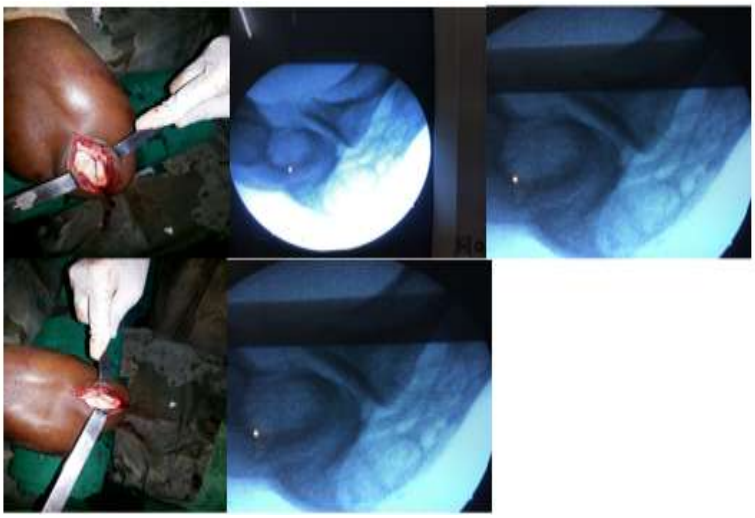
Giant cell tumour of bone was a locally invasive tumour wchich was close to the joint of a skeletally mature bone. It was generally considered to be benign, acts as locally aggressive and may metastasize to lymph nodes and lungs. Seventy five to ninety percent of giant cell tumours are located at the epiphysis of long bones and in most series common sites were proximal tibia, distal femur and fallowed by distal radius.1 sacrum, patella, vertebra, tarsal, metatarsal, metacarpal and skull bones considered 10 to 25%. 2 Incidence in Asian population was about 20- 26% , female predominance and the age at presentation was usually 20-50 years of age.3,4 In the largest series of cases of giant cell tumour of bone from India and China analyzed by Shankman *et al.* 42 (2.43%) out of 1728 giant cell tumour of bone were localized in distal end of the ulna and none in proximal ulna.5 Typically the tumour appears to be an expanded radiolucent lesion located in the epiphyseal end of the tubular bone. 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 radiolucencey 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 proxim 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 radiolucencey of a giant cell tumour was due to massive. Because of its aggressive nature and high chances of recurrence, enbloc resection was recommended for a GCT.

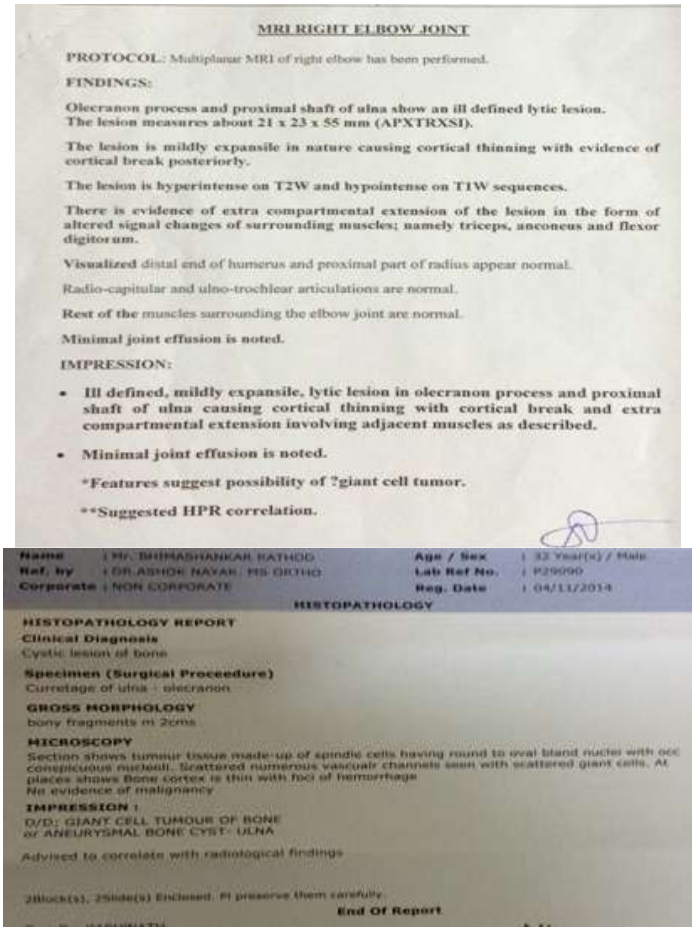
II. Case Report

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. 1cm 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[4].



MRI RIGHT ELBOW JOINT

PROTOCOL: Multiplanar MRI of right elbow has been performed.

FINDINGS:

Olecranon process and proximal shaft of ulna show an ill defined lytic lesion. The lesion measures about 21 x 23 x 55 mm (APXTRXSI).

The lesion is mildly expansile in nature causing cortical thinning with evidence of cortical break posteriorly.

The lesion is hyperintense on T2W and hypointense on T1W sequences.

There is evidence of extra compartmental extension of the lesion in the form of altered signal changes of surrounding muscles; namely triceps, anconeus and flexor digitorum.

Visualized distal end of humerus and proximal part of radius appear normal.

Radio-capitular and ulno-trochlear articulations are normal.

Rest of the muscles surrounding the elbow joint are normal.

Minimal joint effusion is noted.

IMPRESSION:

- Ill defined, mildly expansile, lytic lesion in olecranon process and proximal shaft of ulna causing cortical thinning with cortical break and extra compartmental extension involving adjacent muscles as described.
- Minimal joint effusion is noted.

*Features suggest possibility of ?giant cell tumor.

**Suggested HPR correlation.

Name : Mr. BHIMASHANKAR RATHOD Age / Sex : 32 Year(s) / Male
Ref. by : DR.ASHOK NAYAK, MS ORTHO Lab Ref No. : P29090
Corporate : NON CORPORATE Reg. Date : 04/11/2014

HISTOPATHOLOGY

HISTOPATHOLOGY REPORT
Clinical Diagnosis
Cystic lesion of bone
Specimen (Surgical Proceedure)
Curretage of ulna - olecranon
GROSS MORPHOLOGY
bony fragments in 2cms
HICROSCOPY
Section shows tumour tissue made-up of spindle cells having round to oval bland nuclei with occ conspicuous nucleoli. Scattered numerous vascualr channels seen with scattered giant cells. At places shows Bone cortex is thin with foci of hemorrhage
No evidence of malignancy
IMPRESSION :
D/D: GIANT CELL TUMOUR OF BONE
or ANEURYSMAL BONE CYST- ULNA
Advised to correlate with radiological findings
2Block(s), 2Slide(s) Enclosed. Pl preserve them carefully.
End Of Report

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[5, 6, 7]. GCT must be distinguished from other benign lesions such as, non-ossifying fibroma, fibrous dysplasia , ABC (Aneurysmal Bone cyst), Osteoblastoma[8]. The aim of treatment was to remove the tumor completely and preserve the articulation. However, this was not always feasible when giant cell tumors seem 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 cryosurgery[12,13,14].

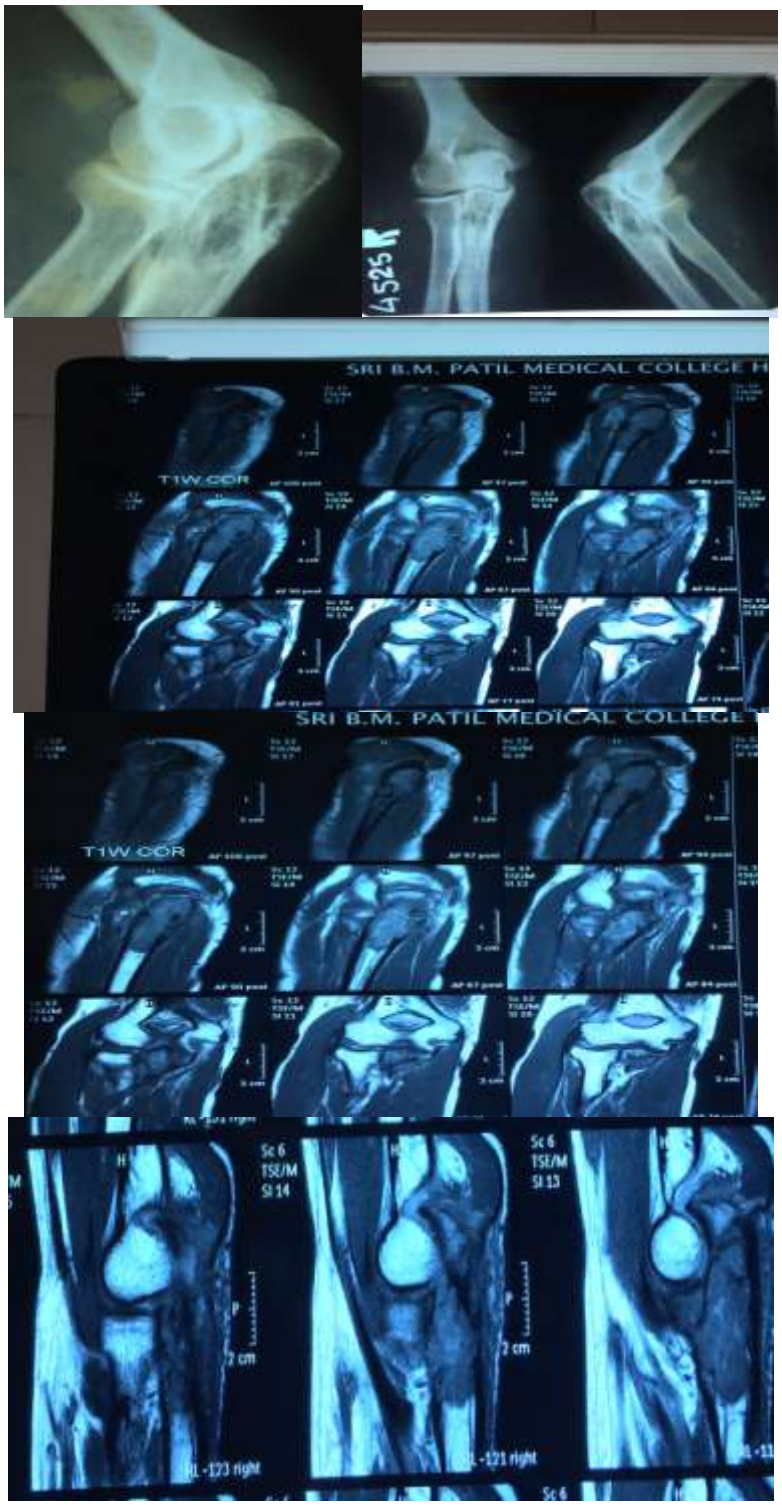
In studied of Schajowicz showed that curettage alone was an inadequate oncological procedure that's why when combined with an adjuvant therapy it provides a better result with respect to one-block excision, especially in terms of functionality. Therefore, the correct treatment achieved by a balance between oncological radicality and the restoration of skeletal segment functionality[15,16,17,18]. 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

[1]. ES Ng, A Saw, S Sengupta, AR Nazarina, Giant cell tumou of bone with late Presentation: review of treatment and outcome; Journal of Orthopaedic Surgery 2002: 10(2): 120–128.
[2]. Daniele Vanni, Andrea Pantalone, Elda Andreoli, PatrizioCaldora, VincenzoSalini, Giant cell tumor of the distal ulna: a case report, Journal of Medical Case Reports 2012, 6:143.
[3]. Lackman RD, McDonald DJ, Beckenbaugh RD, Sim FH. Fibula reconstruction for giant cell tumour of the distal radius. Clin Orthop 1987; 218:232-8.
[4]. Harness NG, Mankin HJ. Giant cell tumor of the distal forearm. J Hand Surg 2004;29A:188-93.
[5]. Campanacci M, Baldini N, Boriani S, Sudanese A. Giantcell tumour of bone. J Bone Joint Surg Am 1987; 69:106-14.
[6]. Beebe-Dimmer JL, Cetin K, Fryzek JP, Schuetze SM, Schwartz K: The epidemiology of malignant giant cell tumors of bone: an analysis of data from the Surveillance, Epidemiology and End Results Program (1975–2004).
[7]. Campanacci M, Baldini N, Boriani S, Sudanese A: Giantcell tumor of bone; J Bone Joint Surg Am 1987, 69:106-114.
[8]. Goldenberg RR, Campbell CJ, Bonfiglio M: Giant-cell tumor of bone. An analysis of two hundred and eighteen cases. J Bone Joint Surg Am 1970, 52:619-664.
[9]. Peh SC, Cheah PL, Sengupta S. The pathology of tumour and "tumour-like" lesions of bone in the University Hospital Kuala Lumpur. Malays J Pathol 1988;10:45–50.
[10]. Masui F, Ushigome S, Fujii K: Giant cell tumor of bone: a clinicopathologic study of prognostic factors, PatholInt 1998, 48:723-729.
[11]. Goldenberg RR, Campbell CJ, Bonfiglio M: Giant-cell tumor of bone. An analysis of two hundred and eighteen cases. J Bone Joint Surg Am 1970, 52:619-664.
[12]. Sung HW, Kuo DP, Shu WP, Chai YB, Liu CC, Li SM: Giant-cell tumor of bone: analysis of two hundred and eight cases in Chinese patients. J Bone Joint Surg Am 1982, 64:755-761
[13]. Malawer MM, Bickels J, Meller I, Buch RG, Henshaw RM, Kollender Y: Cryosurgery in the treatment of giant cell tumor. A long-term followup study. ClinOrthopRelat Res 1999, 359:176-188.
[14]. Malawer MM, Marks MR, McChesney D, Piasio M, Gunther SF, Schmookler BM: The effect of cryosurgery and polymethyl methacrylate in dogs with experimental bone defects comparable to tumor defects; ClinOrthopRelat Res 1988, 226:299-310.
[15]. Marcove RC, Weis LD, Vaghaiwalla MR, Pearson R, Huvos AG: Cryosurgery in the treatment of giant cell tumors of bone. A report of 52 consecutive cases. Cancer 1978, 41:957-969
[16]. Schajowicz F: Tumors and Tumor-like Lesions of Bone: Pathology, Radiology and Treatment. Springer-Verlag ; 1994.
[17]. Gracia I, Proubasta IR, Trullols L, Peiró A, Moya E, Cortés S, Buezo O, Majó J: Distal radioulnar joint prosthesis for the treatment of giant cell tumor of the distal ulna: a case report and literature review; Strategies Trauma Limb Reconstr 2011, 6:103-106.
[18]. Singh M, Sharma S, Peshin C, Wani IH, Tikoo A, Gupta SK, Singh D: Wide resection and stabilization of ulnar stump by extensor carpi ulnaris for giant cell tumor of distal ulna: two case reports.Cases J 2009, 2:8617.
[19]. Burke CS, Gupta A, Buecker P: Distal ulna giant cell tumor resection with reconstruction using distal ulna prosthesis and brachioradialis wrap soft tissue stabilization; Hand (N Y) 2009, 4:410-414.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