ORIGINAL RESEARCH PAPER

Volume-8 | Issue-7 | July - 2019 | PRINT ISSN No. 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

GIANT CELL TUMOR VARIANT(CHONDROMYXOID FIBROMA) OF PROXIMAL END OF TIBIA

Orthopaedics

Dr.Hari Prasath P Post Graduate, Department of Orthopedics, Sree Balaji Medical College, Chennai-44

Dr. Pugazhendhi G* Associate Professor, Department of orthopedics, Sree Balaji Medical College, Chennai *Corresponding Author

ABSTRACT

Introduction: Giant cell tumor of bones is an uncommon neoplasm that accounts for 5% of all primary tumors of bone, and it represents about 9% of malignant primary bone tumors with grades from borderline to high grade

Case Report: A 34-year-old patient came with complains of mild pain in right knee since 6 months when she came for generalized body checkup. On examination,no swelling was present over the proximal and anterior part of proximal leg and movements of knee joint were normal. All routine blood investigations were done and found to be normal. X-ray and CT knee showed morphology of defined lytic lesions with lobulated margins, very thin sclerotic rim,multiple internal septations,, ground glass density, internal calcifications seen in the epi-metaphyseal region of the right proximal tibia. The lesion is located eccentrically below and lateral tibia intercondylar region and right lateral tibial condyle. Mild endosteal scalloping of the lateral border with no cortical breach and periosteal reaction at the right proximal tibia suggestive of giant cell tumor. Histopathology of the tissue shows multinucleated giant cells with uniform vesicular nucleus and mononuclear cells which are spindle shaped with uniform vesicular nucleus suggestive of chondromyxoid fibroma a varient of GCT. The patient was treated by excision, curettage, bone cement and bone graft to fill the defect. Conclusion. The patient at 2-month followup is doing well and walking without any pain comfortably and with full range of motion at knee joint with articular congruity of knee maintained and no signs of recurrences.

KEYWORDS

1. INTRODUCTION

Giant cell tumor of bones is an unusual neoplasm that accounts for 5% of all primary tumors of bone, and it represent about (9%) of malignant primary bone tumors with its different grades from borderline to high grade.Usually, the age of patients ranges from 21 to 54 years, and the peak age incidence is in the third decade of life, with female predominance (1.2 : 1) [1]. It is a locally aggressive tumor which involves the ends of long bones in skeletally mature individuals. The common clinical symptoms are pain related to affected bone, swelling, and decreased range of movement in adjacent joint [2]. The diagnosis of giant cell tumor of bones depends mainly on clinical and radiological examination (plain X-ray and CT scan) on the site of the lesion [2]. The treatment of GCT is directed towards local control without sacrificing joint function. This can be achieved by intralesional curettage with autograft reconstruction by packing the cavity of the excised tumor with iliac corticocancellous bone or using bone cement as packaging material for the defect [3].

2. CASE REPORT

A 33 yr old Female patient presented with complaints of dull pain and on the knee and proximal aspect of the right leg. The patient had come for routine general body checkup when she was advised to take a knee xray. The pain was exaggerated on walking. There was no history of fever, night cries, loss of weight, and loss of appetite present.

On examination, no swelling was present,smooth surface, and bony deep. The skin over the area was normal. Tenderness was present over proximal tibia. Knee movements were normal.

X-ray showed irregular cyctic/lytic lesion seen in the proximal end of tibia suggestive of giant cell tumor. CT (Figure 1) knee shows morphology of of well defined lytic lesions with lobulated margins, very thin sclerotic rim, internal septations, ground glass density, internal calcifications seen in the epi-metaphyseal region of the right proximal tibia. The lesion is located eccentrically in the tibia intercondylar region and right lateral tibial condyle. Mild endosteal scalloping of the lateral border. No definite cortical breach. No periosteal reaction at the right proximal tibia suggestive of giant cell tumor

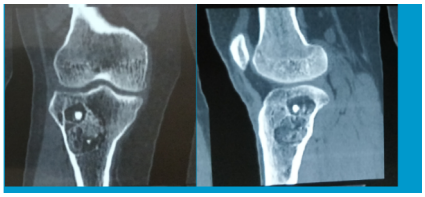

Figure 1: Preop X-ray and CT scan showing osteolytic lesion of proximal tibia.

The condition and routine investigations done in preparation for operative procedure were explained to the patient. Patient was treated with intralesional excision and curettage and the cavity was filled with bone graft and bone cement. Specimen was sent for histopathological (Figure 2) examination which confirmed giant cell tumor varient. sequential X-rays (Figure 3) were taken to confirm the union. The patient was started on regular physical therapy and was allowed partial weight bearing when the patient was comfortable.

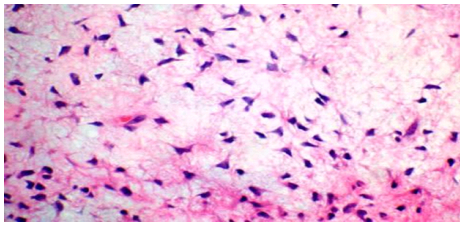

Figure 2: Histopathology of the tumor confirming a variant of GCT chondromyxoid fibroma

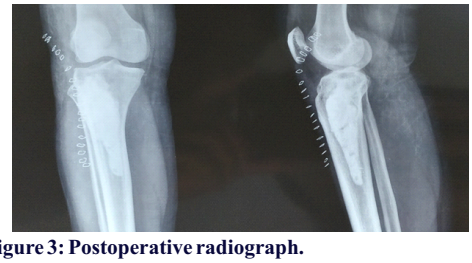

Figure 3: Postoperative radiograph.

3. DISCUSSION

Chondromyxoid fibroma (CMF) is a benign, locally aggressive tumor of cartilaginous origin and accounts for less than 0.5% of all bone tumors [1]. In 1948, the tumor was first described by Jaffe and Lichtenstein as a lesion derived from cartilage-forming tissue and composed of various proportions of chondroid, fibrous, and myxoid tissues [3]. The common site of the tumor is the metaphysis adjacent to the epiphyseal growth plate, which reinforces the hypothesis that the tumor arises from the remnants of cartilage at these sites [4]. For establishing the diagnosis, a thorough clinical, radiological, and pathological examination is important as it might easily be misdiagnosed as other malignant tumors such as chondrosarcoma because of some pathological similarities [3].

Patients typically complain of pain and swelling at the site of the lesion [1]. The pain is usually mild, intermittent, and a dull ache as seen in our case. If the tumor is located on rare sites like hands or feet, then painless swelling may be the presenting complaint. On some occasions, the tumor may be asymptomatic and may present as an incidental finding on radiographic examination [5]

Diagnosis of CMF basically depends on its characteristic histological appearance. The typical histological features of CMF are a lobular pattern with stellate-shaped cells in a myxoid or chondroid background with hypocellular centres and hypercellular peripheries. Osteoclast-like giant cells are often present at the lobular peripheries [8]. Dahlin stressed that giant cells at the periphery of the chondroid lobules with plump hyperchromatic nuclei with nuclear atypism are characteristic of CMF [9]. Similar features were seen in our case. The differential diagnosis of CMF includes chondroblastoma, chondrosarcoma, enchondroma, and aneurysmal bone cyst, but it is the salient histological features that distinguish these lesions [8].

The treatment options of CMF include simple curettage, curettage with phenol application, and en bloc resection with bone grafting [8]. The tendency to local recurrence after initial curettage seems to be even higher in young children, i.e. 80% [8]. But curettage with phenol application followed by bone grafting has a very low rate of recurrence of seven percent [7]. Further reduction in recurrence rate was observed when the lesion was treated with en bloc excision and bone grafting [6]. Scaglietti, et al. drew attention to the locally aggressive behavior of this tumor in the young and suggested a more radical form of local resection in its management [7]. So, our patient was treated by en bloc excision with tricortical bone grafting, which got incorporated very well, and the lesion has shown no signs of recurrence.

4.CONCLUSION

We treated the patient with curettage , bone graft with use of bone cement to pack the cavity which showed good postoperative results without recurrences or complications and functional problems.so We are concluding that it is a good treatment option for Chondromyxoid fibroma of proximal tibia.

REFERENCES

1. Robert K, Heck Jr. Campbell's Operative Orthopaedics. Vol. 1. Philadelphia: Mosby Elsevier; 2013. Benign/aggressive tumors of bone; p. 894.
2. Non specific magnetic resonance features of chondromyxoid fibroma of the iliac bone. Yalniz E, Alicioglu B, Yalcin O, Yilmaz B. http://www.ncbi.nlm.nih.gov/pubmed/17918298. J Buon. 2007;12:407–409. [PubMed]
3. Chondromyxoid fibroma of bone; a distinctive benign tumor likely to be mistaken especially for chondrosarcoma. Jaffe HL, Lichtenstein L. http://www.ncbi.nlm.nih.gov/pubmed/18891025Arch Pathol (Chic) 1948;45:541–551. [PubMed]
4. Chondromyxoid fibroma: a clinicopathologic study of 76 cases. Rahimi A, Beabout JW, Ivins JC, et al. http://www.ncbi.nlm.nih.gov/pubmed/5075357. Cancer. 1972;30:726–736. [PubMed]
5. H. W. Sung, D. P. Kuo, W. P. Shu, Y. B. Chai, C. C. Liu, and S. M. Li, "Giant-cell tumor of bone: analysis of two hundred and eight cases in Chinese patients," Journal of Bone and Joint Surgery A, vol. 64, no. 5, pp. 755–761, 1982. View at Google Scholar • View at Scopus
6. H. R. Dürr, M. Maier, V. Jansson, A. Baur, and H. J. Refior, "Phenol as an adjuvant for local control in the treatment of giant cell tumour of the bone," European Journal of Surgical Oncology, vol. 25, no. 6, pp. 610–618, 1999. View at Publisher • View at Google Scholar • View at Scopus
7. N. C. Nicholson, W. K. Ramp, J. S. Kneisl, and K. K. Kaysinger, "Hydrogen peroxide inhibits giant cell tumor and osteoblast metabolism in vitro," Clinical Orthopaedics and Related Research, no. 347, pp. 250–260, 1998. View at Google Scholar • View at Scopus
8. K. Trieb, P. Bitzan, S. Lang, M. Dominkus, and R. Kotz, "Recurrence of curetted and bone-grafted giant-cell tumours with and without adjuvant phenol therapy," European Journal of Surgical Oncology, vol. 27, no. 2, pp. 200–202, 2001. View at Publisher • View at Google Scholar • View at Scopus
9. S. A. Bini, K. Gill, and J. O. Johnston, "Giant cell tumor of bone. Curettage and cement reconstruction," Clinical Orthopaedics and Related Research, no. 321, pp. 245–250, 1995. View at Google Scholar • View at Scopus
10. D. A. Nelson, M. E. Barker, and B. H. Hamlin, "Thermal effects of acrylic cementation at bone tumour sites," International Journal of Hyperthermia, vol. 13, no. 3, pp. 287–306, 1997. View at Google Scholar • View at Scopus
11. C. L. Gaston, R. Bhumbra, M. Watanuki et al., "Does the addition of cement improve the rate of local recurrence after curettage of giant cell tumours in bone?" Journal of Bone and Joint Surgery B, vol. 93, no. 12, pp. 1665–1669, 2011. View at Publisher • View at Google Scholar • View at Scopus