Current Medicine Research and Practice 9 (2019) 243–245

Contents lists available at ScienceDirect

Current Medicine Research and Practice

journal homepage: www.elsevier.com/locate/cmrp

Case report

Unusual site of chondromyxoid fibroma

Prateek Kr Gupta [a, *], Brajesh Nandan [b], Ashis Acharya [a], Amish Bhandari [a], Kiran Roy [c]

[a] Department of Sports Medicine; Sir Ganga Ram Hospital, New Delhi, India
[b] Department of Orthopaedics Oncology; Sir Ganga Ram Hospital, New Delhi, India
[c] Department of Orthopaedics; Sir Ganga Ram Hospital, New Delhi, India

ARTICLE INFO

Article history:
Received 19 July 2019
Accepted 4 November 2019
Available online 7 November 2019

Keywords:
Chondromyxoid fibroma
Unusual site
Humerus
Proximal

ABSTRACT

We present a rare occurrence of chondromyxoid fibroma (CMF) in the proximal 3rd humerus. A 28-year-old male with proximal humeral pain had a lesion in the proximal 3rd humerus on X-ray. As it appeared as a benign lesion and was small in size (radiologically looked similar to an intraosseous ganglion), we decided to perform excisional biopsy. The histopathological examination revealed that it was CMF.

1. Introduction

Chondromyxoid fibroma (CMF) is a rare benign neoplasm of cartilaginous origin. It usually occurs in the metaphyseal region of the long tubular bones, particularly in the upper tibia, at a variable distance from the growth cartilage and often in close contact with it. The juxtacortical and intracortical areas are unusual locations for this tumor, with only a few sporadic cases reported in the English language medical literature. We report here a rare case of CMF in the proximal humerus in a 28-year-old male.

2. Report

A 28-year-old male presented to our outpatient department with chief complaints of pain in the left shoulder for the past 1 year with aggravation in pain from the last 5 months.

Pain was gradual in onset, progressive in nature, and nonradiating.

On examination, there was tenderness present over the posterior aspect proximal 3rd left arm and no bony swelling palpable; the range of movements of the shoulder was normal. There was no distal neurovascular deficit.

X-ray of the left shoulder [Fig. 1 (a)] showed intracortical lytic lesion at the metadiaphyseal junction of the left proximal humerus suggesting infection/benign lesion.

Blood investigations were conducted. Hemoglobin, total leucocyte count (TLC), differential leucocyte count (DLC), erythocyte sedimentation rate (ESR), and C - reactive protein (CRP) were all within normal limits.

The magnetic resonance imaging left arm [Fig. 2 (a, b)] was carried out which showed a well-lobulated expansile lesion measuring 19 × 17 × 14 mm in the posteriomedial cortex at the metadiaphyseal junction of the humerus, showing isointense signal on T1 and hyperintense signal short T1 inversion recovery (STIR) images causing focal destruction of the adjoining cortex. It shows thick hypointense margins abutting the adjoining infraspinatus muscle suggesting of doubtful diagnosis nonossifying fibroma.

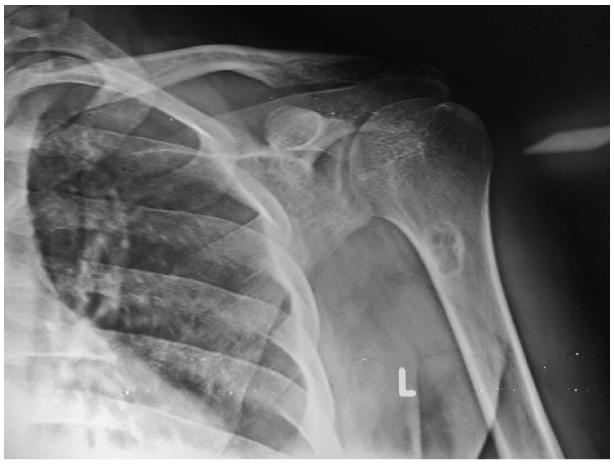
Surgical excision of the lesion was planned for the patient.

We used posterior approach. Lytic lesion was identified, demarcated as elevated uneven cortex. The expanded cortex was excised, and it was found that the small contained cavity was filled with jelly-like colorless material and was removed along with bone piece and was sent for histopathological examination (HPE). The bone bed was curated, debrided with the bur, and cauterized. Wound was washed and closed in layers.

The HPE [Fig. 3 (a, b)] report showed a moderately cellular tumor within the chondromyxoid stroma, with chondroid cells showing moderate nuclear pleomorphism suggestive of benign chondromyxoid tumor. Immuno histo chemistry S 100 protein (IHC-S-100) was positive.

* Corresponding author. Sir Ganga Ram Hospital, Sarhadi Gandhi Marg, Old Rajinder Nagar, Rajinder Nagar, Delhi 110060, India.
E-mail address: Sportsmedicinedelhi@yahoo.com (P.K. Gupta).

https://doi.org/10.1016/j.cmrp.2019.11.002



(a)

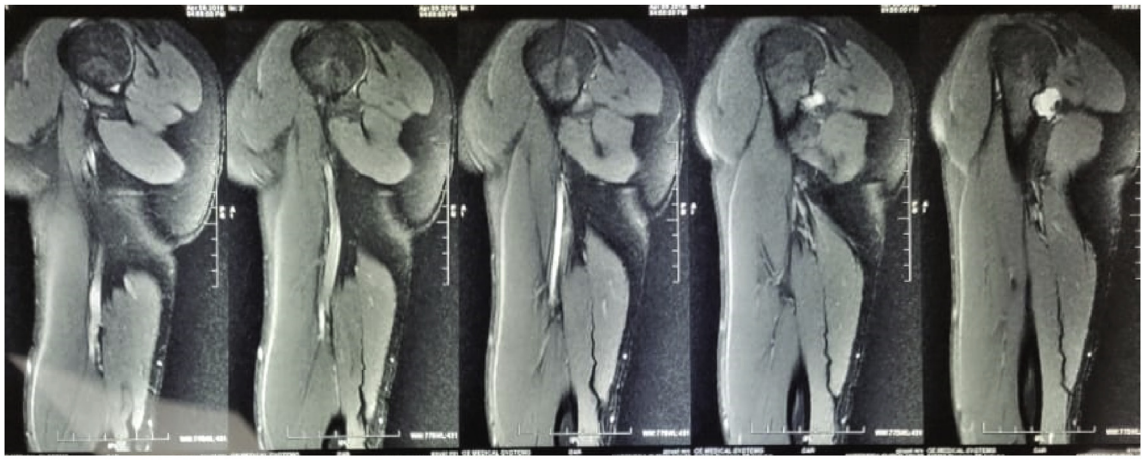
Fig. 1. X-ray image of left shoulder showing intracortical lytic lesion at the metadiaphyseal junction of the left proximal humerus.

3. Discussion

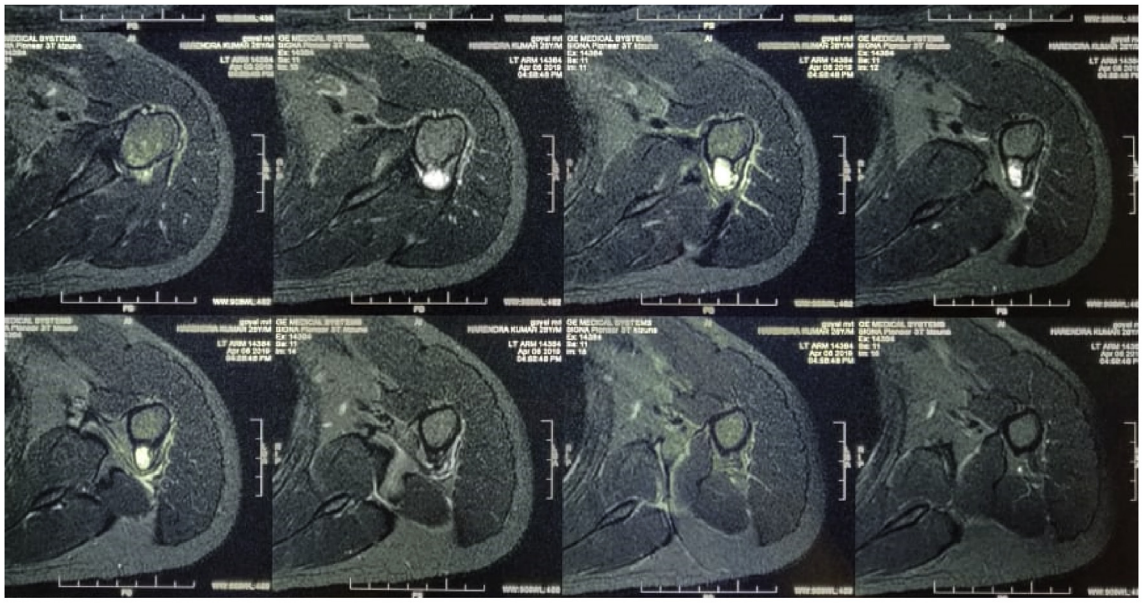
CMF is a rare lesion of cartilaginous origin, representing less than 0.5% of all bone tumors according to Mayo clinic series.

CMF is most commonly seen in the lower extremity, particularly the proximal end of tibia. Ninety-five percent of cases of CMF are seen in long bones involving the metaphyseal region. Less common sites are the sacrum, thoracic or lumbar spine, and craniofacial bones.[1] In a study of 278 cases of CMF by Wu et al.,[2] 46.9% of cases involved long bones, 30.3% flat bones, 17.3% involved bones of hand and feet, and 15% skull and facial bones. Of 46.9% of long bone lesions, 55.4% involved tibia, 19.2% femur, 10.8% fibula, and 3.1% radius.[2]

The clinical presentation varies in accordance with the area involved and is associated with long-standing history of nonspecific symptoms such as pain and edema. Usually, CMF is a slow-growing tumor and detected incidentally on routine radiography. There is a long history of chronic local pain (85%) and swelling and

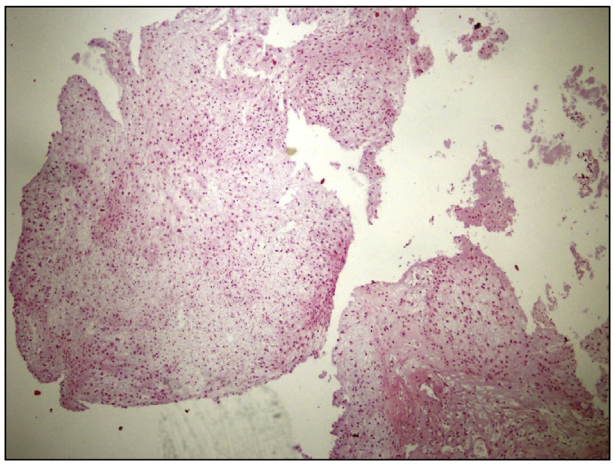


(a)

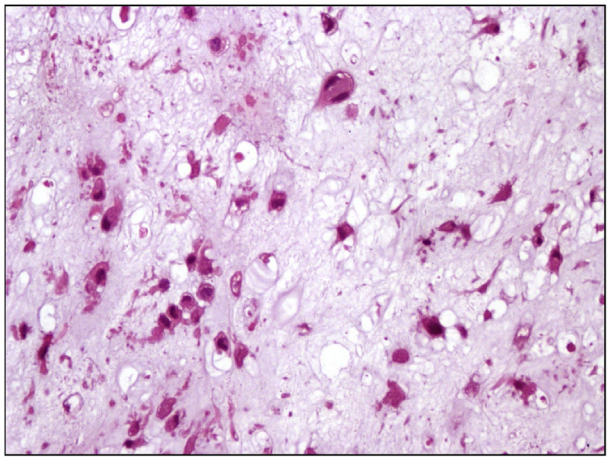


(b)

Fig. 2. (a) and (b) MRI of left shoulder which shows a well-lobulated expansile lesion measuring 19 × 17× 14 mm in the posteriomedial cortex at the metadiaphyseal junction of the humerus, showing isointense signal on T1 and hyperintense signal short T1 inversion recovery.



(a)



(b)

Fig. 3. Histopathological examination. (a) Moderately cellular tumor (H&E staining, 4×) (b) Tumor cells are of chondroid type with moderate nuclear pleomorphism. Occasional cell shows binucleation (H&E staining, 40×). H&E, hematoxylin and eosin.

edema (65%) with palpable soft-tissue mass and restricted movements in symptomatic patients.[3,4]

Our case is rare because of its origin in the metadiaphyseal region of the proximal third humerus.

In the largest published series of CMF, which reviewed 278 cases, 5.4% occurred in the humerus and 5.8% involved the diaphysis. Location as found in our case is extremely rare because CMF is usually an eccentric lesion in the medulla. Only 15 cases of juxtacortical or intracortical CMF have been reported in the English language medical literature. Furthermore, only three of 15 were purely intracortical CMF; two cases were in the proximal tibial metaphysis and another in the diaphysis of the humerus, which is illustrated by Greenfield in his textbook. An oval intracortical CMF that had not penetrated the medullary canal was seen on the radiograph of the humerus. Intracortical CMF is rare. On imaging, it is found to have features of a benign lesion, and in the absence of calcification, its cartilaginous nature is difficult to predict. Its histologic features are similar to those of CMF in more conventional locations.

4. Conclusion

CMF is a rare benign aggressive cartilaginous tumor usually involving the metaphysis of long bones. Radiological findings often mislead clinicians. As recurrence rate of CMF is high, correct diagnosis and extended curettage of the suspected lesion should be done during excisional biopsy to avoid recurrence.

Declaration of competing interest

There is no conflict of interest.

References

1. Bush JB, Sweeney JP, Robison JE, DeMoss B, Meyer MS. Chondromyxoid fibroma of the radial shaft treated with nonvascularized fibular autograft. *Am J Orthoped*. 2010;39:30–34.
2. Wu CT, Inwards CY, O'Laughlin S, Rock MG, Beabout JW, Unni KK. Chondromyxoid fibroma of bone: a clinicopathologic review of 278 cases. *Hum Pathol*. 1998;29:438–446.
3. Castle JT, Kernig ML. Chondromyxoid fibroma of the ethmoid sinus. *Head and Neck Pathol*. 2011;5:261–264.
4. Fomete B, Adeosun OO, Awelimboor DI, Olayemi L. Chondromyxoid fibroma of the mandible: case report and review of literature. *Ann Maxillofac Surg*. 2014;4:78–80.