Chondromyxoid fibroma of the clavicle extending to the adjacent joint: a case report

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ABSTRACT

Chondromyxoid fibroma is a rare benign bone tumour usually involving bones of the lower extremity in young adults. We present a case of chondromyxoid fibroma of the left clavicle extending to the adjacent joint in an 84-year-old man. The tumour had breached the hyaline cartilage of acromioclavicular joint. The tumour was excised en bloc, and the humeral head was curetted and grafted with autogenous cancellous bone. Postoperatively, the patient had an uneventful recovery and regained excellent function of the left shoulder without any pain or stiffness. At the 18-month follow-up, there was no sign of recurrence.

Key words: clavicle; fibroma

INTRODUCTION

Chondromyxoid fibroma (CMF) is a benign tumour characterised by lobulated areas of spindle-shaped or stellate cells with abundant myxoid or chondroid intercellular material, separated by zones of more cellular tissue rich in spindle-shaped or rounded cells with a varying number of multinucleated giant cells of different sizes. It accounts for about 1% of all primary bone tumours; most occur in the 2nd or 3rd decade of life and in males, with a second peak in the 5th to 7th decades. The proximal tibia is the most common site, followed by the distal femur, pelvis, and foot; the upper limb is rarely involved. Only 2 cases occurred in patients aged >80 years, and only 6 cases occurred in the clavicle (Table). Despite occasional locally aggressive behaviour, this tumour never involves the joint, except in a 29-year-old woman in whom a CMF of the 4th metacarpal extended to the metacarpophalangeal joint. We report an 84-year-old man with a CMF at the lateral end of his left clavicle that extended to the adjacent acromioclavicular joint.

CASE REPORT

In April 2010, an 84-year-old man presented with a
4-year history of left shoulder pain. He had undergone multiple treatments but without any lasting relief, with diagnoses ranging from rotator cuff disease to adhesive capsulitis to cervical spondylitis. Previous radiographs showed no abnormality, but those taken in our department showed an eccentrically placed osteolytic lesion in the lateral end of the left clavicle (Fig. 1). Magnetic resonance imaging revealed a 4.3x3.7x3 cm cystic solid lesion in the lateral end of the clavicle and acromion process that showed cortical erosions and scalloping extending to the articular end of bones of the left acromioclavicular joint (Fig. 2). The mass extended to the supraspinatus tendon and deep fibres of the subscapularis muscle. Focal cortical depression and scalloping were present along the anterior cortex of the humeral head.

Because a malignant bone tumour was suspected, an open biopsy was performed, and histopathology confirmed a benign cartilaginous lesion, possibly a CMF. In view of the lesion’s size, extent of involvement of the shoulder and its functions, en bloc excision was planned. Intra-operatively, the lateral end of clavicle was found to be enlarged. The tumour had breached the hyaline cartilage of acromioclavicular joint, which is uncharacteristic of CMF. The tumour was excised en bloc. The hyaline cartilage of acromioclavicular joint was not involved.

Table

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<th>Study</th>
<th>Site</th>
<th>Sex/age (years)</th>
<th>Joint involvement</th>
<th>Treatment</th>
<th>Recurrence</th>
<th>Follow-up (months)</th>
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<td>Present report</td>
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Figure 1  Radiograph showing eccentrically placed osteolytic lesion in the lateral end of left clavicle.

Figure 2  Magnetic resonance imaging showing a cystic solid lesion in the lateral end of the clavicle and acromion process, with cortical erosions and scalloping extending to the articular end of bones at left acromioclavicular joint.

Figure 3  Radiograph after en bloc excision of the tumour.
and the humeral head was curetted and grafted with autogenous cancellous bone (Fig. 3). The patient had an uneventful recovery and regained excellent function of the left shoulder without pain or stiffness (Fig. 4). At the 18-month follow-up, there was no sign of recurrence (Fig. 5).

**DISCUSSION**

More than 700 cases of CMF have been reported. The presence of cellular atypia and high proliferation index has sometimes led to misdiagnosis of chondrosarcoma or chondroblastoma. CMF may show locally aggressive behaviour and local or soft-tissue recurrences but is still considered benign with absence of metastasis. The main presenting symptom is pain that might have been present for years before the correct diagnosis is made, because of its slow growth and benign nature. Depending on its site, it can present with mechanical compression and lead to an erroneous diagnosis owing to its small size and chronicity.

CMF appears isointense to muscle on T1-weighted images and heterogeneously or homogeneously hyperintense on T2-weighted images, but the findings are generally non-specific for any type of bone tumour. The diagnosis is almost always made from the tumour's histopathology. Obtaining an adequate sample is necessary, as absence of myxoid/fibrous tissue can lead to misdiagnosis of low-grade chondrosarcoma and thus more aggressive therapy. Open biopsy should be performed whenever there is a doubt about the histology or clinical symptoms after needle biopsy.

CMF can be treated with curettage alone or together with bone grafting or polymethylmethacrylate. The recurrence rate of such treatment is around 25%, although bone grafting or bone cement can reduce it. The risk of recurrence after en bloc excision of the tumor is negligible, and marginal excision remains the treatment of choice whenever it can be accomplished without undue morbidity. There is no consensus on the need of reconstructive procedures after clavicle excision. Some studies have reported favourable functional results after clavicular excision and have advised against any reconstructive procedure. Others have suggested extensive procedures using free fibula or rib to construct a structural graft. In our patient, the primary goal of the treatment was to control the disease, and any reconstructive procedure could have been performed later, if deemed necessary. In view of the excellent functional result at the latest follow-up and radiographs demonstrating features of glenohumeral osteoarthritis, further benefit from an extensive reconstructive procedure may be precluded.

*Figure 4* Excellent functional outcome of the shoulder.

*Figure 5* Radiograph at the 18-month follow-up
REFERENCES