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Chondromyxoid fibroma of the lateral malleolus: a case report

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ABSTRACT

Chondromyxoid fibromas account for <1% of primary bone neoplasms. We report one such case occurring in the distal fibula of a 27-year-old woman. The patient underwent curettage, followed by phenolisation, insertion of a Steinmann pin, and cementation. This treatment reduced morbidity, restored stability, and enabled rapid functional recovery. There was no recurrence after 2 years.

Key words: *ankle joint; fibroma; phenol*

INTRODUCTION

Chondromyxoid fibroma is a rare benign bone tumour accounting for <1% of primary bone neoplasms.[1] It mainly occurs in males aged 10 to 30 years.[2] The most common site is around the knee (metaphysis of the tibia or femur) [40%], followed by the foot (17%).[3] Other frequent sites are the pelvis, spine, and sternum.[4] It manifests as a local swelling, persistent pain, and eventually results in pathological fractures. Initially it manifests as a purely osteolytic lesion with a general oval and eccentric form. This area shows sharp outlines and tends to extend to the cortical bone, which may also be scalloped, with no visible signs of periostal reaction.[5] Histopathologically, the tumour is characterised by slow growth and is generally made up of compact and elastic tissue with a whitish colour, with lobules containing chondroid, myxoid, and fibroid material.

CASE REPORT

In March 2007, a 27-year-old woman presented with a painful, hard swelling on the lateral side of the right ankle, which had started 3 years earlier. The pain persisted during the night and increased under physical stress. Ankle mobility was reduced.

Radiographs taken elsewhere showed an oval osteolytic lesion, limited by a peripheral sclerotic rim with a puffed aspect and an internal lobular structure (Fig. 1). Magnetic resonance imaging (Fig.

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2) and computed tomography (Fig. 3) revealed a solid mass with an oval form and multilobulated margins, measuring 30x27 mm in diameter and 57 mm in length (crown-rump distance). This mass showed lytic features and extended into the cortical bone, which appeared thinner and irregular, with signs of focal destruction.

Histology after a biopsy revealed tissues with vague lobular structure characterised by sparse cellularity, abundant intercellular myxoid and chondroid matrix, with no signs of calcification, rare mitosis, and benign osteoclast-like giant cells.

The patient underwent an intralesional excision and accurate curettage, followed by phenolisation (using a sterile 80% phenol-soaked gauze to tampon the cavity), insertion of a Steinmann pin into the fibula, and cementation. Histology of the excised tissues confirmed the diagnosis of chondromyxoid fibroma.

The patient was discharged 2 days later and followed up at months 1, 5, 12, 19, and 24. At the one-year follow-up, the overall functional score of the patient was 93%, according to the revised Musculoskeletal Tumor Society rating scale. At the 2-year follow-up, clinical and radiographic results were good, and there was no sign of recurrence (Fig. 4).

DISCUSSION

Treatment options for chondromyxoid fibroma are curettage alone, curettage with bone grafting and polymethacrylate filling, and *en bloc* excision. Chondromyxoid fibroma occurring in the lateral malleolus is rare. Two other such cases have been reported.[6,7] One patient underwent curettage, osseous cementation, and insertion of a short Kirschner wire. The other first underwent curettage alone (but the tumour recurred), and then *en bloc* resection of the distal portion of the fibula, followed by reconstruction

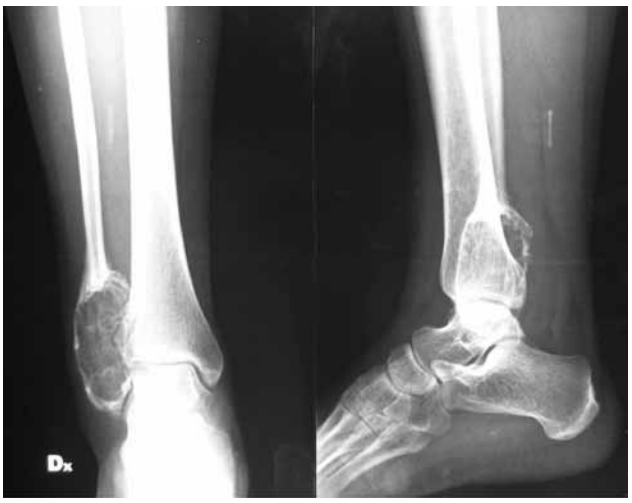

Figure 1 Radiographs showing a radiolucent, slightly lobulated lytic lesion in the lateral malleolus with a widened medullary cavity, coarse trabeculae, and cortical thinning.

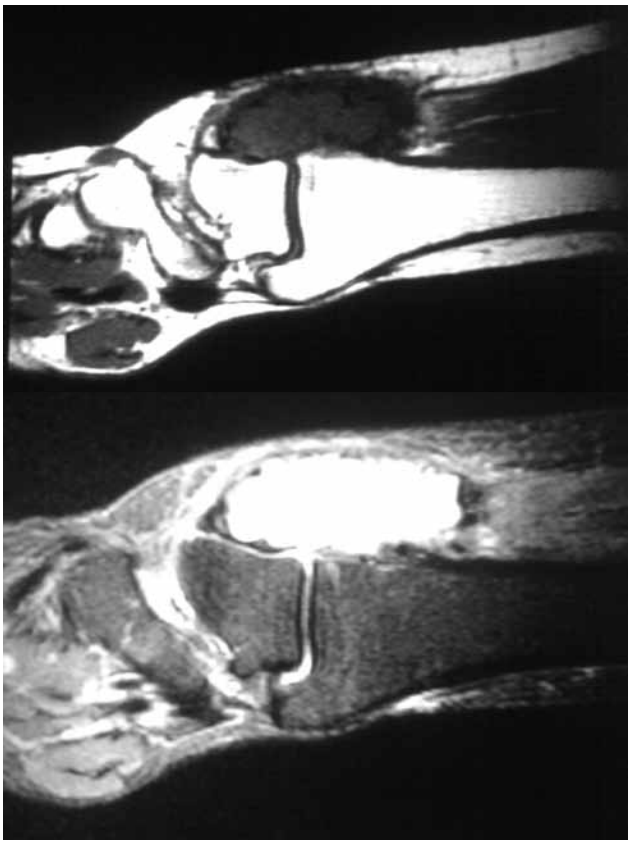

Figure 2 Magnetic resonance imaging showing widening of the lateral malleolus and metadiaphysis caused by the expanding lytic lesion, erosion of inner cortex, lobulated margin, bone marrow infiltration, and cortical and local swelling.

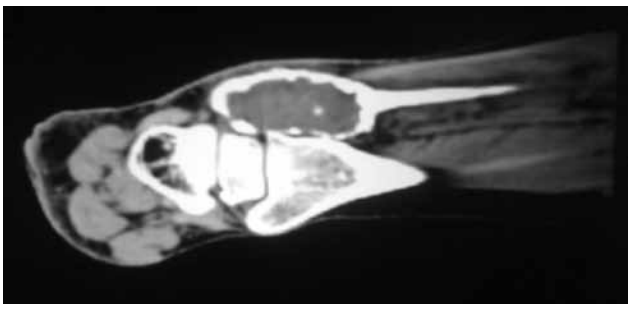

Figure 3 Computed tomography showing erosion of the inner cortex (endosteal scalloping), sclerotic margin, and expansion of the medullary cavity.

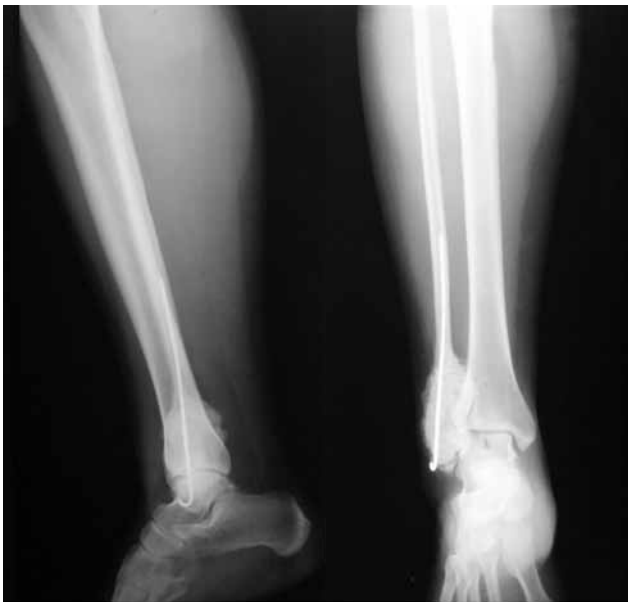

Figure 4 Radiographs at the 2-year follow-up after treatment with curettage, phenolisation, insertion of a Steinmann pin, and cementation.

with cryopreserved bone grafting and adequate osteosynthesis.

15 to 20% of chondromyxoid fibromas recur within 18 months.[8] *En bloc* excision has higher morbidity and should be reserved for larger lesions or lesions in anatomic sites that are not at risk of fracture or functional deficiency. Curettage with or without bone grafting confers a high recurrence rate of 25 to 30%.[9] Bone grafting is at higher risk of infections, recurrence, fractures, pseudoarthrosis, and articular limitation. 36% of the patients who underwent resection and reconstruction of the distal fibula for benign or malignant tumours incurred reduced ankle mobility.[6,10]

We therefore decided to perform curettage and phenolisation (using a 80% phenol-soaked gauze to tampon the cavity). Phenol has a necrotising effect extending 1-2 mm deep and may eradicate the possible remaining tumorous cells and reduce the risk of recurrence. The fibula was reconstructed with a Steinmann pin (with the end modified as the umbrella handle–shaped Rush type), and the cavity was filled with acrylic cement. The exothermic reaction after polymerisation of acrylic cement increases the necrotising action of phenol. The use of a Steinman pin and polymethacrylate produced good stability of the ankle joint and enabled rapid functional recovery. There was no recurrence after 2 years. Curettage with adjuvant is appropriate for treatment of locally aggressive benign neoplasms.[11]

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