

Non-Bacterial Chronic Recurrent Osteomyelitis of the Clavicle

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ABSTRACT

This report details the case of a 12-year-old girl with a painful, progressive swelling of the medial portion of the clavicle with no history of trauma or other constitutional symptoms. All laboratory investigations were normal except for an elevated erythrocyte sedimentation rate (ESR). Initial plain radiographs showed a destructive lesion with magnetic resonance imaging showing features of malignancy. Biopsies revealed osteomyelitis, but with negative bacterial cultures and no evidence of malignancy. Treatment with antibiotics did not result in a favourable response. Over time, the swelling increased in size with episodic exacerbations of pain. Follow-up radiographs showed sclerosis and hyperostosis. After five years, this was recognized as non-bacterial chronic recurrent osteomyelitis of the clavicle.

Key Words:

Nonbacterial, chronic recurrent, osteomyelitis, clavicle

INTRODUCTION

Spontaneous swelling of the clavicle that increases in size in a child is an uncommon occurrence. Differential diagnoses include infection, tumour and tumour-like conditions. There are times when laboratory investigation and examination results are in conflict and therapeutic measures do not stop the growth. Early recognition of this nonbacterial osteomyelitis will allay protracted uncertainty. We present the case of a 12-year-old female who was followed up for more than five years with this diagnosis.

CASE REPORT

A 12-year-old girl presented at the orthopaedic clinic in August 2006 with a one month history of spontaneous pain and swelling over the right sternoclavicular region. There was no history of fever or upper respiratory tract symptoms. On examination, there was diffuse tenderness and a hard swollen area. The skin over the swelling was normal and shoulder movement was not affected.

Plain radiographs showed a poorly defined, destructive lesion over the medial third of the right clavicle (Fig 1a). The erythrocyte sedimentation rate (ESR) was 93mm/hr. The total white and differential count was normal, as was the Mantoux test (0 mm). The chest radiograph was clear. With the possibility of a malignant tumour in mind, magnetic resonance imaging (MRI) was performed prior to a biopsy.

The MRI showed a heterogeneously enhancing enlargement of the medial one third of the right clavicle extending to the right sternoclavicular joint (Fig 1b). The radiologist reported the possibilities of an Ewing's or osteosarcoma. At biopsy, the outer cortex was hard and appeared normal. However, the deeper layers showed soft, abnormal, friable tissue. A specimen was sent for bacterial culture but did not yield any bacterial growth. Histopathological examination reported the specimen as being compatible with acute and chronic osteomyelitis after readings by a few pathologists.

Postoperatively, the patient completed a six-week course of fusidic acid and cloxacillin. Unfortunately, follow-up showed that the swelling was getting bigger. A second MRI confirmed an enlarging mass with features suggesting malignancy and a reduced likelihood of osteomyelitis. The ESR was decreased to 38mm/hr, but alkaline phosphatase levels were now elevated at 263U/L. A second biopsy was then performed with findings of only normal appearing bone. There was no more friable tissue as seen in the first open biopsy. The report was similar to the first with no malignancy seen. Features of osteomyelitis were still present, and a second course of fusidic acid and cloxacillin was completed. Seven months later, with the swelling still growing, a third biopsy was performed, with findings of grossly normal bone with no malignancy. Bacterial culture was persistently negative.

The swelling then became quiescent and at follow-up two years later, it was the same size and was asymptomatic. Radiographs at that time showed an enlarged, sclerosed clavicle (Fig 2a). Three years later the swelling became painful again. Plain radiographs showed a new lucency in