

Diaphyseal Osteomyelitis Masquerading as Osteoid Osteoma

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ABSTRACT

Primary subacute osteomyelitis is of diagnostic challenge. We report a case of subacute osteomyelitis of tibia in a 15 year old boy with radiological features of osteoid osteoma. Biopsy and culture are essential in reaching the final diagnosis and successful treatment.

Keywords: Subacute osteomyelitis, osteoid osteoma.

INTRODUCTION

Osteomyelitis is known as the great masquerader in bone diseases. It can mimic various benign and malignant lesions resulting in delay in diagnosis and treatment¹. Osteomyelitis is classified as acute, subacute and chronic based on duration of the symptoms. Subacute osteomyelitis lacks the obvious clinical features of acute and chronic osteomyelitis, making the diagnosis a challenge.

CASE REPORT

A 15 year old boy presented with pain over the right leg on prolonged standing for the past one month.



Fig. I Radiograph of right tibia showing diaphyseal cortical lesion with Periosteal reaction

Pain was localised to the inner aspect of the right leg in the middle portion. He had also developed a mild swelling over the site one week ago. He had no fever, trauma or



Fig. II MRI showing cortical lesion with central nidus

weight loss. On examination the swelling was minimally tender without any erythema or dilated veins. There was no inguinal lymphadenopathy. The laboratory investigations were normal. The radiograph (Fig. I) showed a diaphyseal sclerotic lesion with central lysis and periosteal reactions of right tibia. MRI findings of sclerotic diaphyseal lesion with central nidus was consistent with osteoid osteoma (Fig. II). We decided to perform curettage of the lesion and bone grafting. During surgery cortex was found to be softened and the cavity was entered with multiple burr holes. The soft tissues in the cavity was curetted and sent for histopathological examination and for culture. Autogenous cancellous bone grafting was done to obliterate the cavity. The biopsy was consistent with osteomyelitis and culture grew *Staphylococcus aureus*.

DISCUSSION

Subacute osteomyelitis has an indolent course. The duration is more than 2 weeks with minimal systemic signs and symptoms². Subacute osteomyelitis develops when there is an altered host-pathogen relationship as a result of increased host resistance and decreased bacterial virulence or use of antibiotics early in the course of the disease³. It can mimic various benign and malignant conditions of bone attributing to confusion and delay in diagnosis^{1,2,4}.

Laboratory investigations usually do not help in arriving at the diagnosis, apart from elevated ESR in about 50-60% of cases⁵. Blood cultures are negative and culture from the site can detect pathogen only in 60% of cases. Xrays and bone scans are generally positive and the radiological presentation may be suggestive of a benign or malignant neoplasm.

Gledhill¹ described four radiological types of subacute osteomyelitis. Roberts et al³ expanded and modified the classification based on anatomical location, morphology and the similarity of the lesions to various neoplasms into six forms including the spine infections. Type Ia lesion is a punched out localised radiolucency mimicking eosinophilic granuloma. Type Ib is a punched out lesion with sclerotic margin, resembles a Brodie's abscess. Type II lesion is metaphyseal radiolucencies with cortical

erosion resembling osteogenic sarcoma, they may cross the growth plate. Type III lesions have a localised diaphyseal cortical lesion with periosteal reaction, often mimicking osteoid osteoma. Type IV diaphyseal lesions with onion skin periosteal reaction often resemble Ewing sarcoma. Type V lesions occur in the epiphysis with central radiolucency with faint sclerotic margin like in a chondroblastoma or chondromyxoid fibroma. Type VI lesions are vertebral erosive or destructive process as in tuberculosis.

Our case is a Type III diaphyseal subacute osteomyelitis which radiologically resembled osteoid osteoma. The literature search for Subacute diaphyseal osteomyelitis in children showed that this type is less reported than the other types^{1,2,3,5,7,8}. Most reports mainly involve adults. A biopsy is mandatory to establish the diagnosis, and treatment should not be started without the histology and microbiology of the lesion. Staph aureus is the most common organism. The recommended treatment for subacute osteomyelitis with a lucent lesion or nidus has been curettage, biopsy and culture followed by immobi-

lisation and antibiotics. This case reminds us the old dictum "culture every tumour and biopsy every infection".

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