

Case Report



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Small Shoulders, Big Burden: Scapular Osteomyelitis in an Infant

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Abstract

Background: A mass in relation to the scapula is rare in infancy, causing a diagnostic dilemma. We report a case in an infant presenting with scapular osteomyelitis and highlight the management of this condition.

Case report: A 2-month-old male child presented with an atraumatic swelling in the right scapular region with decreased movements of the upper arm for 15 days with no response to antibiotics. A diffuse firm to hard swelling in the right scapular region, with increased temperature and tenderness restricting both passive and active movements at the shoulder joint was noted on examination. Though total counts and C-reactive protein were raised, the blood culture was sterile. Plain X-ray and MRI revealed osteomyelitis of the right scapula. Biopsy further confirmed the diagnosis. Good response was noted to treatment with antibiotics and physiotherapy.

Conclusion: A scapular mass without shoulder arthritis, longer duration of symptoms, negative cultures and the absence of sepsis are notable features in this case. Emphasis is on prompt diagnosis and treatment with antibiotics and appropriate physiotherapy to prevent long term complications.

Keywords: Infant, Scapula, Osteomyelitis, Antibiotics, Case report

Introduction

Scapular masses are rare in infancy and have varying causes ranging from benign to malignant. The established etiologies are congenital (bronchogenic cyst, lymphangioma), infections (osteomyelitis), traumatic (hematoma) and tumors (fibrosarcoma, acute myeloblastic leukemia) [1, 2, 3]. The history can be vague and often causes diagnostic dilemma.

Case report

A 2-month-old male child presented with history of spontaneous onset, erythematous swelling in right scapular region with decreased movements of the right upper arm noted by the mother over the previous 15 days. The swelling was diffuse and gradually progressing for which a short course of oral antibiotics (Amoxicillin-Clavulanic acid) was prescribed at a local clinic with no improvement. At presentation, the child weighed 3.3 kgs, was afebrile with stable vitals and well-felt peripheral pulses in all the limbs. There was a diffuse firm to hard swelling in the right scapular region, with increased temperature and tenderness restricting both passive and active movements at the shoulder joint (Fig. 1). No other swellings were noted in the extremities. The child was anaemic (Hb 6.8 gm/dl) with raised total white cell count (15000/cu.mm) and C-reactive protein (CRP – 10.52 mg/dl) but the blood culture showed no growth. In view of a spontaneously occurring, progressively growing scapular mass with no evidence of sepsis, a probable diagnosis of scapular tumour was considered.

Radiograph revealed diffuse scapular permeative erosion with osteopenia, with an ill-defined periscapular radio-density suggesting an aggressive periosteal reaction (Fig.

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Figure 1: Diffuse swelling in the right scapula (blue arrow)

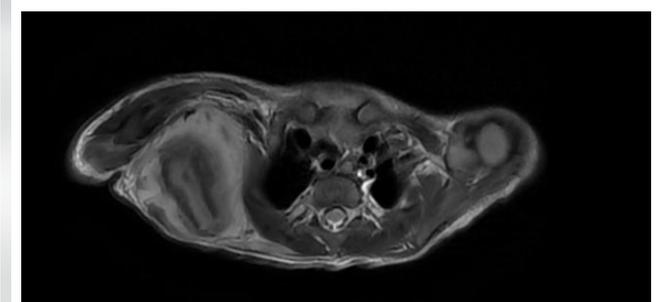


Figure 3: Osteomyelitis of right scapula with periscapular inflammation

2). An ultrasound scan showed a periscapular inflammatory phlegmon with erosion of the scapula.

Magnetic resonance imaging (MRI) with complementary computerised tomography (CT) revealed osteomyelitis of the right scapula, with associated myositis and periscapular phlegmon (Fig. 3). Following a multidisciplinary team discussion, an incisional biopsy was performed. The histopathology showed features of fibroblast proliferation with osteoid formation representing a reactive process. The Nitroblue tetrazolium (NBT) test was negative for chronic granulomatous disease. Tissue culture revealed no growth. He was treated with antibiotics for 6 weeks and physiotherapy.

Discussion

Nearly 50% of the pediatric osteomyelitis cases are reported in children less than 5 years old [4]. The metaphysis of long bones is commonly affected while membranous bone involvement is rare.

Scapular osteomyelitis is reported in 0.5-2.6% of all cases of osteomyelitis. It is commoner in boys, between 3 years and 11 years of age with presentation within 48 – 72 hours from the onset of symptoms. In infants, it can be mistaken for birth brachial plexus palsy. [5,6].

Only 3 cases have been reported in infants thus far with two of them at 2 months of age and one in a 6-month-old causing septic arthritis of the shoulder joint in addition [7, 8,9].

Septic arthritis of the adjacent shoulder joint is a sequela of scapular osteomyelitis and causes functional limitation [10]. A systematic review of acute and subacute osteomyelitis in children, noted that pain was present in 81% and functional limitation in about 50% of the patients [11].

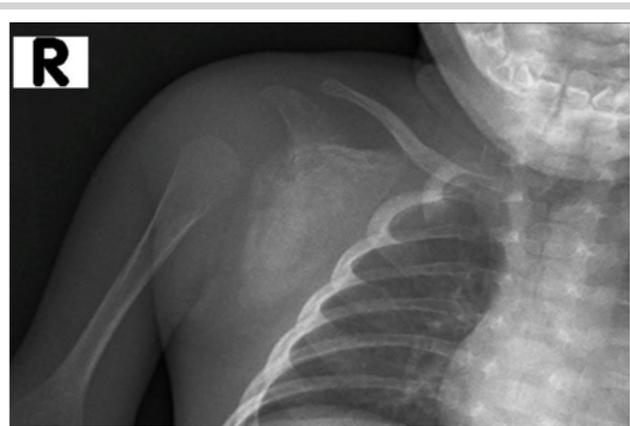


Figure 2: Plain X-ray - Right scapular sclerotic lesion

In this case, there was tenderness and functional limitation but the shoulder joint was spared. The diagnosis of osteomyelitis was substantiated by specific features on imaging and confirmed by tissue biopsy, ruling out malignancy.

Caffey disease or Infantile Cortical Hyperostosis of scapula can mimic osteomyelitis but has precise radiological findings [12]. Raised CRP, erythrocyte sedimentation rate and leukocytosis are sensitive indicators for acute hematogenous osteomyelitis [13]. In our case, all these parameters were raised. However, blood and tissue cultures showed no growth contrary to the previously reported cases, in whom hematogenous spread was well established, making it unique. The child received a 14-day course of intravenous amoxicillin-clavulunate followed by four-weeks of oral medication with good response. Early physiotherapy is reported to accelerate recovery and ranges from passive movements to active assisted to active movements [14].

At 3-months follow-up, there was residual mild diffuse swelling persisting in the region of the scapula but with significant improvement in the range of shoulder movements.

Conclusion

Acute scapular osteomyelitis in infants is rare. Predominant presentation as scapular mass without septic arthritis of shoulder, longer duration of symptoms and negative cultures differentiate our case from previous reports. Radiology often clinches the diagnosis except in an uncommon presentation where biopsy may have a role. Early detection and therapy are vital in preventing damage to the shoulder joint. Antibiotics and physiotherapy remain the mainstay of treatment with surgical intervention reserved for select cases.

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Declaration of patient consent : The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/ her images and other clinical information to be reported in the journal. The patient understands that his/ her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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