

## Pathological Fracture In Children With Chronic Staphylococcus Aureus Osteomyelitis

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### INTRODUCTION:

Acute haematogenous osteomyelitis is a common pediatric musculoskeletal infection (1). It is defined as inflammation of the bone and bone marrow caused by pyogenic bacteria, mycobacteria or fungi (8).

Pathological fracture associated with acute bacterial haematogenous osteomyelitis are rare in all ages groups. Most reported cases are in adults and only few cases involve pediatric patient (1). Staphylococcus aureus has been reported to be responsible for 67% to 89% of cases of acute hematogenous osteomyelitis in the pediatric population (2).

### MATERIALS & METHODS:

A 1 year and 3months old boy was treated as right thigh abscess with osteomyelitis of right femur at a different district hospital. Ultrasound of right thigh was performed and was suggestive of right thigh abscess with pus collection near the periosteum at medial aspect of thigh. Pus was drained and tissue culture result was Staphylococcus aureus and sensitive to cloxacillin. He was started on intravenous cloxacillin QID. The patient's condition significantly improved post operatively and able to weight bear. Patient was on IV cloxacillin for 17 days and Syrup Cloxacilin for 7 days, T. Fusidic acid for 19 days.

Later after 3 weeks post diagnosis, he was admitted to our ward with history of right thigh pain and swelling. He had a history of hitting his thigh to the bicycle handle a day before. the trauma. X-ray of right femur was done and showed fracture midshaft of right femur with extensive sequestrum overlying inside the medullary canal (figure 1 & 2).

### RESULTS:

On local examination of right thigh, medial and lateral wounds had healed, not inflamed and no discharge present. Bony tenderness was present along the midshaft of right thigh. His blood investigations were as followed: Hb: 9.8g/L, TWC: 13.7, CRP; 109.4mg/L, ESR: 68mm.

He was started back on IV cloxacillin and T. Fusidic acid and the fracture was treated with right hip spica.

### DISCUSSIONS:

Osteomyelitis is defined as infection in bone. The two most widely used classification of osteomyelitis in the medical literature and in clinical practice are those presented by Waldvogel et al (3) and Cierny et al(4). In children over one year of age, Staphylococcus aureus, Streptococcus pyogenes, and Haemophilus influenzae are most commonly isolated. The minimal traditional duration of treatment in most stages of osteomyelitis (Cierny-Mader Stages 1, 3, and 4) is four to six weeks.

Chronic osteomyelitis is a recognized, although infrequent, cause of pathologic fractures, which can occur during the process of bone resorption and formation of new bone. The healthy bone of a child has greater plasticity than that of an adult, and a greater loss of normal architecture and mineral content is therefore necessary to lead to a fracture(5). Patients in the fracture group required a longer duration of treatment with parenteral antibiotics and with oral antibiotics compared with the patients in the non-fracture group.

Figure 1: Lateral view of



Right femur

Figure 2: Anterior-Posterior view of Right femur

### CONCLUSION:

Osteomyelitis is a common pediatric musculoskeletal infection. Staphylococcus aureus osteomyelitis is a serious infection that may predispose children to pathologic fractures. Early diagnosis and prompt treatment can ensure complete cure of the disease. Careful evaluation of imaging studies is also required, specifically including evaluation of the circumferential extent of a subperiosteal abscess and the presence of an ischemic transition zone in the marrow. Intravenous antibiotic should be the 1<sup>st</sup> line of treatment and should be given for a sufficient period of time. Protected and restricted no weight-bearing