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IMAGES IN PAEDIATRICS

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Magnetic resonance imaging in suspected septic arthritis can avoid unnecessary surgery

Hip pain in children is a common presentation. Infective causes of pain and limitation of movement are usually due to septic arthritis or osteomyelitis.

A 6-year-old child presented to our orthopaedic department with pain in the right hip. He had a fall 4 days previously and sustained grazes to the right knee and shin. Although able to bear weight initially, he experienced increasing pain in his hip, and his mother noticed a limp and general malaise developing over the next 3 days.

The child was pyrexial (38°C) and all movements of the joint were guarded. Initial examination of the blood showed a raised white cell count and inflammatory markers. X Rays of the joint were unremarkable and emergency ultrasonography showed no collections or effusions in either the hip or the abdomen. Repeat blood cultures grew *Staphylococcus aureus* and intravenous antibiotics were started. An urgent bone scan was carried out to rule out osteomyelitis. Emergency magnetic resonance imaging was carried out and a diagnosis of pyomyositis in the gluteus medius was made.

The short tau inversion recovery coronal image shows increased signal intensity in the gluteus medius muscle (fig 1). The axial T2 slice shows mild volume increase in the gluteus medius and increased signal intensity throughout the gluteus medius (fig 2).

Untreated primary pyomyositis is a potentially serious condition if it is missed. A delay in diagnosis leads to abscess formation over a period of 3 days to 3 weeks,¹ which requires surgical intervention. Neglected cases could cause overwhelming sepsis, which might prove fatal.^{2,3} If the condition is diagnosed early with magnetic resonance imaging, then it can be treated simply with intravenous antibiotics, yielding complete resolution of symptoms without surgical intervention.

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Figure 1 Short tau inversion recovery image showing increased signal intensity in the gluteus medius.

Figure 2 Axial T2 slice showing increased volume and signal intensity in the gluteus medius.

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