

Septic arthritis

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Figure 44.38 Anteroposterior pelvic radiograph of a child with spastic cerebral palsy. The right hip is dislocated: none of the head lies medial to the vertical Perkins line. The acetabulum is dysplastic. The left hip , knee is in abduction. There is often a ‘windswept’ appearance with one leg stiff in abduction and the other stiff in adduction. The red line demon

strates the pelvic obliquity; many children also have a scoliosis. Note the significant constipation; this can cause significant pain, which will increase spasm and increase the pain still further.

the differentiation between joint sepsis and transient synovitis of the hip can also be difficult. Classically, the child presents with pain, fever and a reluctance to move the joint; in the lower limb, this implies a reluctance to weight bear. On examination, local tenderness and painful restriction of movement are apparent and in superficial joints inflammation may be obvious, with a hot, swollen joint. Investigations include FBC, ESR, CRP and blood cultures. Plain radiographs help exclude other diagnoses and may identify osteomyelitis. Ultrasound scans of deep joints, such as the hip, will identify joint effusions (Figure 44.39). MRI is considered the investigation of choice but this resource is not available to all (in a timely manner) and, in young children, it requires a general anaesthetic. Good clinical skills, regular patient review and a high index of suspicion are still the most valuable tools. Four clinical predictors can differentiate between septic arthritis and transient synovitis (Table 44.17 Pus in a joint is destructive: the proteases produced by leukocytes destroy both the bacteria and the collagen matrix of the articular cartilage. A VN may occur secondary to pressure effects or ischaemic infarction. The treatment of a presumed septic arthritis therefore requires the prompt removal of pus from the joint and appropriate adequate antibiotic therapy. Pain relief and rest are also important, as are the general health and nutrition of the patient. The joint is aspirated and, if pus is confirmed, a formal washout is mandatory; standard teaching states that the joint must be opened, irrigated and free drainage encouraged via the capsulotomy. Recent literature supports repeated aspiration/irrigation via a large-bore cannula or a small arthroscope for all joints except the hip. Antibiotic usage is guided by local hospital policy, the source of the infection, the Gram stain and, in due course, the culture and sensitivity of the organism identified. Joint instability, particularly in the hip joint (Figure 44.40), may require the reduced joint to be splinted while the inflammatory process settles.

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TABLE 44.17 Septic arthritis. (a) The clinical predictors of Kocher et al. (2004) for the diagnosis of septic arthritis: History of fever $>38.5^{\circ}\text{C}$ Non-weight-bearing Erythrocyte sedimentation rate >40 mm/h 9 White cell count $>12 \times 10^9/\text{L}$ (b) The value of the clinical predictors of Kocher et al. in determining the likelihood of a joint being septic: Number of positive Predicted probability of joint sepsis predictors 0 2.0% 1 9.5% 2 35.0% 3 72.8% 4 93.0% Diagnosis is difficult in neonates and the immunocompromised Typical presentation is pain, fever and a reluctance to move the joint or weight bear Investigations should include FBC, ESR, CRP, blood cultures and appropriate imaging studies, combined with astute clinical skills Pus in a joint destroys articular cartilage and causes avascular necrosis of intra-articular epiphyses Treatment is prompt removal of pus, appropriate antibiotic therapy, pain relief and splintage

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