ULTRASOUND-GUIDED ASPIRATION FOR TRANSIENT SYNOVITIS OF THE HIP

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We reviewed 15 children with transient synovitis of the hip who had aspiration of an effusion under local anaesthesia with ultrasound guidance. There were no significant complications; aspiration was useful for diagnosis and gave considerable symptomatic relief. We discuss the role of ultrasound in diagnosis and treatment.

At the Nuffield Orthopaedic Centre, ultrasound scanning has been used since 1984 to investigate painful hip disease in children. It is a useful diagnostic tool, giving accurate results in the assessment of hip effusion (Kallio et al 1985). We now report the use of ultrasound-guided aspiration under local anaesthesia in patients with transient synovitis.

In the past, hip aspiration in children was used mainly to exclude or confirm the diagnosis of septic arthritis, and was performed under general anaesthesia, with or without image intensifier control. This has the disadvantage that a negative aspiration may be due either to failure to enter the joint or to the absence of an effusion. Ultrasound examination eliminates this problem by determining the presence of an effusion, and can also help to guide the insertion of the aspirating needle. We have found that local anaesthesia is satisfactory for this procedure.

Our impression is that aspiration of significant effusions in patients with transient synovitis gives an immediate improvement in symptoms and a shortened time in hospital. We have reviewed our experience with 15 consecutive patients with transient synovitis having ultrasound-guided aspiration under local anaesthesia.

PATIENTS AND METHODS

Hospital records were used to identify 15 consecutive patients with transient synovitis who had undergone aspiration under local anaesthesia from March 1987 to December 1988. Their ages ranged from 4 to 10 years (mean 6). The patients' notes, radiographs and ultrasound scans were reviewed and note made of the final diagnosis, length of stay in hospital, and the results of haematological and microbiological investigations.

Technique. Anteroposterior and 'frog' lateral radiographs are taken and used to exclude established sepsis, Perthes' disease or other major abnormality. Ultrasound examination is then performed to detect any effusion and assess its size. If there is a positive result then the skin is marked indelibly directly anterior to the distended hip capsule. The size of the child determines the choice of ultrasound probe; we used instruments with frequencies from 5 MHz to 10 MHz.

A significant effusion is easily recognizable (Fig. 1), and the scan shows the site of the mid-point of the
Transient synovitis of the hip is the commonest cause of acute admission of children to the Nuffield Orthopaedic Centre. In 1987 a total of 91 admissions of children with this diagnosis represented over 400 days of in-patient care (average 4.8 nights per child). The condition is usually benign and rarely heralds the development of more sinister pathology, but patients remain in hospital for several days, partly for comfort and reassurance, but often because of the fear of septic arthritis.

The diagnosis of sepsis is usually clear from generalised illness, pyrexia and raised white cell counts and sedimentation rates, but sometimes remains in doubt. In these circumstances the traditional approach is to aspirate under general anaesthesia. We have successfully used ultrasound-guided aspiration under local anaesthesia for these cases and have noted a rapid improvement in symptoms, even when sepsis is not suspected. We now consider this to be a useful therapeutic technique.

The use of ultrasound to diagnose transient synovitis has previously been reported from this centre (Wilson, Green and MacLarnon 1984), and we now consider it a routine part of assessment. The presence of a significant effusion is often correlated with hip pain, and explains the frequent observation of a rest posture with the hip in some flexion and external rotation, thus reducing intra-capsular pressure. Aspiration should, therefore, reduce intracapsular pressure and relieve symptoms. In addition, the aspiration of clear fluid with no evidence of bacterial infection on microscopy or culture minimises the possibility of sepsis.

We have shown that this technique is safe and accurate. Wingstrand et al (1985) have suggested that aspiration provides only temporary reduction in joint effusion, but our impression is that patients gain lasting relief and spend less time in hospital than patients who do not have an aspiration. Our present series was too small to show a statistically significant difference in hospital stay, but we intend, in a prospective study, to investigate this accurately. Eventually, ultrasound-guided aspiration may make it possible to treat more children on an out-patient basis, with satisfactory relief of symptoms and no fear of covert sepsis.

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REFERENCES

