for haematins. The patient returns the next week as an out-patient to the haematology department and a further unit of blood is taken. A week later the patient is admitted to the orthopaedic wards for surgery.

Results. During the two years from January 1988 to December 1989, 96 patients were willing to undergo autologous transfusion; of these, six had too low a haemoglobin. The number of units of blood collected was 166; of these, 36 were discarded but the remainder were used.

Sixteen patients (17.8%) required banked blood as well as their own; five patients needed no blood at all. In all, 57.3% of the patients who were undergoing joint replacement donated blood.

The only complication recorded was the wastage of six units of blood as a result of air entering the pack. A serious possible complication is mistransfusion of blood due to errors in labelling. Although we did not experience this complication it is recommended that strict procedures should be followed for collection, storage and records; the responsibilities of everyone taking part must be well defined.

Conclusions. From our experience with autologous transfusion we believe that it is a safe and effective means of meeting the transfusion requirements of patients undergoing elective orthopaedic procedures. It eliminates the risk of blood-borne infections such as AIDS and hepatitis and it promotes patient involvement in the surgical procedure. It can be used with other techniques, such as blood salvage and planned haemodilution to minimise blood transfusion. Autologous blood transfusion is a simple and inexpensive process which does not require expensive equipment. It can be successfully used in any hospital.

We would like to thank Mr W. Musgrave, Senior MLSO at the West Cumberland Hospital and the rest of the haematology department for their co-operation.

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REFERENCES

LESSONS IN THE INVESTIGATION OF IRRITABLE HIP: FAILURE OF ULTRASOUND TO DETECT HAEMARTHROSIS

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Ultrasonography has proved a sensitive indicator of effusion in a child’s hip, based on the detection of anterior displacement of the iliofemoral ligament (Wilson, Green and MacLaron 1984). The degree of this displacement usually relates to the size of effusion, but under certain circumstances this correlation breaks down, rendering ultrasonographic assessment unreliable.

Case reports. Two children with previously undiagnosed haemophilia each presented with an irritable hip. The first, a healthy eight-year-old boy, developed progressive pain and restricted movement of his right hip over the six days prior to his referral. The second, a 14-month-old boy, was admitted with a 48-hour history of reluctance to bear weight on his left leg. There was no history of trauma or of systemic upset in either child, and on examination both children were apyrexial. The affected hips were held fixed in flexion, abduction, and external rotation. Plain radiographs clearly demonstrated hip stand-off which, in the 14-month-old boy, was considerable and amounted to frank subluxation (Fig. 1a). Ultrasound examinations failed to detect significant

Fig. 1a

Fig. 1b

Figure 1a showing left hip subluxation; 1b showing reduction after aspiration of 5 ml of blood.

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effusion in either child (Fig. 2) but needle aspirations subsequently demonstrated intracapsular blood under pressure. Following decompression, hip movements became much freer and the hips were radiographically reduced (Fig. 1b).

Discussion. Plain radiographs have been shown to be less accurate than ultrasound examination in the detection of hip effusion (Peck 1986); thus it has been suggested that they are redundant in the routine investigation of irritable hip. However, in our two cases tense effusions were not detected by ultrasound examinations whilst radiographic changes were clearly present. How can this come about? With a tense effusion, extrusion of the femoral head may tighten the anterior capsule across the front of the femoral neck, displacing intracapsular fluid into the acetabulum. A given volume of intracapsular fluid is therefore accommodated at lower pressure but at the expense of subluxation. In this way, with the flattening of the iliofemoral ligament against the femoral neck, the ultrasonic sign of effusion is masked. This previously unrecognised phenomenon therefore requires that subluxation is excluded by radiography before ultrasound examination can be considered reliable.

Conclusion. If a significant hip effusion is suspected on clinical grounds, both a radiograph and an ultrasound examination should be performed. Neither one in isolation can exclude an effusion.

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REFERENCES

THE TREATMENT OF HALLUX VALGUS WITH OVERRIDING SECOND TOE

D. CONLAN, P. J. GREGG

The combination of hallux valgus with an overriding second toe is a common problem for which a multitude of operations are performed. The condition has received little attention in the literature and treatment is often based on personal preference. The aim of this study, which was part of a larger prospective study of the treatment of hallux valgus, was to investigate objectively the outcome of three commonly performed operations designed to relieve the combined deformity.

Patients and methods. We studied 37 feet in 29 patients who had, in addition to hallux valgus, an associated overriding of the second toe. All the patients were female. In 16 feet a Keller’s procedure was combined with interphalangeal joint fusion of the second toe (group I). In a further 11 feet metatarsophalangeal fusion of the great toe and interphalangeal joint fusion of the adjacent toe was performed (group II). The remaining 10 feet underwent a Keller’s procedure with proximal hemiphalangectomy of the second toe (group III). In all cases the operative technique employed depended on the surgeon’s personal preference.

Patients were assessed clinically and radiologically with particular reference to the presence or absence of recurrent overriding. Statistical analysis was performed using the chi-square test with Yates ‘correction for continuity’ and the Fisher exact probability test.

Results. The three groups were similar in terms of age, sex distribution and the pre-operative hallux valgus angle (Table I). At presentation, all patients had symptomatic

Fig. 2
Ultrasondograph of the 14-month-old boy’s left hip prior to aspiration. Note the arrows demonstrating relatively little displacement of the iliofemoral ligament from the femoral neck, considering the joint contained 3 ml of blood under pressure. (E = epiphyseal plate, F = femoral head.)