BRIEF REPORTS

IDIOPATHIC BILATERAL SLIPPED UPPER FEMORAL EPiphYSES IN
A CHILD UNDER SIX YEARS OF AGE

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We report the case of a child with idiopathic, bilateral slipped upper femoral epiphysis (SUFE), and believe her to be the youngest yet reported.

Case report. A white girl aged 5 years 9 months had a one-month history of a left-sided painless limp. The left hip showed the typical externally rotated position on attempted flexion but there was a full and painless range of movement on the right. There was no family history of SUFE, and no recent trauma or illness. She was on the 11th height centile but well above the 97th weight centile. She appeared to be in a growth spurt, and radiographs indicated skeletal retardation by one year.

Radiographs of the left hip showed a 25% slip (Wilson 1938) with a slip angle of 25° (Waldenström 1939), some early postero-inferior callus and rounding of the metaphysis indicating chronicity (Fig. 1). The right hip showed an almost undisplaced slip.

CT scans indicated a 90% slip and a slip angle of 75° on the left (Fig. 2), and minimal displacement on the right. CT is more accurate than plain radiography (Cohen et al 1986) because of parallax and the effect of hip rotation. Haematological and endocrine investigations showed no abnormalities and there was no CT evidence of perihypothalamic or pituitary tumour.

Treatment was by bed rest for two weeks and then a synthetic cast hip-spica. The hip was mobilised after two to three months (Betz et al 1990), and radiographs at one year showed significant remodelling (Fig. 3). The child is painfree with no limp, lacking only 20° internal rotation of the left hip.

Discussion. SUFE is uncommon under ten years of age and unilateral cases are usually associated with either septic arthritis, non-accidental injury, a familial trait, trauma, caliper treatment (Barrett 1985), myelodysplasia, pelvic radiotherapy or after cheilectomy for Perthes' disease. Most are found to be idiopathic and although delayed sexual and skeletal development has been postulated, a mechanical cause is likely secondary to a
Fröhlich-like type and anatomical variations such as excess retroversion.

In contrast, bilateral cases are most common during treatment for hypothalamo-pituitary axis failure, during which hormone replacement can result in a rapid gain in height and weight. Another cause is hyperparathyroidism, either primary or secondary to chronic renal failure.

‘In-situ’ pinning has been used for a mild or moderate slip but in this young age group complications such as growth arrest are numerous. Leg-length discrepancy is often less than should theoretically occur; in some cases the contralateral physis also undergoes premature fusion, as a result of the underlying constitutional disorder or from asymptomatic slip. Chondrolysis is another possible complication of nailing, and avascular necrosis may follow any type of manipulative reduction.

Severe slips have a poorer long-term prognosis for arthritic degeneration but the theoretical advantages of improving the biomechanics are outweighed by the complications of osteotomy in this young age group.

Spica-cast treatment has not been associated with chondrolysis in this age group, and has been shown to stabilise the slip and leave excellent potential for remodelling (Clarke and Harrison 1986).

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

REFERENCES

TIBIAL CAST WEDGING: A SIMPLE AND EFFECTIVE TECHNIQUE

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Charnley (1950) considered that “contrary to popular opinion, the operative treatment of fractures is much simpler than is the non-operative” and that “the manipulative treatment of fractures can be resolved into something of a science”. With recent advances in external fixation and closed nailing, many tibial fractures that were traditionally well managed in casts are now being treated by surgical fixation (Apley and Rowley 1992) and the failure to achieve an acceptable position in a cast is rectified by operation rather than by correction within the plaster.

We describe a technique for the accurate wedging of tibial casts. Similar methods were well known in the past and our modification has proved to be simple, effective, and reliable over a number of years. We present one illustrative case.

Technique. Ideally, the procedure is performed three weeks after injury when the fracture is mobile but ‘sticky’ and correction is almost painless.

The method sounds complex, but can be done quickly using only a ruler and marker pen. No measurement of angles is necessary (Fig. 1).

1) On the anteroposterior radiograph draw lines along the long axes of the proximal and distal fragments of the tibia.