PERCUTANEOUS EPIPHYSIODESIS

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Epiphysiodesis is considered to be the treatment of choice for leg length discrepancy of 2 to 5 cm in skeletally immature patients (Siffert 1987). Operations which expose the physis through medial and lateral incisions may have complications including infection, flexion contractures, partial physeal closure and unsightly scars (Blair et al 1982; Siffert 1987). More limited exposures have been described (Bowen and Johnson 1984; Canale, Russell and Holcomb 1986), and we report a simple percutaneous technique that requires only a 4.5 mm drill.

Technique. Under general anaesthesia, the upper tibial epiphyseal plate is identified with the aid of an image intensifier. On the lateral view the anterior and posterior cortices are marked with K-wires (Fig. 1). The lower femoral epiphyseal plate is similarly identified and these markers obviate the need for lateral films during the procedure. With a narrow scalpel a stab wound is made on the lateral side of each epiphyseal plate; through this a 4.5 mm drill with its sleeve is inserted transversely (Figs 2 and 3). The epiphyseal plate is drilled several times in a fan-like pattern, crossing the midline but staying clear of the anterior and posterior cortices (the K-wires serve as limiting landmarks). The same procedure is performed from the medial side of each epiphyseal plate. The skin is closed with steri-strips and the knee protected with a splint. The patient is discharged next day and allowed partial weight-bearing with crutches for two weeks. The splint can be discarded after four weeks. Results. Nine children whose average age was 13.5 years had percutaneous epiphysiodesis by the technique described. The average operating time was 40 minutes; the radiation exposure is thought to be similar to that when pinning an adult hip fracture (Canale et al 1986). There were no complications. All the stab wounds healed uneventfully with almost invisible scars. At follow-up there was no clinical evidence of angulatory deformity in any of the patients. Radiographically the epiphyseal plates had closed in three to five months.

The procedure seems to be reliable, it is easy to perform and it results in minimal postoperative discomfort.

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REFERENCES


