SPONTANEOUS RESOLUTION OF AN OSSEOUS BRIDGE AFFECTING THE DISTAL TIBIAL EPIPHYSIS

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The risk of developing an osseous bridge after certain types of epiphyseal injury is well established. Once formed subsequent growth will usually result in a progressive deformity. We present an unusual case in which such an osseous bridge formed and a deformity developed. The bridge then resolved spontaneously and the joint returned to normal alignment.

Case report. A five-year-old girl injured her right ankle by trapping her foot beneath a bench which had then collapsed. Radiography showed a Salter-Harris type-III fracture of the distal tibial epiphysis with medial displacement (Fig. 1).

The fracture was treated by closed manipulation and a plaster cast for seven weeks. After this was removed a full range of painfree movement was regained rapidly.

At review 12 months later there was evidence of bony tethering across the epiphysis with some varus deformity at the ankle which increased to 18° at 15 months. At this stage tomography showed a localised osseous bar (Fig. 2). Two months later the child was admitted for operation on the bar, but radiographs showed that the amount of varus appeared to have decreased and surgery was deferred.

After a further four months the shape of the ankle had clearly improved with talar tilt reduced from 18° to 10°. Two and a half years later the alignment of the ankle had been almost completely restored. She was last seen at the age of nine, four years after the accident. The ankle had completely recovered with a normal contour to the epiphyseal line and a full range of painfree movement (Fig. 3).

Discussion. Salter and Harris (1963) classified epiphyseal injuries according to the pattern of involvement of the epiphysis and metaphysis. Type-III and type-IV fractures cross the epiphyseal plate and when healing may form an osseous bridge between the epiphysis and the metaphysis, which will lead to distortion of the epiphyseal plate by...
subsequent growth and progressive deformity. Treatment to correct the deformity is by corrective osteotomy or by resection of the epiphyseal bridge.

Very rarely an osseous bridge may resolve spontaneously. Langenskiold (1967) reported a ten-year-old child in whom corrective osteotomy was followed by spontaneous resolution of the epiphyseal bar such that normal growth of the epiphyseal plate resumed and no further surgery was required.

In our patient resolution of an osseous bridge occurred without any treatment. Perhaps growth of the surrounding normal epiphysis distracted the bridge to the point at which it broke down. Clearly this can only happen if the bridge is very localised. In our case not only did normal growth resume but there was also, ultimately, complete resolution of a varus deformity.

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REFERENCES

PROSTHETIC REPLACEMENT OF A CHONDROSARCOMA OF THE UPPER END OF THE FEMUR: A 43-YEAR FOLLOW-UP
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In January 1951 a 31-year-old woman was treated for low-grade chondrosarcoma in the intertrochanteric region of the left femur. This was resected and replaced with a custom-made acrylic prosthesis (Bingold 1972). The outcome was satisfactory for 3.5 years until the patient fell and broke the prosthesis at the head-neck junction. After a few weeks a steel implant was inserted with a successful result. An 18-year follow-up of the patient was reported (Bingold 1972). We now present a 43-year follow-up.

Progress since 1972. The head of the steel prosthesis gradually eroded the acetabulum and caused increasing hip pain. In 1974 a third replacement was carried out using a titanium prosthesis with a cemented polyethylene cup. The patient’s immediate progress was satisfactory, but three days after surgery she fell on to her left hip dislocating the head of the implant and fracturing the upper end of the remaining femur. The prosthesis was reduced and the fracture repaired with three screws and acrylic cement. For a number of years she was comfortable, but gradually the repaired portion of the proximal femur weakened and the stem of the implant perforated the lateral cortex.

In 1983 another prosthesis was inserted, 2.5 cm longer than the previous one. Progress was good and the patient led an active life until she fell again in December 1990, sustaining a fracture below the collar of the prosthesis (Fig. 1). The lower end of the metal stem was threatening to perforate the cortex. At operation, the prosthesis was found to be loose, with three defects in the distal portion of the femur which required bone grafting. Full weight-bearing was allowed after three months and by 1992 (Fig. 2) she was leading a reasonably normal life.

In 1994, over 43 years after her first operation, the patient was well, could walk three to four miles, drive a car, and do some gardening. The 3 to 4 cm shortening was partially corrected by a 2 to 3 cm shoe raise. The patient preferred to use a stick because of osteoarthritis in both