

the necrotic abdominal wall was performed leaving a soft tissue defect measuring 19 × 8 inches (48.3 × 20.3 cm). A defunctioning transverse colostomy was fashioned in the left upper quadrant of the abdomen and the raw area packed with gauze.

She made a rapid recovery and after two weeks the abdominal wall defect was covered with split skin. At follow up she is well but is left with a large incisional hernia of the lower abdomen.

Culture of the necrotic tissues removed at surgery revealed nine bacterial species; subsequent barium enema has shown the presence of severe diverticular disease of the sigmoid colon with stricture formation.

Discussion

Necrotizing fasciitis, a variant of acute non-clostridial dermal gangrene, may affect any part of the body surface. It is usually initiated by surgical procedure or spontaneous trauma and has been reported following insect bites, and injections. That a trivial injury may lead to the development of such a rapidly destructive lesion that is associated with a mortality rate of 70% (Ledingham & Tehrani 1975) may be explained by two factors:

- (1) A very high proportion of these patients have a pre-existing disease associated with impaired host defence mechanisms, e.g. diabetes mellitus, hepatic cirrhosis (Giuliano *et al.* 1977).
- (2) The organisms involved in the development of the lesion have a profound enzymic action on the local tissue environment (Giuliano *et al.* 1977).

Abdominal wall necrotizing fasciitis has been reported in association with diverticular disease. Galbut *et al.* (1977) describe a patient with this condition, who was found at operation to have a colocutaneous fistula directly related to the area of gangrene. Spontaneous colocutaneous fistula in diverticular disease is uncommon, occurring in 0.6% of patients with diverticular disease requiring surgery for fistula (Colcock & Stahmann 1972), and no such fistula was demonstrated in our patient.

A review of published reports reveals no previous association between abdominal wall necrotizing fasciitis and peritonitis secondary to diverticular disease.

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Genu recurvatum in association with slipped capital femoral epiphysis¹

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Slipping of the capital femoral epiphysis occurring in adolescence is usually an isolated event but may be bilateral in 25% of cases. Other epiphyseal abnormalities developing at the same time are unusual and suggests that the same disease process is in play. We report a case in which genu recurvatum developed in a patient with bilateral slipped upper femoral epiphyses.

Case report

The patient, a 14-year-old girl, presented in 1977 with a short history of pain in the left hip. X-ray examination showed a posterior slip of the left capital femoral epiphysis. She also complained of low back pain and on examination there was local tenderness and some flattening of the normal lumbar lordosis. Forward flexion was limited but other spinal movements were full. X-rays showed multiple Schmorl's nodes and irregularity of the epiphysis on the superior border of the first lumbar vertebrae.

The slipped left epiphysis was pinned *in situ*. Eight months later she developed pain in her other hip and X-rays showed a posterior slip of the right capital femoral epiphysis which was again treated by fixation with Moore's pins.

At review one year after the initial presentation our attention was drawn, by the patient and her parents, to a valgus-recurvatum deformity of the left knee. This deformity had developed since her first presentation and was said to be progressing. Examination of the knees showed that on the left hyperextension was possible to 30° and there was 10° of valgus deformity. On the right there were similar changes but much less marked – 15° of hyperextension and 5° of valgus.

X-rays showed that the patella was unusually low. The ratio of patella length to patella tendon length was 1 : 1, which is normal (Insall & Salvati 1971). The proximal tibial epiphyseal plate was still open and the epiphysis was of equal height anteriorly and posteriorly. There was no evidence of premature fusion in the anterior part of the epiphysis. The angle between the joint surface and the longitudinal axis of the tibia is normally between 93° and 97° (Von Lanz & Wachsmuth 1938). In this patient the angle on the right measured 90° and only 80° on the left. This would indicate a forward tilt of the tibial plateau on the left (Figure 1).

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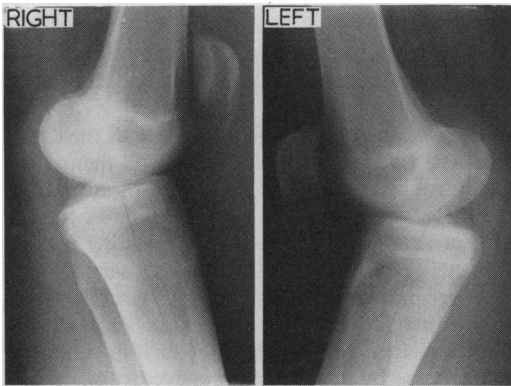


Figure 1. Lateral radiographs of the right and left knees

The patient was observed over the next two years and there was only a slight increase in the deformity on the left to 40° of hyperextension and 15° of valgus. Following complete closure of the upper tibial epiphysis, an upper tibial osteotomy of the dome type was performed to correct both elements of valgus and recurvatum.

Discussion

Genu recurvatum of the degree requiring surgical correction is unusual. Angular deformity may occur when the growth plate underlying the tibial tuberosity fuses prematurely as a result of Osgood-Schlatter disease (Sterling 1952, Jeffrey 1965). A similar deformity may occur following transplantation of the tibial tuberosity in children with recurrent dislocation of the patella (Harrison 1955, Heywood 1961). Similar changes have also been described as a late complication of traction on a tibial wire in fractures of the femur in children (Bjerkreim & Benum 1975). It may also follow surgical correction of valgus deformity of the knee by stapling (Poirier 1968).

The association between slipping of the capital femoral epiphysis and epiphyseal abnormalities of the tibia is uncommon. Lovejoy & Lovell (1970) reported two cases of tibia vara developing in patients with epiphysolysis of the hip. However, in reviewing a large number of their own patients with these conditions no causal relationship was noted. Rechnagel (1973) described two cases of genu recurvatum in patients with slipped capital femoral epiphysis and attributed this deformity to premature closure of the anterior part of the upper tibial growth plate. Donaldson (1965) reported a single case of anterior slip of the proximal tibial

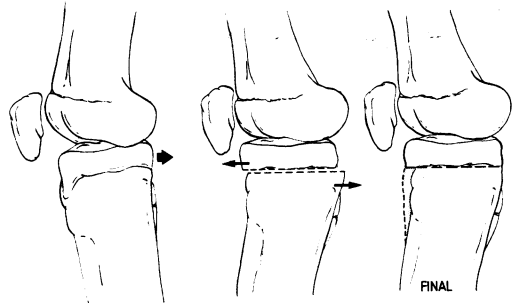


Figure 2. Suggested mechanism of slip of proximal tibial epiphysis

epiphysis in a patient who four years previously had a slip of the capital femoral epiphysis.

It is difficult in the present case to believe that premature anterior epiphyseal fusion at the end of the adolescent growth spurt would produce such marked recurvatum. We feel that an alternative explanation for the deformity would be a gradual anterior slip of the upper tibial epiphysis (Figure 2), and we feel that the altered relationship between the tibial plateau and the tibial shaft can be explained on these grounds.

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