POST-TRAUMATIC OSTEOCHONDritis OF THE LOWER TIBIAL EPIPHYSIS

Report of a Case

D. E. ROBERTSON, SASKATOON, CANADA

Osteochondritis of the lower tibial epiphysis is rare. Siffert and Arkin (1950) reported a case after bimalleolar fracture with crush injury of the lateral half of the epiphysis. Caffey (1961) had seen only one example. The patient reported here did not sustain a fracture and the condition is, therefore, similar to osteochondritis in other epiphyses.

FIG. 1

Antero-posterior radiographs four months after injury.

FIG. 2

Ten months after injury.

CASE REPORT

A boy of three fell down a flight of steps. When picked up he had pain in the left ankle which swelled a few hours later. He could not walk on the injured leg and two days later radiographs showed soft-tissue swelling but no change in bone density or structure. Twelve

days later he was able to walk with a limp. Four months later he still had a persistent limp and swelling of the ankle. Examination revealed soft-tissue swelling over the medial aspect of the joint but no tenderness. There was slight limitation of dorsiflexion and plantarflexion. Radiographs showed flattening and sclerosis of the lower tibial epiphysis (Fig. 1). The joint was immobilised for two months in a below-knee walking plaster and thereafter a supportive elastic bandage was used for two months. Radiographs ten months after the injury still showed sclerosis, but the increased epiphysal volume and new bone formation medially indicated early regeneration (Fig. 2). Three years after injury the left calf was slightly wasted, there was

FIG. 3

Five and a half years after injury.

some soft-tissue swelling around the left ankle and the range of ankle movement was full. Five and a half years after the original injury there was no clinical abnormality. The tibiae, measured radiologically, were equal in length, and radiographs showed that the relationship of the lower tibial and fibular epiphyses was the same on both sides. Flattening and irregularity of the epiphysis with slight broadening of the metaphysis remained on the affected side. The appearance had not changed in the last two years and healing was presumed to be complete (Fig. 3).

SUMMARY

1. This case of post-traumatic osteochondritis of the lower tibial epiphysis is important because the condition is rare.
2. The similarity to osteochondritis in other sites dating from a single injury is noted.
3. The ankle joint bears more body weight per surface area of articular cartilage than other weight-bearing joint surfaces. It is of interest that regeneration took place in spite of the fact that the child continued to bear weight and that the joint was immobilised for only two months, beginning four months after the original injury.

REFERENCES

- CAFFEY, J. (1961): *Pediatric X-ray Diagnosis*. Fourth edition, p. 981. Chicago: Year Book Medical Publishers Inc.
- SIFFERT, R. S., and ARKIN, A. M. (1950): Post-traumatic Aseptic Necrosis of the Distal Tibial Epiphysis. *Journal of Bone and Joint Surgery*, 32-A, 691.