

Distal tibial osteochondroma deforming the fibula

Lars G. Danielsson¹, Izzedin El-Haddad² and Oliver Quadros²

Three children had osteochondromata in the lateral part of the distal metaphysis of the tibia causing impingement with erosion and deformity of the fibula. The osteochondromata were removed through an anterior approach without osteotomy of the fibula. At reexamination 1.5-11 years postoperatively, the patients had normal ankle function. Remodeling of the fibula had gradually occurred in all the cases, most in the youngest patient. There was no injury to the distal tibial physis.

Case 1

In a 13-year-old boy, a left-sided osteochondroma was accidentally diagnosed simultaneously with a right-sided epiphyseal ankle fracture. The patient was free from pain, and the range of motion in the ankle was normal. The size of the osteochondroma on the AP radiograph was 52 × 20 mm. It was partly removed through a posterior incision. Owing to recurrence the patient was reoperated on 18 months later through an anterior longitudinal incision.

On reexamination at the age of 23, the patient was free from pain with a normal range of motion in the ankle joint and no radiographic recurrence.

Case 2

A 16-year-old girl had a right-sided osteochondroma causing repeated ankle distortions for 6 months. The range of motion in the ankle joint was normal. The size of the osteochondroma on the AP radiograph was 46 × 22 mm. The distal physeal plates of the tibia and fibula were closed.

On reexamination 11 years postoperatively, the patient was free from pain and had a normal range of motion in the ankle joint. There was a partial remodeling of the fibula and no recurrence of the osteochondroma at radiography.

Case 3

An 11-year-old boy with a right-sided osteochondroma was referred because of increasing bony swelling noticed for 6 months. The patient was free from pain, and the range of motion in the ankle was normal. The size of the osteochondroma on the AP radiograph was 60 × 27 mm (Figure 1). The osteochondroma was located very close to the distal tibial physis; at surgery an image intensifier was used to identify and prevent injury to the physis.

On reexamination 1.5 years postoperatively, the patient was free from pain with a normal range of motion in the ankle joint.

Radiography

In all 3 cases a broad-based osteochondroma located in the lateral part of the distal tibial metaphysis pressed on the fibula (Figure 1). The distal shaft of the fibula was curved and hollowed out. The distance between the tibia and the fibula was increased. After removal of the osteochondroma, there was a gradual remodeling of the fibula, more in the youngest than in the older patients.

Lund University Department of Orthopedics¹ at Malmö General Hospital, S-214 01 Malmö, Sweden, and the Orthopedic Unit², Department of Surgery, Faculty of Medicine, Kuwait University, Kuwait



The fibula is impinged by the osteochondroma, curved and hollowed out.



Immediately after surgery.



Seven months postoperatively. Partial remodeling of the fibula.



Eighteen months postoperatively. Increased remodeling of the fibula. Normal growth of the tibial physis.

Figure 1. Case 3. Osteochondroma in the lateral part of the distal tibial metaphysis.

Surgery

Using a tourniquet the osteochondroma was explored through an anterior longitudinal incision. The interosseous membrane was incised close to the attachment to the tibia. The osteochondroma with the cartilaginous cap and the periosteum was removed using a chisel. In all the cases the anterior tibiofibu-

lar ligament was intact and the ankle stable after removal of the osteochondroma. Postoperatively, suction drainage was used for 24 hours. Full weight bearing was allowed from the first postoperative day with an elastic bandage or a cast for 2 weeks.

Discussion

In all 3 cases the osteochondroma could be removed without osteotomy of the fibula, which previously has been recommended (Crenshaw 1987). Even if the osteochondroma by pressure had deformed and hollowed out the fibula, the distal tibiofibular ligaments were normal and the ankle joint was stable directly after the operation, as well as at reexamination. There was a gradual remodeling of the fibula, most in the youngest patient with an open physis, but also to some extent after closure of the distal fibular physis. Postoperatively, the growth of the distal tibial physis was normal in both patients in whom they were open at surgery. A distal lateral osteochondroma deforming the fibula thus should be removed as early as possible through an anterior incision without any osteotomy of the fibula.

Reference

- Crenshaw A H. Campbell's Operative Orthopaedics. C. V. Mosby Co, Washington 1987: 756-9.