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Ankle stability without the lateral malleolus—a report of 2 cases

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Submitted 96-05-14. Accepted 96-09-17

Case 1

A 30-year-old man fell out of his motorboat and the screw of his outboard engine hit his left ankle, resulting in a 10 × 20 cm open wound, with large skinflap on the lateral side of the ankle. The lateral malleolus had disappeared (Figure 1). The talus was uncovered but the peroneal tendons were intact. In spite of the pain, the plantar and dorsal flexions were normal and stability was remarkably good.

After debridement, the wound was closed. The ankle was immobilized in a below-knee leg cast. For 5 days i.v. antibiotics were given.

After 1 week, partial weight bearing was started, with a below-knee walking cast. The skinflap became necrotic and complete secondary healing of the wound took several months. After 2 years, the patient had problems only with sport activities. The lateral stability was comparable to that on the other side. Plantar flexion of the right ankle was 25° and 20° on the left. The dorsal flexion was 5° on both sides.

Case 2 (Bongers 1995)

A 14-year-old male cyclist, hit by a truck, sustained a large soft tissue and bone defect on the lateral side of the left ankle. At surgery, 8 cm of the distal fibula was missing. On the anterior side, however, part of the periost remained, to which the remaining parts of the lateral ligaments were sutured. There was little instability on the lateral side as compared to the right ankle. The ankle was immobilized with an external fixator from tibia to calcaneus.

The fixator was removed after 8 weeks and the ankle was further treated by means of a custom-made brace.

Figure 1. Case 1. AP view of the left ankle at the time of presentation.

Figure 2. Case 2. AP and lateral views of the left ankle after treatment for 1 year.

4 years after the accident the patient has function with a plantar flexion of 25° and a dorsal flexion of 5° on both sides.

Follow-up radiographs revealed calcification of the periosteal flap (Figure 2). Stress radiographs showed no difference in lateral stability between both ankles.

Discussion

Many authors report a major stabilizing role of the lateral ligaments, most importantly for the anterior tibio-fibular ligament (Lauge Hansen 1950, Weber 1966, Yde and Kristensen 1980, Ent 1984, Hawe et al. 1989, Broos and Bisschop 1991, Michelson et al. 1992, Ryd and Bengtson 1992). However, these are all studies of inversion-supination traumata, where there is always disruption of the anterior and posterior articular capsule due to the talar tilt. Rasmussen (1985) stated that, if the other ligaments are intact, the tibiofibular syndesmosis and the lateral ligaments play only a minor role in lateral stability of the ankle. In our cases, the lateral ligaments and the syndesmosis were absent or insufficient because of the trauma, yet the stability of the ankle was good. Moreover, considerable fibrosis developed at the site of the absent lateral malleolus and soft tissue, but it did not restrict mobility; the stability must have been brought about by the intact anterior and posterior articular capsule and the intact deltoid ligament.

Capanna et al. (1986) excised the lateral malleolus in 11 patients for a bone tumor. Reconstruction was performed by intertibiofibular arthrodesis, cortical grafting or suturing of the peroneal tendons to the lateral side of the tibia. Although in these cases the lateral part of the ankle was surgically removed, including most of the ligamentous structures, the function and stability remained satisfactory.

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Flexion contracture of fingers due to sarcoidosis—a case report

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Submitted 96-06-25. Accepted 96-09-16

A 63-year-old woman with sarcoidosis complained of a progressive painless flexion contracture of the right hand and foot since 1991. The flexor muscles of the right proximal forearm were indurated and the flexion deformity of the hand interfered with daily activities (Figure 1). The right proximal forearm was surgically explored. The flexor digitorum superficialis, profundus, and flexor carpi radialis and ulnaris were invaded by several yellowish-brown, firm elastic granulomas. There were also white thick firm stripes, approxi-