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Morton's metatarsalgia

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The author has examined and operated on 80 patients (68 females and 12 males) for Morton's metatarsalgia. They underwent 88 operations in 90 intermetatarsal spaces: 22 times between the metatarsal bones II–III, 66 times between III–IV and 2 times between IV–V. The diagnosis was based almost entirely on the history of illness. All operations were performed under local anaesthesia on the metatarsus, with 66 dorsal and 24 plantar incisions. The removed tissue was examined histologically in all cases, and the diagnosis was: 86 Morton's neuromas, 3 normal nerves and 1 vascular connective tissue. Macroscopically, 15 nerves looked normal.

Good results, were achieved in 75 of 80 patients. Those who failed to improve had dorsal incisions. Five had relapses from 3/4 year to 3 years after the first operation, and these patients had all had dorsal incisions. They were all successfully reoperated with plantar incisions, removing amputation neuromas and cutting the nerve higher up. With a dorsal incision it is not always possible to cut the nerve as far proximal as desirable, and a neuroma too far distally situated can develop. Thus plantar incision is recommended.

Second toe transfer in thumb reconstruction

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The first 6 second toe transfer operations for thumb reconstruction performed in Norway are reported. The functional disability and disfiguration of the foot after removal of the toe were insignificant. One of the transferred toes became necrotic because of venous thrombosis. The vascularization of the other 5 toes was successful. The mobility of the toe joints was limited, but a good total range of motion was obtained as the carpometacarpal joint of the thumb was normal in all 5 successful cases. The sensory recovery of the transferred toes was quite acceptable for the patients' daily activities. We conclude that the second toe is suitable for thumb reconstruction.

Leg laceration treated with a free forearm flap

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The forearm flap, first described by Chinese surgeons, is a fasciocutaneous flap deriving its blood supply from perforating vessels of the radial artery, which ramify on the superficial surface of the deep fascia via the lateral intermuscular septum. The merits of this flap – whether islanded or free – have been reported in several recent papers. We have successfully treated one patient with subtotal amputation and severe laceration of the left leg with the free forearm flap. The patient was a 31-year-old man who was hit by a train. The upper arm was amputated subtotally. Because of severe crushing, including damage to the brachial plexus, the arm could not be reimplanted. The left leg was subtotally amputated and severely crushed. The only intact structures

were the achilles tendon, the posterior tibial artery and the tibial nerve. When the patient arrived at the hospital, no circulation of the left foot was seen. After reduction of the fractures the arterial circulation was restored, but no veins were intact. Most of the skin and underlying tissue of the anterior aspect of the leg were crushed and devitalized. After osteosynthesis we made a forearm flap out of the amputate which measured 12 × 25 cm. Proximally the brachial artery was anastomosed to the anterior tibial artery. Distally the radial artery was anastomosed to the dorsal artery of the foot. The ulnar artery was ligated. The superficial veins of the flap were anastomosed to superficial veins of the leg proximally and distally, thus draining venously both the foot and the flap. Four months after the operation the leg is covered by skin of full thickness, and the extremely comminuted leg fracture is healing.

Lengthening osteotomies in the metaphysis and diaphysis. An experimental study in the ovine tibia

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Lengthening osteotomies were performed in the diaphysis or proximal metaphysis of the right tibia in 20 eight-month-old sheep. By means of distraction at a rate of 1 mm/day a lengthening of 12.5 ± 2.4% was obtained. The animals were sacrificed 4 weeks after lengthening had been discontinued. At this time solid bony union was confirmed on radiographs in 18 animals. The elongated bones were tested mechanically with the contralateral tibia as a control.

Radiographically, periosteal bone formation seemed to be the most important component of bone healing in the diaphyseal group. In the metaphyseal group the predominant osteogenetic response appeared to be from the endosteum.

Compared to the control side, the ultimate torsional strength of the elongated tibia was on average about 50 per cent in both the metaphyseal and the diaphyseal group. No significant difference was found between the two groups.