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Myoplastic transmetatarsal amputation of the foot

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During 1971 to 1990 fifty-nine transmetatarsal amputations were performed on 48 patients in our Hospital. The indication was infection and/or gangrene in a diabetic foot (28 feet), arteriosclerotic gangrene (8), deformities of the forefoot in patients with rheumatoid arthritis (13 feet in 8 patients), malignant tumors (2), trauma (2) and miscellaneous (6). The median age at the time of the operation was 58 (33–81) years.

At the time of the study 13 feet were lost to follow-up because of reamputation, and 14 feet because the patients had died. The remaining 32 feet were included in the study.

All the patients expressed satisfaction with the results as only one had walking pain and most of them had satisfactory walking function. Three patients with diabetes had plantar ulcers and 4 patients had callosities on the stump.

Conclusion: Transmetatarsal amputation of the foot is a good solution in cases with destruction or severe deformities of the forefoot. It is well-accepted by the patients, the walking desability is moderate and usual footwear can be used.

Development of malignancy at the fistula in chronic osteomyelitis in the foot

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Development of malignancy in chronic osteomyelitis is rare and in large studies estimated to 0.5%. The most common localisation is the femur, the tibia and the foot, but it can be found anywhere in the skeleton. The predominant cancer type is epidermoid carcinoma, but an adenocarcinoma, fibrocarcinoma or a basic cell carcinoma has also been described.

During the period 1982 to 1990 four cases were recorded at the Department of Orthopedic Surgery, Odense Hospital in Denmark. Two patients developed malignancy in the foot, one in tibia and one in the femur. In all cases amputation was carried out, and all patients are still alive without any sign of recurrence 1–8 years post-operatively.

Combined wedge and displacement osteotomy for hallux valgus

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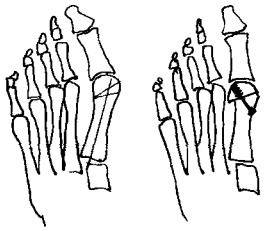
In 1983 Lindgren and Turan introduced a distal oblique osteotomy with lateral displacement for treatment of hallux valgus. However, as the hallux valgus angle is mechanically not changed, the authors decided to combine this method with a wedge osteotomy (Reverdin). The aim of this study was to evaluate the results of the combined method.

73 osteotomies (60 patients) were performed during 1982 to 1986. The mean age at surgery was 44 (17–71) years. The indication for surgery was pain during walking and exercise, shoes problems and hallux valgus deformity. The method includes bunionectomy, wedge osteotomy and lateral and plantar displacement of the distal fragment. Fixation was undertaken with a 4.0-mm cancellous AO-screw. No cast but a fluffy dressing was used with the great toe in abduction. Full weight bearing was allowed. At 6 weeks a radiographic and clinical evaluation was performed, and between 6–9 years post-operatively a questionnaire was sent to the patients concerning pain, shoe problems and general function.

At 6 weeks all osteotomies had healed an there was no infection. The mean hallux angle was clearly decreased to 8°. One patient has been reoperated 6 months post-operatively because of metatarsalgia. A more plantar displacement of the distal fragment was performed and the

postoperative period was successful. 54 patients (66 feet) have answered the questionnaire. Among these no or mild pain was reported in 57 feet, slight pain in 7 feet and severe pain in 2 feet. No shoe problems were reported in 36 feet, slight problems in 27 feet and severe problems in 3 feet. The general opinion from the patients was excellent in 39 feet, good in 25 feet and poor in 3 feet.



Conclusion: This combined method seemed promising with less than 5% of the patients beeing dissatisfied. The combined technique can be recommended in treatment of hallux valgus.

The stabilizing effect of a semi-rigid ankle orthosis on the calcaneal motions during adduction test

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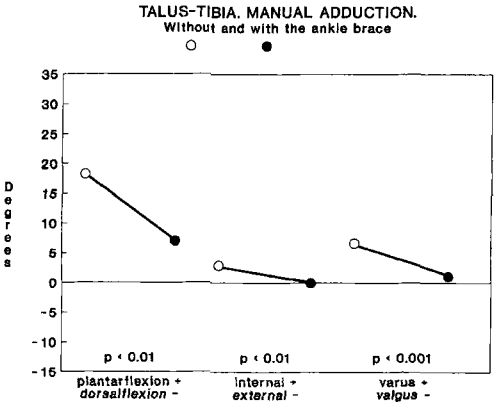
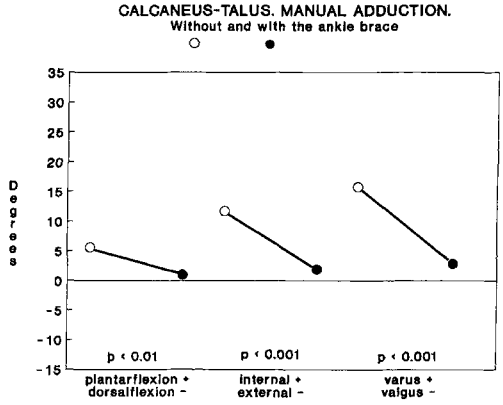
Studies on the stabilizing effect of semi-rigid orthoses on the talcrural and subtalar joint are rare. The study was initiated to measure the influence of a semi-rigid ankle orthosis on the three dimensional motions of the talus and the calcaneus.

14 ankles in 13 patients with symptoms of chronic lateral instability of the ankle were included. Talar motions in relation to the tibia and calcaneal motions in relation to the talus





were measured using roentgen stereophotogrammetric analysis during adduction tests (manually and with a predetermined torque). The test were carried out without and with a Strong® ankle orthosis, custommade in a thermo-plastic material. As statistic was used the student's t-test for paired observations.

The varus angulation of the talus (6.2°–0.9°) and calcaneus (14.6°–2.4°) was significantly reduced by the orthosis at both test procedures as well as the plantarflexion and internal rotation during the manual tests.

Conclusion: The ankle orthosis provide enough mechanical support to prevent acute and recurrent sprains and may be used to protect ligament reconstructions.

Avascular necrosis of the first metatarsal head after Chevron osteotomy shown by ^{99m}Tc-MDP scintigraphy

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Introduction: Distal osteotomies of the first metatarsal such as chevron osteotomies are often used for the correction of metatarsus primus varus. It has been suggested that there is increased risk for avascular necrosis 4–40%) of the distal-fragment due to capsular stripping and to the transection of the circulatory apparatus of the neck, especially when combined with adductortenotomy. In a prospective, randomized study, early Tc-MDP scintigraphy was used to investigate the frequency of avascular necrosis.

Patients and methods: 41 patients (44 feet) scheduled for hallux valgus surgery where early postoperative scans could be obtained were preoperatively randomized to Chevron osteotomy with or without adductortenotomy. 36 patients (39 feet) are included in the followup. They were reviewed with radiographs and clinical evaluation at 6–8 weeks and at a minimum of 1 year (average 19 months); a scan was

obtained 2–12 days postoperatively and if there was a defect, after ca 3 weeks.

Results: An early cold scan was found in 4 feet: in 3 of the 18 operated by chevron osteotomy only, and in 1 of 21 operated with chevron osteotomy and adductortenotomy. The difference is not significant. No defect was seen in the second scan at 3 weeks. Only one patient was dissatisfied with the operation. No complaints in the series could be directly attributed to avascular necrosis. Radiographs could not confirm the diagnosis of avascular necrosis made by early cold scan. Late radiographs show uneventful healing in all cases.

Conlusion: The rate of avascular necrosis of the first metatarsal head after distal osteotomy is not negligible, although it appears that that adductor tenotomy does not increase the risk. Patients whose scans indicate vascular impairement initially appear to be asymptomatic. Radiological evaluation is not reliable in diagnosing limited circulatory impairment.

Treatment of fracture-dislocations of the tarsometatarsal joint

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Introduction: Because of the risk of chronic disability, fracture-dislocations in the tarsometatarsal joint, often with subtle radiological signs, must be identified and treated. The aim of our study is to evaluate the clinical outcome of anatomical reduction, and analyse the effect of operative vs conservative treatment.

Material and methods: 45 consecutive injuries from 1975–1988 in the Lund district were studied. A questionnaire concerning recovery time and disability was sent to all patients. All could be radiographically classified at the time of injury. 40 patients (one with bilateral injuries) replied. There were 25 men and 15 women with an average age of 33 (15–75) years at the time of injury. All types of trauma were represented from stumbles to traffic accidents and fall from heights. The average follow-up was 5 (0.5–13) years.

Results: The fracture-dislocations were classified according to Quénu and Kuss. Of the 30 fracture-dislocations, 22 were treated by open reduction and K-wire fixation. Anatomical reduction was achieved in 14 cases; 11 fractures without dislocation were treated conservatively.

A correlation was found between treatment and the extent of the injury as shown by dislocation and residual disability. Of the nine patients (1 bilateral) with less than anatomical reduction, 5 received full disability pension, only one had no complaints.

Only one patient with anatomical reduction received full pension, but 13 of 31 had some remaining disability.

Conclusion: Five of six patients with total disability had been less than anatomically reduced. Of ten unreduced injuries, six had some form of disability. Best results are obtained by prompt anatomical reduction and fixation with K-wires. Even then, in our series, five of fifteen patients considered satisfactorily reduced as well as three of the eleven with no initial dislocation had pain and disability. Possible explanations are cartilage-joint injury at the time of the trauma, soft tissue damage and subsequent fibrosis, joint instability, or minor subluxation not apparent on radiographs.

Interpositioned subhallux sesamoid as obstacle to reduction of interphalangeal joint dislocation

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A case of dorsal luxation of the interphalangeal joint (IP joint) of the great toe where an interpositioned sesamoid made closed reduction impossible, lead the authors to a litterature review on the frequency of sesamoids in this joint, and previosly published case reports.

Case report: A 18-year old male presented with a dorsal luxation of the IP joint. Closed reduction failed, radiography showing a wide joint space, interposition of a 5 mm sesamoid and dorsal subluxation. On open reduction via a medial incision, the plantar plate with the sesamoid imbedded was found displaced into the joint. Reposition and suturing of the plantar plate resulted in a stable, reduced joint, immobilized by K-wires for 4 weeks.

One year postoperatively, the patient was without complaints and with only 15° deficiency of plantar flexion.

Discussion: The IP sesamoid is a 3–5 mm nodulus located deep in the plantar plate, histologically fibrocartilaginosis in different stages of ossification and with articular surfaces to both phalanges. It might cause plantar hyperkeratoses.

Literature on the sesamoid is sparse. The frequency varies from 5% to 96%, but plain radiographs reveal only half of existing sesamoids. Yanklowitz (1975) reported 2.5 times higher frequency in women and only 6% unilateral. Only 35 cases of luxation in this joint with interposition are reported. Mechanism of injury is forceful hyperextension. Recommended treatment is open reduction and suturing of the plantar plate. Postoperatively external fixation for 3–4 weeks is considered sufficient.