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The value of MRI-scanning and ultrasonography in the diagnosis of Morton's neuralgia—a preliminary report

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Morton's metatarsalgia, while often a clearcut diagnosis, can in its early stages at times present with diffuse symptomatology. Some diagnostic success has been shown in the use of ultrasound. MRI has also revealed neuromas.

In attempting to find objective criteria before operating, we have done a series of MRI and ultrasound investigations and correlated them to the macroscopic findings at surgery and to the histologic diagnosis.

Patients: All patients operated for Morton's neuralgia during 1992 who had at least one of the two diagnostic procedures done were included. A total of 11 patients were investigated. 9 had both MRI and ultrasound; 1 had only MRI; 1 had only ultrasound. In all but 2, the clinical diagnosis was confirmed at surgery, and supported by the histologic investigation.

Methods: A small coil nuclear magnetic resonance imager was used, and a small linear transducer was used for the ultrasonography.

Results: Six MRI investigations showed evidence of attenuation changes which could be attributed to a neuroma or a bursa; of these 5 were confirmed and one was negative at surgery. 4 were negative for neuroma; 3 of these subsequently showed a neuroma at surgery. 5 ultrasounds of the 10 done were positive for a neuroma; of these, 4 were confirmed at surgery, one was negative. 3 showed no pathology in one of the modalities; at surgery, a neuroma or bursa were found in 2 cases. In two cases, both MRI and ultrasound were negative, but a bursa and neuroma, respectively, were found at surgery; in one case a 10 mm bursa was seen both on MRI and ultrasound, but could not be found at surgery.

Conclusion: We have not found that MRI or ultrasonography have aided us in diagnosing Morton's neuralgia or excluding it as a diagnosis. False negative MRI and ultrasound seem to be common, but false positives infrequent, thus giving high specificity, but low sensitivity. Training might improve diagnostic accuracy. There is at present too little positive correlation to be able to recommend these diagnostic procedures in routine clinical practice.

Availability and predictive value of distal blood pressure measurements in diabetic patients with foot ulcer requiring amputation

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Purpose: The study was undertaken to evaluate the role of ankle and toe blood pressure measurements with regard to amputation level selection in patients with diabetes and foot ulcer.

Patients and methods: In a prospective series, 161 consecutively presenting patients, with diabetes and foot ulcer undergoing amputation, were investigated. Distal blood pressures wer measured with strain-gauge or Doppler techniques. The patients were pre- and postoperatively treated by a multidisciplinary foot care team on an out-patient basis except for surgery or complications and followed to a final result by the same team.

Results: Either ankle or toe blood-pressure measurement were available in 86% of the cases. Incompressible arteries, ulcer or gangrene at the measuring site, previous amputation, poor general condition, and an emergency situation were factors that precluded standardized ankle and toe blood-pressure measurements in 24 and 27% of the cases, respectively. A minor amputation was never sufficient to achieve healing if the ankle pressure was below 50 mmHg and very rarely at an ankle pressure below 75 mmHg or a toe pressure below 15 mmHg.

Conclusion: At low levels of distal blood pressure a minor amputation was seldom sufficient. At higher pressure levels, these methods alone had no predictive value in this respect. The role of other parameters that might be used in conjunction with distal blood pressure measurements in order to provide more reliable guidelines for amputation-level selection in this group of patients, requires further studies.

Resection of the calcaneus in Haglund's heel

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Patients and methods: 29 patients consecutively operated on for Haglund's heel were investigated. All 26 patients who were recalled attended for a clinical and radiographic examination a median of 26 (8–70) months postoperatively. There were 19 women and 7 men with a median age of 20 (15–43) years. A bilateral resection was done in 12 patients, and 38 heels were thus examined. Visual analog scales were used to evaluate subjective symptoms.

Results: Patients considered the result excellent after 28 of the initial operations. Five heels were reoperated on with an excellent final result in further three cases. Relief of the original symptoms was independent of the size of the resection. New complaints were noted in 23 heels. These were trivial in 13 cases. A serious complication was, however, stiffness in the achilles tendon or ankle region. This occurred in 9 of 18 heels where large resections had been performed, but only in 2 of 20 heels with small resections ($p < 0.02$). Postoperatively the 18 patients who were employed had been out of work for a median of 3 (1–99) weeks. 14 cases did not tolerate normal shoes for 6 weeks and 6 cases could not participate in all usual activities for 6 months after surgery.

Conclusion: In spite of a relatively long rehabilitation and a high frequency of new complaints, patients felt that in 32 instances the overall result was satisfactory and they would have undergone the operation even if they had known the outcome in advance.

Staple fixation in Mitchell's osteotomy for hallux valgus—a follow-up of 61 cases

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Since September 1988, staple fixation of Mitchell's osteotomies has been used at our department to avoid postoperative immobilization in plaster of Paris. Median 24 (11–38) months after surgery the results were evaluated in 60 patients.

Material and methods: 61 feet in 60 patients, median age 38 (14–65) years, were operated on by 16 different surgeons. Median hospitalization was 2 (1–4) days. The patients were seen in the out-patient clinic after 2 and 12 weeks. Median sickleave was 14 (2–109) days.

The osteotomy was fixed with 2 staples (13–16 x 10 mm) inserted dorso-medially over the osteotomy using a powered stapler. Postoperatively the patients were mobilized on heelshoes during two weeks whereafter they were allowed full weight bearing.

Results: After two weeks, 27 patients were able to stand freely upon the operated foot, another 29 patients had slight discomfort but no pain. At 12 weeks normal gait was seen in 50 patients while 7 indicated a slight discomfort but no pain. No dislocations were seen and 60 of 61 osteotomies healed. At follow-up one patient had been reoperated on due to a pseudarthrosis and in four other patients the staples had been removed because of protrusion under the skin. In 51 of 61 cases, the patients found the results excellent or good. 5 patients found the correction insufficient and 5 patients had complaints of daily metatarsalgia or hallux rigidus.

Conclusion: Fixation of Mitchell's osteotomy with staples reduces external immobilization and enables early weight bearing.

Arthroscopic ankle arthrodesis

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Material and methods: Four patients with severe rheumatic deformation of the talocrural joint were operated on with arthrodesis of the ankle. The operation was performed with arthroscopic technique described by Meyersson. Intraoperative distraction was applied with external fixator and abrasion arthroplasty was carried out with a 4.2 mm burr, partial synovectomy was added when necessary. Only two anterior portals were necessary. Under compression and fluoroscopic control, internal fixation was performed of the arthrodesis percutaneously. External splinting was not applied in these cases.

Results: The mean operation time was 180 minutes. All arthrodeses had healed at 3 months. The joint malalignment was corrected successfully.

Discussion: This method is new in Scandinavia although there is experience abroad. We have found this technique applicable mainly in patients with rheumatoid arthritis with an increased risk for complications due to bad skin conditions. However, the technique is potentially useful in posttraumatic ankle arthrodesis as well.

Radiographic results after conservative versus operative treatment of dislocated intraarticular fractures of calcaneus

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The purpose of the investigation was to assess the radiographic results after conservative versus operative treatment of dislocated intraarticular fractures of calcaneus.

Patients: In 1977–79, all patients with dislocated intraarticular fractures of calcaneus in the Copenhagen area were asked to participate in a randomized trial. The operative group was treated with reduction and fixation with Steinmann pins through calcaneus followed by a PTB-bandage for 12 weeks. Radiographic examination was performed postoperatively, after 6 and 12 weeks, and at follow-up. Only patients with a unilateral fracture and no previous fracture of calcaneus were included in the analysis.

Results: 68 patients (35 conservative and 33 operative) fulfilled the criteria for participating in the trial. 52 (26 conservative and 26 operative) were followed median 80 weeks after the fracture. Operative treatment significantly improved the degree of dislocation and Böhler's angle. After 80 weeks, radiographic signs of subtalar arthrosis was found in 12 conservatively and 12 operatively treated patients.

Conclusion: Operative treatment of dislocated, intraarticular fractures of calcaneus improve the radiographic position of the bone, however, it has no effect on the incidence of arthrosis after 80 weeks.

Clinical results after conservative versus operative treatment of dislocated intraarticular fractures of calcaneus

Henrik Chrintz and Stig Sonne-Holm

Department of Orthopedics, Hvidovre University Hospital, Denmark

The purpose of the investigation was to assess the clinical results after conservative versus operative treatment of dislocated intraarticular fractures of calcaneus.

Patients: In 1977–79, all patients with dislocated intraarticular fractures of calcaneus in the Copenhagen area were asked to participate in a randomized trial. The conservative group was treated with a PTB-bandage for 12 weeks. The operative group was treated with reduction and fixation with a Steinmann pin through calcaneus and talus followed by a PTB-bandage for 12 weeks. Only patients with a unilateral fracture and no previous fracture of calcaneus were included in the analysis.

Results: 68 patients fulfilled the criteria for participating in the trial. 52 (26 conservative and 26 operative) were followed median 80 weeks after the fracture. No difference between the groups could be shown concerning pain, working capacity, activity in leisure time, working ability, tenderness on palpation or movement of the joints, or duration of hospitalization. Valgus deformity of the heel was only found in conservatively treated patients.

Conclusion: Operative treatment of fractures of calcaneus has no effect on the clinical results 80 weeks after the operation.

Grice subtalar arthrodesis—a review of 131 operations

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A retrospective study of subtalar, extraarticular arthrodesis in 83 patients with cerebral palsy (CP) or meningomyelocele (MMC) was carried out.

In the CP-group, 68 feet were operated in 42 patients with a mean age of 9.5 years without complications. The results were evaluated after a mean observation period of 4.5 years. All transplants but one healed, and the result was satisfactory in 54, acceptable in 9 and poor in 5 feet.

In the MMC-group of predominately L4, L5, and S1-affection, 63 feet were operated in 41 patients with a mean age of 8 years and the results evaluated after a mean observation period of 6.5 years. The transplants healed in 56 feet whilst a pseudarthrosis occurred in 7. The result was satisfactory in 56 feet, acceptable in 3 and poor in 4 feet.

One patient sustained necrosis of the talus and a subsequent physeolysis in the distal tibia. Since Grice arthrodesis may be compromised by ankle valgus, preoperative bracing may be considered.

Conclusion: Grice arthrodesis in this material led to a good functional result in 110/131 feet (84%). The operation may be recommended for children with CP or MMC conditioned valgus deformities.

Results of surgical treatment of fasciitis plantaris

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Plantar fasciitis is a syndrome of pain and tenderness at the plantar aspect of the heel. Conservative treatment is usually effective, but resistant cases have been treated with surgery. We report a survey of 51 patients treated with division of the plantar fascia combined with excision of the calcaneal spur.

Patients and methods: The median age of the patients (7 men, 44 women) was 44 (16–64) years, and the median follow-up was 9 (0.5–17) years. The median preoperative duration of symptoms was 2.5 (0.5–28) years, and conservative treatment mainly consisted of an average of four local injections of corticosteroids. Two of the patients were active runners and 14 were joggers, whereas the remaining patients had no sports activities. In 37 preoperative radiographs, a calcaneal spur was seen.

Results: At the follow-up examination, a normal foot was seen in 28 cases whereas 6 cases had flatfeet, 6 hallux valgus; 11 plantar callosities, and 1 plantar fibromatosis. Some tenderness on palpation over the calcaneal tuberosity was found in 11 cases. The radiographs revealed 26 calcaneal spurs. The spur had recurred after excision in 7 cases. The result was

excellent (no pain) in 31 cases, good in 19 cases, and poor in 1 case.

Conclusion: Division of the plantar fascia with or without excision of the calcaneal spur is a good method for treating cases with plantar fasciitis resistant to conservative therapy, and the good results seem to be permanent.

Akropodion and footwear

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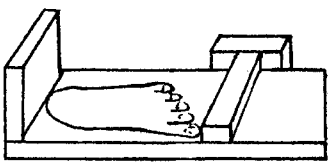
Introduction: Akropodion, the point of the foot, is the anthropological term for the most prominent part of the forefoot. Footwear over thousands of years has been made to protect the foot against wear, tear and cold. But footwear has also unfortunately been influenced by fashion, which has nothing to do with the anatomy of the foot. Among other things sharp pointed shoes, where the point of the shoe is in front of the third toe, have undoubtedly contributed to foot deformities.

Material, methods and results: In 1970, the author investigated akropodion in 237 Ethiopians and found that the big toe was the akropodion in 222 (93%), the second toe in 8 (4%), and in 7 (3%) the first and second toe were equally prominent. In Norway, 66 women and 60 men were examined and akropodion determined in 230 feet. The big toe was akropodion in 184 feet (80%), the second toe in 26 (11%) and in 20 (9%) the first and second toe were equally prominent.

Conclusion: Manufacturers of footwear ought to take this into consideration when making shoes. Women who, apart from hallux rigidus, represent 86 percent of forefoot problems, ought to think more about healthy feet than fashion.



Chiropody training in Sweden and the European community

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The European Community aims to create a common market for goods, services, capital and labour. The Treaty of Rome makes it easier for young people from one member state to study or practice in another. This implies mutual recognition of the different countries' training courses. The EC project ERASMUS is working towards standardization of education and qualifications in member countries

As can be seen in the table below, training in chiropody after completion of upper secondary school varies widely in different countries. In the table, the following theoretical subjects are included: pharmacology and general medicine, surgery, orthopedics, skin diseases, chiropody theory, sports medicine, social studies, and research methodology and project work and medical-care subjects.

Country	Years	Total hours	Theory	%	Practice	%
Belgium	3 1/2	3,500	2,205	63	1,295	37
France	3 1/2	3,500	1,400	40	2,100	60
Denmark	1 1/2	2,000	720	36	1,280	64
Finland	1 1/2	2,000	1,400	70	600	30
Sweden	1/2	750	337	45	413	55

In Sweden, only completed comprehensive school and auxiliary-nurse training is required to attend State chiropody training.

One cannot just look at the total training time but must also compare the contents of the training courses. Different countries give priority to different subjects. Chiropody training, above all in Sweden, should be expanded and given increased depth to bring it closer to the training of other countries and to eventually reach the level of the intentions of the Treaty of Rome.