A meeting of the British Orthopaedic Foot Surgery Society was held at Bristol on November 12, 1993, as part of a Combined Meeting with the Japanese Society for Surgery of the Foot, with Mr. I. G. Wimbo and Professor Y. Takakura in the chair.

**REVISION ARTRODESIS OF THE FIRST METATARSOPHALANGEAL JOINT FOLLOWING PRIMARY ARTHROPLASTY FOR HALLUX VALGUS**

D. J. McBride and E. G. Anderson (Glasgow).

In a previously reported prospective series, 314 primary metatarsophalangeal joint fusions were carried out on 298 patients, with an average age of 50 years. The complications included wound infection, delayed union, and caseous foot deformity in 16 feet, and conversion to metatarsal alloys in 12 feet. The average rate of symptomatic nonunion was 3.2% (seven cases from 187, 6%). The secondary procedures were carried out under general anesthetic, using conical liscia bone grafts and crossed Kirschner wire fixation. This operation resulted in an asymptomatic and clinical union in all cases by three months, with resolution of all symptoms and an improvement in the examination findings. The technique appeared to be useful as a salvage procedure in such patients.

**LONG TERM CHANGES IN SEASAMOID POSITION AFTER KELLER'S ARTHROPLASTY AND FIRST METATARSOPHALANGEAL ARTRODESIS**

J. P. Ivory, R. Makin, H. Parmer and P. J. Gregg (Leicester).

A prospective trial of surgical management in abductor transfer with painful first metatarsophalangeal joints was undertaken and a comparison of the changes in the position of the sesamoid on standing radiographs five years after surgery by two operations was made. The position of the lateral sesamoid was measured relative to the base and to the longitudinal axis of the first metatarsal and the measurements were shown to be reproducible.

The sesamoid was found to move medially by 2mm following Keller's arthroplasty (p = 0.001) but not so after arthrodesis. There was no significant movement of the sesamoid either proximally or distally after either operation.

It has been supposed that following Keller's procedure, the sesamoid moves proximally due to release of its distal insertion (0.6%). It has been proposed that after arthrodesis, the adductor hallucis pulls the sesamoid laterally into the foot by pulling the whole first ray towards the midline of the foot. These concepts were not supported by the findings.

**JONES TRANSFER TO THE LESSER RAYS IN METATARSALGIA**

T. Mulier and G. Deweyzekeker (Laureen, Belgium).

Lateral metatarsalgia had various cases, such as excessive length of the central metatarsal and heel digit, and an excessively vertical alignment of the bones. It has been shown that various cases of metatarsal pain in adults. Displacing the junction of the metatarsals in adult with the ground was the object of transferring the external tendons to the metatarsal heads.

Thirty-three operations were performed on 20 patients with metatarsalgia. After clear toes and depressed metatarsal heads, all cases improved with Jones' transfer to the lesser rays for metatarsalgia in adults. Displacing the junction of the metatarsals in adult with the ground was the object of transferring the external tendons to the metatarsal heads.

The operation involved transfer of the long extensor tendon around the lateral metatarsal heads, combined with proximal interphalangeal joint fusion, shortening the middle three digits.

Forty-one, the results were excellent in 25 feet (76%), fair in 5 feet (15%), and poor in three feet (9%). The worst group selected proved to be that with severe spread foot (three of six feet good, 50%, and two poor, 33%). Forty-two feet did well, with 10 excellent (8%) and two fair (11%). There were complications in six cases (15%), including three cases of stress fracture (9%).

**INTRA-ARTICULAR CALCANEAL FRACTURES IN CHILDREN**

P. C. Thomas and H. S. Cassley (Liverpool).

Six children with pain intra-articular calcaneal fractures were reviewed. There were five boys and one girl, with an age range nine years to 13 years. The right heel was injured in five patients, with bilateral injury, all injuries were closed and sustained in falls from heights, typically 3 to 5m, with the heels being shaken. Seventeen 1m. Associated injury occurred in two patients.

Five fractures were treated by open reduction and internal fixation, using plate and screws in three cases and Kirschner wires in three cases. One fracture required bone grafting. All operated cases had progressive CT scans and the procedures were performed 5 to 11 days after injury. There were no postoperative complications and in particular, no wound problems.

One fracture was managed conservatively by immobilization in plaster. Range of movement, heel width, pain, walking distance and ability to cross uneven ground were assessed at a mean of 28 months (range 4 to 60 months).

The six operated feet, four (67%) were considered to have excellent results and two poor. The poor results were in the bimalleolar case. The foot treated conservatively needed subtalar fusion for pain relief.

On review of the English Literature there appeared to be no reports or follow-up studies with combined combined reduction fractures in children. This small series demonstrated that an early open reduction of calcaneal fractures in children. This small series demonstrated that an early open reduction of calcaneal fractures in children. This small series demonstrated that an early open reduction of calcaneal fractures in children.

**THE ANATOMY OF THE DELTOID LIGAMENT AND IERI CORRELATION IN RELATION TO TIBIALS POSTERIOR INCOMPETENCY**

M. H. Jahn (New York).

The anatomy of the deltoide ligament complex was studied in 12 cadaver specimens by dissections and stress radiographs, combined with sequential sectioning of the deltoid components. The resulting data were correlated with prior studies of patients exhibiting chronic deltoid insufficiency after long-standing bilateral posterior tendon rupture, using stress radiographs. The specimens were patients who had had: no surgery, repair of bilateral posterior patellar articular surfaces.

The deltoid complex acts as a passive restraining force to midfoot distraction, flattening of the longitudinal arch, external rotation of the foot and lateral partial supination. This complex is intimately bound together, both anatomically and functionally. It includes not only the superficial and deep parts of the deltoid ligament, but the spring ligaments, the sheaths of the medial ankle ligaments, and the capsule of the talocalcaneal joint, the sustentaculum and the medial collateral ligament of the medial side of the posterior talocalcaneal joint. Dysfunction of the most powerful active medial stabilizer, the tibialis posterior, leads to gradual elongation and incompetence of the deltoid complex.

The findings indicated that chronic deltoid insufficiency resulted progressively in degenerative changes, arthrofibrosis, anterior ankle instability, medial ankle instability, anterior ankle ligamentous damage and ultimately ankle osteoarthritis. The pictures were of progressive worsening of the deformity about each six months over a 3 to 5 year period. Anatomically all the deltoid complex functioned as a unit, rather than having individual portions assigned separate functional constraints.

**RESULTS OF TOTAL ANKLE REPLACEMENT**

Y. Takakura, Y. Tanaka, T. Kumai, T. Takakura, K. Akibumi and S. Same (Nara, Japan).

A total of 39 ankles of 32 patients had total ankle arthroplasty from 1975 to 1992. There were 62 women (67 ankles) and 20 men (22). Of these, 45 patients (48 joints) were age 65 years had osteoarthritis; 33 patients (35 ankles) aged 58 years had rheumatoid arthritis and five (3 ankles) aged 44 years suffered haemophilic arthropathy. Before 1980, replacement was performed on 39 ankles of 28 people, using a metal and polyethylene prosthesis with cement. After 1981, ten patients had been operated on (two revision and five arthrodeses). Loosening and sinking of the device were seen in all patients by five years after operation. Since 1980, 58 joints of 55 patients were replaced with a ceramic prosthesis, 12 with cement and later cases without, the tibial component was held with a screw and the tibia by a rod, the laminates being coated with hydroxyapatite and bone marrow. At a follow-up of one to 11 years (mean 4.6 years) 8% of operations were successful. Four ankles had been reoperated, one revision and three fusions.

A clear zone on radiographs was seen around the components of uncoated prostheses, but this gap was not seen with the ceramic plus hydroxyapatite plus marrow combination.

If the primary fixation and alignment are correct, ceramic ankle replacement provides good and stable results.

**PATHOGENESIS OF CONGENITAL IDIOPATHIC CLUB FOOT**

P. J. NEUROPHYSIOLOGICAL ANALYSIS WITH SOMATOSENSORY EVOKED POTENTIALS Y. Iizuma, E. Michels, S. Suzuki and S. Sato (Tokyo, Japan).

A number of theories have been presented to explain the etiology of idiopathic congenital club foot, but the cause of the deformity remains unknown. This study aimed to clarify the matter by studying somatosensory evoked potentials (SEP). The SEP response to tibial nerve stimulation at the ankle was recorded in 13 normal children.
and in 11 with unilateral club foot. SEP were recorded from surface electrodes placed over twelfth thoracics and second cervical spine processes from and C1 and C2 and above.

In the normal group, the response over T12 and C2 consisted of two positive-negative waves (C2 positive, T12 negative). The latency of the response over T12 reflected peripheral nerve conduction, while that from T12 to C2 and above measured spinal cord and brain conduction times.

In the club foot group latencies of the SEP were compared on the affected and non-affected sides. The latency recorded on the T12, C7 and scalp electrodes were delayed on the affected side.

The club foot group was subdivided into four, based on the SEP response: (1) normal, (2) peripheral lesion, (3) spinal cord lesion, and (4) brain lesion. In most cases of congenital club foot abnormal SEP were recognized in the central nervous system, and the study suggested that this may be a factor in the pathogenesis of the disorder.

TWENTY-NINE CASES OF TALUS FRACTURES IN CHILDREN UNDER THE AGE OF TEN

S. Inoue, M. Kogawa, N. Uetsuk, T. Hashimoto, H. Hiraoka, T. Hashimoto and M. Miyake (Kojo, Japan).

Over a 14 year period, 29 cases of talus fractures in children under 10 years of age were found, with a high incidence of complications. The average age was 7 years, but the commonest was 8 years. There were 20 boys and nine girls, injured on swings or in road accidents.

In the talus fracture neck in 23 feet (79%), of Hawkins Type I in 17, Type II in 5 and Type III in one and the talus body in four (14%). No fracture was compound. Twenty-two cases (76%) had no significant displacement (<1mm) and were treated in a below-knee cast, not booting until Hawkins favourable sign appeared. Seven cases with displacement (>2mm) were operated on, with postoperative fusion with Kirschner wires, and with a postoperative cast.

In cases of avascular necrosis the bone was more rapidly and the talus dome did not collapse. However, the affected talus and foot remained smaller than their opposite fellow.

Overall results were graded 21 excellent (72%), seven good (24%) and one fair (3%). Only one had pain at follow-up. The extra procedure were required after primary treatment.

THE LONG-term RESULTS OF RESURFACING PROCEDURES


The authors reviewed the long term results of 23 patients (11 men and 12 women, average age 41 year) who had undergone resurfacing for loss of tissue from the planar facet. Anterior artrosis were trauma (13 cases) and surgical excision of soft tissue neoplasms (ten cases) and both clinical features and foot pressure were studied.

Eleven patients were treated by split skin grafts and one more with a full thickness free graft. The remaining nine had more complex repairs. Cases were classified as: Grade I - loss of skin, but not fat; Grade II - loss of skin and fat; Grade III - bony loss in addition. There were 14 patients in Grade II and II, of whom 11 had split skin grafts. Only two such split grafts suffered breakdown, but marginal hyperkeratosis was a problem.

On analysis of foot pressure, the operated foot exerted lower forces and had a statistically significant reduced area of contact compared with the opposite side. All patients were able to return to normal weight bearing, but the loss of sensation did not seem to preclude to bearing.

Ankle arthroscopy provided a safe and effective method of diagnosis and treatment with few complications.

With the leg hanging over the end of the table, without distraction, 20ml of saline was instilled. A 4mm arthroscope was inserted mediately and other instruments laterally.

Retrospective study of 75 ankle arthroscopies showed medial cartilaginous impingement between the medial corner of the talus and the anterior tip of the tibia in half the cases - such lesions were shaven. Synovitis was present in one half the cases and in some swelling of posterior synovial folds was seen and resected. Major osteochondral lesions and loose bodies were treated as usual.

These lesions were caused mostly by simple ankle sprain or chronic degenerative investigations, such as plan arthrogram, arthrography, CT scan, NMR and bone scan had given only vague indications of the underlying pathology. Arthroscopy provided not only a more accurate and direct diagnostic tool, but also the opportunity to treat the pathology.

Postoperatively, the procedure was more painful than after ankle arthroscopy. Tillet lesions did better than talor arthroscopies, but overall results were good in 80% with residual synovitis, no tenderness and full movement.

HIGH VELOCITY INJURIES TO THE TALUS

M. E. Rovey, R. Spencer-Jones, A. Bax, G. Varley and A. D. Greem (Douglas, island of Man).

Presented were 15 cases of high velocity injury to the talus among 14 patients treated on the island of Man since 1960. Thirteen injuries (12 patients) were sustained during high speed motorcycle crashes. The distribution of injuries and their management was as set out in Table 1 below.

One patient sustained bilateral talus fracture with an extruded talus body.

The mechanism seemed to be of hyperflexion of the foot as the foot rotated. Postoperatively the dome of the talus often was found to be fused, with cartilage loss.

As the injured were usually island visitors, follow-up was available on only seven cases (see Table II). At an average of 3 years, five are asymptomatic with a good range of motion with some pain and one has required a secondary subtalar fusion after avascular necrosis.

None of these fractures were isolated injuries. One patient died of his head injury. The finding of a talus fracture in a motor-cyclist was an indication that severe injuries elsewhere were likely.

Table I. Talus Injuries and their Treatment

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neck</td>
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<td>Conservative</td>
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<tr>
<td>Hawkins I</td>
<td>1</td>
<td>Closed manipulation</td>
</tr>
<tr>
<td>Hawkins II</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Hawkins III</td>
<td>6</td>
<td>Open reduction and fixation</td>
</tr>
<tr>
<td>Dome</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Body</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Neck I</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Extrusion body</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Table II. Outcome where the talus was retained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>No.</td>
<td>Treatment</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>-----------</td>
</tr>
<tr>
<td>Neck</td>
<td>1</td>
<td>Death assoc</td>
</tr>
<tr>
<td>Hawkins I</td>
<td>5</td>
<td>Lost to follow-up</td>
</tr>
<tr>
<td>Hawkins II</td>
<td>2</td>
<td>Good</td>
</tr>
<tr>
<td>Hawkins III</td>
<td>5</td>
<td>Open + screw</td>
</tr>
<tr>
<td>Dome</td>
<td>1</td>
<td>Good</td>
</tr>
</tbody>
</table>

CHANGES IN TIBIOTALAR CONTACT WITH CALCANEAL DESTRUCTION

A. C. Fairbank, P. Fortin, R. H. Jennisch and M. Myerson (Baltimore, USA).

The effect of calcaneus osteotomy on taloplnar joint contact patterns in normal and postoperative feet was investigated. Six fresh cadaveric ankles were excised sufficiently loaded with 700mm and the taloneural joint characteristics were quantified using Fiji Superpave pressure film. The foot was unconstrained and was loaded in neutral posture, in 10° dorsiflexion and 10° plantarflexion for each test sequence. Tibiotalar loading was performed both in a materials testing (Method 1) and manually using a customised jig (Method 2). The calcaneus was then performed and the calcaneus was translated medially or laterally in the ankle joint. Tibiofibular testing sequence was repeated. A flatfoot model was emulated by soft tissue section and all the above testing sequences performed again.

Images were analysed using a Biloquanto Video system for Method 1 and an Orthopaedic Stress Table for Method 2.

For Method 1 there was no difference in the quantitative tibialotalar joint contact characteristics, with the exception of all parameters evaluated with the foot in posterior-flexion (P<0.005). For Method 2 in the normal foot, a lateral translational osteotomy had no effect, but a medial osteotomy was associated with a change in tibiotalar contact (P=0.03). The flatfoot model (with Method 2) showed a qualitative shift of pressure laterally and a qualitative alteration of the contact area in all positions, when compared with the normal foot (P=0.06). A flat tibiotalar osteotomy significantly altered the contact area (P<0.001) and shifted it laterally.

As hindfoot alignment could affect tibiotalar joint characteristics, in the tibiotalar osteotomy might be a useful alternative to arthrodesis in cases of early tibiotalar arthritis secondary to severe varus or valgus foot deformity.

A CONTROLLED PROSPECTIVE TRIAL OF A BILATERAL FOOT ORTHOSES IN THE TREATMENT OF JUVENILE HALLUX VALGUS

T. E. Kilmartin, R. L. Bennington and W. A. Wallace (Bingley).

A survey of 6000 nine to ten year old children found 122 (see Table III) with either unilateral or bilateral hallux valgus exceeding 15°. 106 (87%) of the children were girls. Any child with systemic disease were excluded.

After standing radiographs had been taken, the children were allocated randomly to one of a non-treatment control group and a treatment group, where custom made biomechanical foot orthoses were worn for three years.

The orthosis was designed to control overpronation of the foot, on the premise that this posture would permit hypermobility of the first ray in an "outshaped" foot. No splintage was applied to the great toe itself.

Twenty-nine children were included, leaving 93 for study with a second standing radiographs taken at the end of the three year trial, which showed a decrease in the metatarsal head prominence in both the treatment and the control groups. The deterioration in hallux valgus was generally worse in the treatment group (Table IV).

It was concluded that this type of prosthesis was not useful in developing hip and extra-articular sites, but it has not previously been described applied to the developing foot. Conventional plain radiographs of the infant's foot are difficult to interpret in the body of bone unossified until the age of three years is not seen and the important talonavicular joint is not diagnostic to assess.

Ultrasoundography was carried out of 37 feet of 27 children aged between six weeks to 4 years. Ultrasoundography was performed using a 5 MHz high-frequency scanner. The following views were used in all children:

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medial exit, with the foramen abducted, which showed the front third of the tibia (where the osseous centre was not present with its carlineal margin), the navicular, the medial cuneiform and the first ray, and permitted measurement of the talonavicular (T.Nav.) and naviculocuneiform (M.Cun.) angles and displayed talonavicular joint congruency; the inferior coronal, allowing calculation of the coronal midsagittal index (CMFI); the posterior sagittal, which demonstrated the talus physis and epiphysis, the talus, the posterior subtalar joint, the calcaneum and the tendo Achilles, and allowed measurements of the heights of the bones for the clinical assessment ratio (Tib.Cr). The usual errors were, interobserver 8.2% and interobserver 8.3%. The following measurements were made: The Tib.Cr as the ratio of the distance of the distal tibial physis from the posterior corner of the calcaneum to the talus epiphyseal height; the CMFI as the ratio of the medial malleolar height to the width at the distal end of the cuboid and the angle between the long axes of talus, navicular and medial cuneiform (including also the talo-cuneiform angle, T.Cun.).

The results are laid out in Table V, where the readings represent respectively the mean value, the standard deviation and the significance of the difference from normal (NS = not significant).

Table V. Summary of the figures obtained

<table>
<thead>
<tr>
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<td>4.3</td>
<td>6.3</td>
<td>6.5</td>
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<td>CMFI</td>
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<td>0.51</td>
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<td>&lt; 0.05</td>
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<tr>
<td>T.Cun.</td>
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<td>198.5</td>
<td>182.3</td>
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<td>103.8</td>
<td>73.8</td>
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</table>

HALLUX RIGIDUS – A CASE AGAINST JOINT DESTRUCTION
V. Vazella, D. Zafiroglou, J. D. Jais and A. P. J. Henry (Derry).

A retrospective survey was carried out of 38 big toes of 29 patients with hallux rigidus, after each had had extension osteotomy of the base of the proximal phalanges, combined with excision of osteophytes from the first metatarsal head. Twenty-six patients were women (90%), the mean age was 50 years (range 32 to 76 years) and the average follow-up was nearly 5 years. Pain noted preoperatively was relieved in 20 toes (70%), improved in six toes and unchanged or worse in three. The feeling of stiffness perceived by the patients before operation was relieved in 19 toes (80%), improved in 14 (43%) and remained constant in five. Walking distance was better in all patients. Footprints showed full weight bearing on the hallux in all but two toes. The osteotomy had healed in all patients. Three patients developed superficial infection, but none had deep sepsis. Two had late recurrence of symptoms and one had to have reoperation.

This simple operation, which preserves the metatarsophalangeal joint, gave good pain relief and improved function. It seemed useful for the majority of great toes in hallux rigidus, where the prime problem was pain at the push-off stage of walking (rather than weight pain) and, unlike chondrolysis, preserves the whole of the contact surface of the joint. Further, it carries the advantage that subsequent salvage by arthrodesis or arthroplasty is available.

SLILACIC HEMI-REPLACEMENT FOR THE PAINFUL GREAT TOE
S. Aarup, R. Fitzgerald and H. H. Nsh (Glasgow).

Presented was a retrospective study of 108 single stem silastic replacements for the treatment of the painful first metatarsophalangeal joint of 84 patients with osteoarthritis, due either to hallux rigidus or to secondary degeneration in severe hallux valgus.

Careful clinical and radiological analysis was conducted at an average of six years (four to nine years) after the operation, at which time the mean age of the patients was 56 years.

Patient satisfaction and acceptances of the procedure was good (92%). Eighty-seven per cent obtained complete pain relief and definite cosmetic improvement. The arc of motion at the joint averaged 48° with good great toe function and normal take-off in the gait cycle.

Lumina around the prosthesis and erosion of the base of the prosthesis was seen and proved progressive (with an incidence in each of low and high). In each, less than six years and of 69% after six years), but was asymptomatic.

Five protheses required removal within two years of implantation due to persistent pain, but without demonstrable, due to atletic wear percalcia was absent, even in the longest surviving cases. Hallux exostosis was the complication most seen (15%) and was associated with prosthetic displacement.

Overall results were similar in both hallux rigidus and valgus. Patients over 60 years of age had superior results both subjectively and objectively.

Single stem silastic replacement seems still to offer an effective functional and cosmetic treatment, while removing pain from the arthritic great toe. The procedure could be recommended for patients aged 60 years or older with osteoarthritis mainly involving the proximal phalanx, with or without deformity of the great toe. Conversion to a Keller's first a double stem arthoplasty remained possible if needed.

PERCUTANEOUS ACHILLES TENDON LENGTHENING – A PROSPECTIVE TRIAL
D. T. Bresley and R. R. W. Walton (Blackburn).

A prospective trial of 28 percutaneous tendo Achilles lengthening in 17 children was undertaken. The mean age was eight years. The indication in 12 of the cases was cerebral palsy. The technique used was that of Hoke and Hart, in which the same percutaneous cut, the first laterally about 2.5 cm above the heel, a second mediolaterally, in each case cutting from the centre to the edge of the tendon. No suture or sutures were required and each lengthening took less than one minute, exclusive of the time taken to remove knee cast, which was retained for six weeks. Adequate correction was obtained without need for any additional open procedures.

Preoperative equinus deformity averaged 10° and postoperative dorsiflexion 9°, the mean improvement being 19°. The average story was two days. There were no wound or neurovascular complications; there was no case of inadequacy of or over correction; there was no case of transaction of the tendo Achilles.

This proved to be a rapid, minimally invasive method of tendo Achilles lengthening and was recommended as the method of choice in children.

A NEW DEVELOPMENT IN THE TECHNIQUE OF ARTHROSCOPIC ARTHRODESIS OF THE ANKLE
F. Bleday (Bournemouth).

Arthroscopy is a well established procedure in the management of osteoarthritis of the ankle. Open techniques have been hampered by a long postoperative recovery and have largely been confined to a number of unfruitful results. Arthroscopic arthrodese has been described and good results reported. One of the major difficulties has been in gaining access to the ankle joint space.

In a study of eight patients a new technique was described, using the conventional arthroscopic methods, but with the addition of a trans-medial-malleolar incision. This is cut with a 10mm trocar, placed horizontally, cutting the adjacent talus and talar surface. The portal provided access for instruments further to prepare the surfaces for arthrodesis and to place cancellous graft material. Fixation was crossed cannulated screws, passed down at 45° from the medial and anterolateral tibia into the talus.

All patients had short postoperative hospital stay, spent 5 to 12 weeks in a cast and went on to satisfactory fusion.

Arthroscopic arthrodese of the ankle was technically demanding, but had advantages in suitable patients, avoiding those with over 15° of valgus or varus deformity.

SEPSIS IN THE NEUROPATHIC DIABETIC FOOT

Infection in neuropathic foot has been viewed with pessimism and small vessel disease has been blamed. The authors believed that sepsis in neuropathic diabetic feet having present peripheral pulses was associated with septic vasculitis and not microangiopathy. Where there was good vascularity, infection could be controlled by elevation, antibiotics, selective surgery (limited debridement or digital amputation) and the wound allowed to heal by secondary intention.

There were 27 diabetic patients (15 men and 12 women) presenting with sepsis of the foot over a two year period. The mean age was 54 years (range 26 to 80 years). Seven patients had sepsis in ischemic feet and these required below knee amputations.

There were 20 patients presenting with diabetic neuropathy and discoloured toes (including six with gangrene), but all had palpable pulses and Doppler studies showed a pressure index of 0.9 or greater. In nine patients a discoloured toe was associated with a web space infection, in two with plantar space sepsis and in nine with plantar ulcers.

Bacteria, in multiple cultures, were grown from every toe, including staphylococcus (14), S. haemolyticus, streptococci (5), enterobacteria (3), anaerobes (3) proteus (2) and klebsiella.

All patients were treated with antibiotics and eight responded to this alone; five needed surgical drainage and seven required limited amputations. All wounds were left open to allow regular drainage and all healed by secondary intention.

Histology of the amputated specimens showed acute septic vasculitis of the digital arteries, with occlusion of the luminal and infiltration of the arterial wall by polymorphs, including phagocytic cells containing bacteria.

THE RHENHUEMIC HINDFOOT – AN AREA OF NEGLECT
R. M. Jerry and I. Stokke (Sheffield).

Much attention has been given to the problem of the postfoot in rheumatoid arthritis, but few studies have been directed to the incidence of hindfoot troubles.

One hundred consecutive patients with classical rheumatoid arthritis were studied. There were 80 women and 20 men, with a mean duration of disease of 11 years. Patients were graded according to functional capacity. Thirty-two patients had foot symptoms at the time of presentation of their disease and 79 of walking difficulty in 70 patients and was particularly troublesome in those who had had successful arthroplasty of hip or knee.

Hindfoot symptoms (in 81%) were as common as those of the toefoot (in 55%) and at least as severe.

Lateral hindfoot pain was associated with valgus deformity of the hindfoot. While midfoot deformity was common (65%), symptoms were rare (in 5%).

As hindfoot deformity was known to be progressive and a predictor of failure of forefoot surgery, it was stressed that early consideration needed to be given to its prevention.

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