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were followed up over a 2-year period. Bone ingrowth into the Tantalum was analyzed with Micro-CT in 3 suitable patients.

**Results:** All arthrodeses were fused clinically and radiologically after 3–4 months and no complications occurred. AOFAS-score increased from 32 to 74. The Micro-CT demonstrated bony trabeculae growing onto the Tantalum.

**Conclusion:** Tantalum thus proved to be a valuable and safe structural graft option for ankle- and hindfoot arthrodesis, exhibiting excellent fusion rate and stability, no donor site morbidity and a greater efficiency in the operating room than autograft.

FM 101

### Functional significance of first metatarso-phalangeal joint arthrodesis

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**Introduction:** Indications for arthrodesis of the first metatarso-phalangeal joint (MTP1) are commonly arthrosis (hallux rigidus), rheumatoid arthritis, failed hallux valgus surgery, severe hallux valgus, infectious arthritis, fractures and neuroarthropathies. Many reports focus on technical and radiological issues but few studies emphasize the functional outcome considering daily activities, sports and expectation of the patient.

**Method:** We retrospectively reviewed the patients who underwent MTP1-arthrodesis from 2002 to 2005 in our institution. Clinical and radiological results were assessed but we specially focussed on the functional outcome. Scoring systems used were the SF-12, EQ-5D, PASI, FFI and AOFAS (10 points given to MTP1 mobility) scales.

**Results:** 61 of 64 consecutive patients were evaluated. Female to male ratio was 49:15, mean age at surgery was 67 years, the average follow up was 29 month. Even if radiological consolidation was incomplete in 18 patients, all patients had a clinically stable and rigid arthrodesis. Mean AOFAS score was 87 (24–100) points at follow up. The FFI was 5.91% (0–66%). Patient satisfaction was excellent in 37 patients (60%), good in 18 (30%), fair in 5(8%) and poor in 1 (2%). EQ-5D was 0.7 (0.4–1). 40 patients (66%) estimated their cosmetic result as excellent, 15 (25%) as good, 4(6%) as fair and 2 (3%) as poor. 10 patients (16%) had no shoe wear limitation, 48 (79%) had to wear comfortable shoes and 3 (5%) needed orthopaedic wearing. Professionally 34 patients (56%) had better performances, 18 (26%) had no change and 9 (18%) had aggravation of their capacities but this was due to other health reasons. In sports, 16 patients (26%) had better performances, 35 patients (57%) no change and 10 (17%) were worse as consequence of other health problems for 7. Finally, 56 patients (92%) would recommend the operation and 5 (8%) would not. **Conclusion:** Experience of clinical practice suggests that the idea of fusing the first MTP joint is initially frequently disregarded by the patients because they fear to be limited by a rigid forefoot. Our results show, in fact, that this procedure can be proposed for numerous pathological situations with the perspective of good to excellent outcome in terms of function and quality of life in the majority of cases.

FM 102

### Total ankle replacement with the mobility implant: Clinical and radiographic results of 238 consecutive prostheses

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**Introduction:** Total ankle arthroplasty (TAA) evolved over the past decades. High failure rates and discouraging outcomes of first-generation implants severely restricted their use, but also led to the development of modern three-component implants, such as the Mobility total ankle replacement system. This study prospectively analyzed the clinical and radiographic results of the first 238 cases using the Mobility implant.

**Methods:** Between November 2003 and October 2007 we performed 238 primary TAAs in 231 patients (117 women) with a mean age of 62 ± 13 years (24 to 86 years). Diagnoses were posttraumatic ankle OA in 121 ankles, primary ankle OA in 74 ankles, rheumatoid arthritis in 36 ankles, and hemochromatosis in 7 ankles. All patients were prospectively followed-up yearly. All intraoperative and postoperative complications, revisions and failures were noted. Clinical outcomes were assessed using a visual analogue scale (VAS) for pain and the AOFAS hindfoot score. Radiographs were studied for component positions, the presence of radiolucencies, cysts and osteophytes, and for any evidence of loosening. The range of motion (ROM) was assessed on function x-rays.

**Results:** Complete follow-up data were available for 226 ankles (95%). The mean follow-up time was 2.9 ± 15 months (12 to 60 months). Four ankles failed (1.8%). Intraoperative complications occurred in 9 (3.8%) and postoperative complications in 19 ankles (8.4%). Surgical revisions were performed in 18 cases (8%). The VAS pain significantly improved from 7.7 ± 1.5 preoperatively to 1.7 ± 1.9 at last follow-up. AOFAS scores significantly improved from 48.2 ± 17.5 to 83.5 ± 14.0. Thirty-six percent of the ankles had a varus or valgus deformity preoperatively, a residual postoperative ankle malalignment was observed in 9 ankles (4%). Tibial radiolucencies were detected in 29% of the implants, talar lucencies were seen in 2.2%. Periprosthetic cysts occurred in 11 ankles (4.9%), mainly in the malleoli. None of the components appeared to be loose. Ankle flexion and extension significantly improved after surgery, the total ankle ROM improved from 19.9 ± 9.3° to 22.5 ± 8.4° (p < 0.001).

**Conclusion:** The short-term results of TAA using the Mobility implant are satisfactory. In particular the failure rate of 1.8% at 2.5 years after surgery is encouraging. Longer-term follow-up studies have to confirm the present findings.

FM 103

### Using step activity monitoring to assess ambulatory activity before and after total ankle arthroplasty

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**Introduction:** The aim of this study is to compare the walking activity of a cohort of individuals before and after total ankle arthroplasty (TAA).

**Methods:** Nineteen consecutive patients (ten males and nine females) with mean age of 58.72, selected for TAA between January and June 2006, were prospectively reviewed with the use of a dedicated ambulatory activity-monitoring device to assess their natural ambulatory activity. Patients were tested in the community for two weeks duration, one month prior to and at least eighteen months after surgery. The ambulatory parameters were assessed through measurement of the number of steps at different cadence, and the time spent walking at different walking paces. Data were analyzed by using specific statistical methods.

**Results:** This study revealed a significant improvement in the number of steps walked at normal cadence (b = 331.63, p = .00) and significantly reduced at low cadence (b = -402.52, p = .00) and medium cadence (b = -386.29, p = .00), before and after TAA. However, there are no significant different between two phases of assessment in term of time spent walking.

**Conclusion:** These quantitative data allow a clear comparative assessment of walking ability following TAR and demonstrates that this intervention improves patient's walking pace.

FM 104

### Primary subtalar arthrodesis for Sander Type IV calcaneus fractures

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**Introduction:** Sander type IV intra-articular calcaneus fractures remain a real challenge in traumatology practice. In most cases, evolution's subtalar joint is severe and rapid arthritis.

**Methods:** Between 2005 and 2009, 12 patients underwent primary subtalar arthrodesis associated with open reduction and internal fixation at the same surgical time in our Département. We analysed radiologically postoperative complications, bony consolidation time, anatomic axes and height of the hindfoot. Clinical evaluation was based on AOFAS score.

**Results:** No wound complication (necrosis/infection) was occurred. Radiologically bony consolidation was observed in all patients between 3 and 6 months postoperative. Two varus and 1 excessive valgus malunions were noticed. AOFAS score is under evaluation.

**Conclusion:** On the base of these preliminary study's results, primary subtalar arthrodesis seems a good therapeutical option in cases of these difficult fractures. Nevertheless, it's about a delicate intervention where attention has to be taken as far as it concerns the position of hindfoot in the frontal plane.