4:45 pm:

**Bipolar Fresh Osteochondral Allograft in the Ankle Joint: Does It Work?**

**Presenting:**
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**Summary:**
this work reports the results of 61 fresh osteochondral allograft transplanted at our institution

**Introduction:**
Post-traumatic arthritis of the ankle leads to severe functional limitation for the patient. Surgical treatment typically relies on arthrodesis or prosthetic arthroplasty. Arthrodesis provides satisfactory relief of pain but creates functional impairment and total ankle replacement showed contradictory results, especially in young active patients. The rationale of fresh osteochondral allografting is the transplantation of an intact functional unit as hyaline articular cartilage and subchondral bone into a diseased or damaged joint, resulting in a biologic substitution of the joint.

**Methods:**
From August 2004, 61 consecutive patients with an average age of 34.6 years (range 29-52), were operated for total ankle replacement with fresh osteochondral allograft. All patients were affected by end-stage ankle arthritis. Clinical and radiographic evaluation were performed preoperatively and at the established follow-up with AOFAS score and conventional X-ray, TC and RMN.

**Results:**
The mean AOFAS score improved from 27.2 ± 10.9 pre-operatively, to 69 ± 16.7 at 24 months of follow-up, and to 70.9 ± 18.2 at the final follow-up of 50.8 ±15.8 months (p<0.005). Overall 61 patients, only 9 underwent a revision of the graft. One year after surgery (range 12-15 months) all patients underwent hardware removal and a second look arthroscopy, that showed an intact regenerated cartilage layer. Samples obtained from the biopsy showed chondrocyte viability for more than 95%. Mid-term radiographic evaluation showed progression of the degenerative changes, even if there was no statistical relationship between the radiographic grade of arthritis at follow-up and the clinical outcomes.

**Conclusion:**
Fresh osteochondral allograft transplantation is an intriguing alternative to arthrodesis and prosthetic replacement in the treatment of ankle arthritis in young and active patients. Precise allograft sizing, stable and correct fit and fixation, and delayed weightbearing are key factors for a successful outcome. Nevertheless it is a technically demanding technique and a high percentage of complications and failures have been reported in literature. Further research regarding the immunological behaviour of transplanted
cartilage is needed in order to improve the results of osteochondral allografting.