Purpose:
Tibiotalar arthritis in the young, active patient is a debilitating condition with limited treatment options. Bipolar tibiotalar fresh osteochondral allograft (OCA) transplantation was conceived as a possible alternative to arthrodesis and arthroplasty. We report our experience with bipolar ankle OCA for tibiotalar joint arthritis.

Methods and Materials:
Between 1999 and 2008, we performed 88 bipolar ankle allografts in 84 patients. Eighty-six allografts (82 patients) had a minimum two-year follow-up. The mean age was 44 years (range 18-71) and 52% were male. Evaluation included frequency and type of reoperations, the Olerud-Molander Ankle Score, pain, function, and patient satisfaction. Radiographs were evaluated for graft healing, joint space narrowing, and graft collapse or fracture.

Results:
Mean follow-up was 5.3 years (range, 2-11 years). Thirty-six of 86 (42%) allografts had further surgery since implantation. Of the reoperations, 25 (29%) were graft-related and considered clinical failures (10 revision OCA, seven arthrodesis, six total ankle arthroplasty conversions, two below knee amputations) and 11 (13%) were not necessarily related to the graft (e.g., hardware removal, debridement, synovectomy, distraction). Survivorship of the OCA was 76% at five years and 44% at 10 years. The mean OMAS was 61 (range, 10-100) at follow-up. The majority of patients reported less pain (85%) and improved function (83%) after OCA transplantation, and 92% reported satisfaction with the procedure.

Conclusions:
Fresh bipolar ankle OCA for tibiotalar arthritis resulted in acceptable outcome in this difficult population, with the most patients having improved objective and subjective outcome measures. Subjective satisfaction was high in spite of the 29% clinical failure rate. Importantly, OCA failure did not limit further surgical options. We conclude that bipolar ankle allografting is a useful alternative in carefully selected patients with advanced tibiotalar arthritis.