Pediatric Osteochondral Defect Repair with Talar Allograft

Joseph Albright, DPM, AACFAS, Hayley Issue, DPM, AACFAS, Mark J. Mendezsohn, DPM, FACFAS

Statement of Purpose
Osteochondral defects, although uncommon, can be detrimental to a pediatric patient. In patients with large osteochondral defects greater than 1.5 cm², conservative management typically fails and surgical intervention can put patients at risk for early degenerative ankle arthritis.

Methodology and Procedure cont.
Either a medial or lateral pedicular osteotomy was created to gain access to the ankle joint. After adequate exposure was obtained, the defect was resected as a block utilizing a sagittal saw and straight osteotome. The resected block was then measured and sized to the fresh talar allograft to ensure the graft be press fit into the defect. Fixation was achieved utilizing two 4.0 cannulated headless screws parallel to the ankle joint. The talar allograft was left approximately 1 mm proud in order to allow for some subsidence with incorporation. The fibular or tibial osteotomy was then fixed. Post-operatively the patient was placed in a non-weight bearing cast for 3 weeks followed by partial weightbearing in a cam boot for 3 weeks, and weightbearing in a lace up AFO boot beginning around week 6. Serial radiographs were obtained to ensure graft incorporation at each post operative visit.

Results
Three patients with a mean age of 15 years (range fourteen to seventeen years) were included in this study. Average size of osteochondral defect for our patients was 156.3 mm². There were two medial and one lateral talus lesions. All talar allografts used in the study were fresh frozen and dewaxed prior to the procedure. Patients had 100% graft incorporation with radiographic evidence at an average of 8 weeks post operative. Mean VAS Pain score improved from 8 (range 7-9) to 2 (range 2-3).

Discussion
Patients had successful outcomes with complete graft incorporation and return to activity at an average of 3 months post operative. Patients experienced significantly less pain with activity. At their one year follow up, patients were able to return to their pre-injury activity level. El Rashidy et al reported on 38 cases of fresh talar allograft transplant for talar osteochondral defects. The mean follow up time was 38 months with the average AOFAS score improving from 52.3 to 78.8 and VAS score from 8.2 to 3.3. The authors reported 4 failed allografts, with an overall failure rate of 10.5%. Our results, in a limited case series, show favorable results utilizing talar allograft transplantation for repair of large osteochondral lesions of the shoulder of the talus in the pediatric population with no reported complications.

References