

Arthroscopic Treatment of Osteochondral Lesions of the Talus with Allograft Cartilage Matrix

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Category: Arthroscopy

Keywords: Arthroscopy, osteochondral, lesion, talus, allograft, cartilage, matrix.

Introduction/Purpose: The purpose of this study is to prospectively evaluate the clinical and radiographic outcomes of using allograft cartilage extracellular matrix (ECM) as an adjuvant when arthroscopically treating osteochondral lesions of the talar dome (OLT).

Methods: Between May 2012 and September 2014, 22 patients presented with an OLT amenable to arthroscopic surgery. All patients received an excision, micro-fracture, and injectable allograft cartilage ECM (BioCartilage, Arthrex, Naples, FL) at the OLT. Preoperative and postoperative function and pain was graded using the Foot and Ankle Ability Measures (FAAM) and a Visual Analog Scale (VAS) respectively. At 6 months from surgery, post-operative radiographs and computed tomography were assessed for osteochondral healing. Final radiographs were evaluated for OLT recurrence and ankle degenerative changes. Data regarding postoperative complications and revision surgeries were also recorded.

Results: All 22 patients that received arthroscopic treatment of their OLT with allograft cartilage ECM were evaluated with a mean follow-up time of 20.2 months. The mean FAAM score increased from 51.4 of 100 preoperatively to 87.3 of 100 at the time of final follow-up. The mean VAS pain score decreased from 8.1 of 10 preoperatively to 1.9 of 10 at final follow-up. These differences between pre-surgical and post-surgical functional and pain scoring are statistically significant ($P < 0.05$). At 6 months from surgery, two patients (9.1%) received CT scans that revealed incomplete chondral formation at their OLT. One of these patients was symptomatic from this and ultimately required revision surgical treatment, involving an ankle arthrotomy and osteochondral autograft plugs from the ipsilateral lateral distal femoral condyle, to achieve full talar chondral healing. At final follow-up, one patient (4.5%) developed symptomatic and radiographic ankle degenerative changes at 1 year from surgery.

Conclusion: Outcomes from arthroscopically treating OLTs with excision, micro-fracture, and application of allograft cartilage ECM has not been previously reported in the orthopaedic literature. This study demonstrates that using allograft cartilage ECM as an adjuvant to traditional ankle arthroscopic technique results in a high rate of improving ankle function and pain relief in patients with OLTs.

Foot & Ankle Orthopaedics, 1(1)
DOI: 10.1177/2473011416S00132
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