Biphasic Bioresorbable Scaffold (TruFit Plug®) for the Treatment of Osteochondral Lesions of Talus: 6- to 8-Year Follow-up

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Introduction/Purpose: The ideal treatment of osteochondral lesions of the talus (OLT) is debatable. The TruFit plug has been investigated as a potential treatment method for osteochondral defects. This is a biphasic scaffold designed to stimulate cartilage and subchondral bone formation. The purpose of this retrospective study was to investigate the long-term functional and MRI outcomes of the TruFit Plug for the treatment of OLT.

Methods: We evaluated 12 consecutive patients treated from March 2007 to April 2009 for OLT. Clinical examination included the American Orthopaedic Foot and Ankle Society (AOFAS) ankle score and the visual analog scale (VAS) for pain. MRI scans were obtained pre-treatment and at last follow-up. The Magnetic Resonance Observation of Cartilage Repair Tissue (MOCART) score was used to assess cartilage incorporation.

Results: Mean follow-up was 7.5 years (range, 6.5 to 8.7 years). The average age was of 38.6 years (range, 22 to 57 years). The sex ratio between males and females was 3:1 (9 males, 3 females). The mean AOFAS score improved from a preoperative score of 47.2 ± 10.7 to 84.4 ± 8 (p< 0.05). According to the postoperative AOFAS scores 1 case obtained excellent results, 9 were classified as good, and 2 were fair. VAS score improved from a preoperative value of 6.9 ± 1.4 points to 1.2 ± 1.1 points at last follow-up (p< 0.05). The MOCART score for cartilage repair tissue on postoperative MRI averaged 61.1 points (range, 25-85 points).

Conclusion: The long-term results suggest that the technique of Trufit Plug for OLT is safely and demonstrates good post-operative scores including improvement of pain and function, with discordant MRI results. However, randomized controlled clinical trials comparing TruFit Plug with an established treatment method are needed to improve synthetic biphasic implants as therapy for osteochondral lesions.