

Retrospective Analysis of Clinical Outcomes Following Surgical Autocart Treatment for Osteochondral Lesions of the Talus

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Introduction (*max 100 words*)*

Osteochondral lesions of the talus are common and challenging in orthopedics, leading to pain, swelling and reduced mobility. Research on the clinical outcomes of various cartilage repair techniques is limited in quality and evidence. Marrow stimulation, including ice-picking or transarticular drilling, is commonly employed as the standard technique due to its less invasive nature, cost-effectiveness, and simplicity. Recently, a one-step cartilage-autograft transfer technique known as minced cartilage implantation (MCI), has emerged. This article aims to comprehensively describe the entire surgical technique and to retrospectively analyze the clinical outcomes of Autocart in patients with an osteochondral lesion of the talus.

Material and methods (*max 150 words*)*:

Between September 2022 and September 2023, 11 patients underwent treatment for osteochondral lesions of the talus with Autocart (Arthrex, Munich, Germany) autologous minced cartilage transplantation. A detailed description of the surgical technique was provided. Clinical outcomes were evaluated, and patient demographics and clinical data were obtained through electronic medical record review. The nine-grid anatomical scheme described by Raikin et al was used to localize and characterize the osteochondral talar lesions on preoperative MRI or CT scans. Patient reported outcomes scores (PROMS), including the European Foot and Ankle Society Score (EFAS), Foot and Ankle Disability Index (FAOS), Numeric Pain Rating Scale (NRS) and EQ 5D were assessed at 3 months, 6 months and 1 year postoperative.

Results (*max 150 words*)*

The study included eleven patients, eight of whom were male. The average age was 36 years, with an average BMI of 27.4 kg/m². Nine of the lesions were located on the right side. Eight patients reported a history of acute traumatic events. The duration of symptoms ranged from 0.5 to 10 years. Six patients had previously undergone marrow stimulation procedures, and seven had received infiltrations as prior treatments. The mean size of the osteochondral lesion was

13,8 mm x 9,9 mm with an average area of 1,44 cm². The main localization was centromedial (zone 4, 45,5%). One patient had a large subchondral cyst, which was initially treated by filling the cyst with spongiosa autograft. No postoperative wound problems or infections were observed. One patient continued to complain of persistent stiffness and pain. Mean NRS at 12 months was 1.8 in rest and 3 while walking.

Discussion (*max 100 words*)*

Autocart Autologous Minced Cartilage Implantation (MCI) is a one-stage technique to repair osteochondral lesions of the talus. The majority of our patients exhibited favorable results, with improvements in both pain and function and no complications. Further investigation into individual patient characteristics and surgical nuances may provide further insights into optimizing outcomes. Despite this, our study underscores the promising potential of Autocart as a viable treatment option for osteochondral lesions of the talus. Continued research and larger-scale studies are warranted to validate these findings and further refine treatment strategies for this orthopedic condition.