

Bone Marrow Stimulation for Osteochondral Lesions of the Talus: Are Clinical Outcomes Maintained 10 Years Later? Park, Jae Han, et al. Am J Sports Med. 2021;49(5):1220-1226.

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Level of Evidence: 4

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Osteochondral lesions of the talus (OLTs) are a common etiology of chronic ankle pain seen in the podiatry clinic. Commonly these defects are repaired, replaced or treated with or without biological augmentation. Recently a systematic literature review reported that autologous chondrocyte implantation, autologous collagen and matrix induced chondrogenesis, retrograde drilling, and bone marrow stimulation (BMS) had no superiority over another. BMS is considered the first-line treatment for OLTs in which pluripotent mesenchymal stem cells repair the defect. This article's purpose was to determine long-term clinical results among patients following BMS for OLTs and to identify prognostic factors that affect long-term clinical outcomes.

This is a single center research study, retrospective review of OLTs who were treated with BMS from 2001 to 2008 with follow-up ≥ 10 years. Total of 341 ankles treated, 202 ankles (189 patients) accepted based off the criteria. Clinical failure was defined by revision surgery required. BMS procedure was performed via standardized arthroscopic manner. Repeated visual analog scale (VAS) for pain and American Orthopaedic Foot & Ankle Society (AOFAS) ankle-hindfoot score was assessed before the operation and afterwards 1,3, 6 and ≥ 10 years. Cox proportional hazard regression models were used to evaluate prognostic variables leading to revision surgery.

The mean follow-up period for these patients was 166.8 months (128.5-224.1). The mean lesion size was 105.32 mm² (19.75-322.79); 42 ankles (20.8%) had large lesions (≥ 150 mm²). VAS for pain improved from 7.11 \pm 1.73 preoperatively to 1.44 \pm 1.52, 1.46 \pm 1.57, 1.99 \pm 1.67 at 1,3 to 6, and greater than 10 years after BMS procedure. The mean AOFAS ankle-hindfoot score improved from 58.22 \pm 13.57 preoperatively to 86.88 \pm 10.61, 86.17 \pm 10.23, and 82.76 \pm 11.65 at 1, 3 to 6, and greater than 10 years after BMS procedure. The FOAS at the last subsequent follow up was 82.97 \pm 13.95 for pain, 81.81 \pm 14.64 for symptoms, 83.49 \pm 11.04 for activities of daily living, 79.34 \pm 11.61 for sports, and 78.71 \pm 12.42 for quality of life. Clinical failure was noted with 12 ankles after 53.5 months. Cox regression analysis found large lesions ≥ 150 mm²; $P = .014$) and obesity (body mass index (BMI) ≥ 25 ; $P = .009$) to be significantly associated with revision surgery after BMS procedures.

The authors concluded that arthroscopic BMS for treatment of OLTs resulted in satisfactory and appropriate clinical results in both short and long term postoperative periods (the latter being ≥ 10 years). Prognostic factors including large lesions ≥ 150 mm² and individuals with BMI ≥ 25 were associated with revision surgeries, however age was not a factor. This study also shows that patients continue to see a significant improvement of their symptoms ≥ 10 years concluding that BMS remain an appropriate first-line treatment.



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