Microfracture for Osteochondral Lesions of the Ankle: Outcome Analysis and Outcome Predictors of 105 Cases

Reference:

Scientific Literature Reviews

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Podiatric Relevance:
Surgical treatment of ankle osteochondral lesions can be a significant challenge. Various treatment options include chondroplasty, microfracture, and osteochondral & autologous chondrocyte transplantation, dependent upon lesion size and patient age. Factors influencing success of minimally invasive arthroscopic debridement are not well understood, but when not performed with subchondral bone stimulation, success rates are consistently low.

Methods:
Study subjects included one hundred five patients (73 males and 32 females) with osteochondral ankle injuries diagnosed by plain radiographs and magnetic resonance imaging. Inclusion criteria were: osteochondritis dissecans (OCD) lesions of 20 mm or less in diameter, and patients with OCD lesions greater than 20 mm, who refused more aggressive surgical treatment. The Berndt and Hardy classification system was used to grade all lesions. All subjects were queried documenting the duration of the symptoms and pain intensity during ADL’s and exercise. Conventional non-operative conservative therapy was attempted for at least 6 months on all patients. One surgeon performed all operative procedures. The size and location of each lesion was measured during surgery. Arthroscopic debridement and microfracture procedures were performed in each case. Post-operative management consisted of splinting with partial weight-bearing initially, followed by progression to full weight-bearing in a walking boot as tolerated. Follow-up was conducted at 6 weeks, 3 months, 6 months and 12 months. Pre-study multifactor criteria for “successful outcome” were applied in each case.

Results:
Patients were followed post-operatively for approximately 3-4 years. Intra-operative findings included medial talar lesions, lateral talar lesions, both, and global (talar & tibial) involvement. The effect of location was difficult to assess due to a much larger statistical finding for lesion size. All patients with lesions less than 15 mm had successful outcomes, but only 1 outcome was deemed successful in the greater than 15 mm lesion group. No single explanatory factor for successful outcomes could be identified. However, size, age, history of trauma, and presence of osteophytes appeared to influence outcomes.

Conclusions:
Unlike previous studies, these authors are of the opinion that the lesion size, not location, is a stronger predictor of successful surgical outcome. The choice of analytical methods and tests of significance is not well explained. Lesions were stratified as <5 mm, 5-15 mm, 15-20 mm, and <20 mm in descriptive tables. It is difficult to assess how many total lesions were 15 mm or greater. The use of linear and loglinear strategies appears weakly related to hypothesis testing.