Behandlungsstrategien bei osteochondralen Lasionen des Talus [Treatment strategies for osteochondral defects of the talar dome: a systematic review]

Struijs P A, Tol J L, Bossuyt P M, Schuman L, van Dijk C N

Authors' objectives
To compare the results of different treatment strategies for osteochondral defects of the talus.

Searching
MEDLINE (from 1966 to June 2000), EMBASE (from 1988 to May 2000), CINAHL (from 1982 to March 2000) and Current Contents (until June 2000) were searched. The keywords were provided in the review. There were no language restrictions. The reference lists of selected articles were also searched for additional studies.

Study selection
Study designs of evaluations included in the review
Only case reports were explicitly excluded from the review. The eligible studies had to have a follow-up of at least 6 months. The exact study designs of the included studies were not reported, but none of the studies randomised the patients to the treatment groups.

Specific interventions included in the review
The treatment strategies eligible for the study were non-operative treatment, excision alone, excision plus curettage, excision plus curettage plus drilling, retrograde drilling, cancellous bone grafting, fixation, and osteochondral transplantation. Studies that applied a mixture of different treatment approaches were excluded from the review.

In the included studies, the non-operative treatment comprised the restriction of (sporting) activities, with or without the use of non-steroidal anti-inflammatory drugs, or cast immobilisation for 3 weeks to 4 months. The operative treatment comprised open surgery or arthroscopy.

Participants included in the review
Patients with acute or chronic osteochondral defects of the talus, who were aged at least 18 years, were eligible for the review. The mean age of the included patients was 26.9 years, 65% were male (35% female), and 18% were military personnel. Forty-two percent of talar dome lesions were lateral and 56% were medial. A history of ankle trauma was reported in 76% of the participants: 93% of those with lateral dome lesions and 61% of those with medial lesions.

Outcomes assessed in the review
The inclusion criteria specified successful treatment, which was defined as an excellent or good result at follow-up. If the author did not label the success rate, the results were fitted into the score of Thompson and Loomer (see Other Publications of Related Interest no.1).

How were decisions on the relevance of primary studies made?
Two reviewers independently assessed the articles for inclusion. In case of disagreement, the opinion of a third independent reviewer was decisive. The assessment was blinded in order to prevent bias.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.
For all studies, the type of operation, length of follow-up, number of participants, age of participants, male-to-female ratio, study population (military or general), type of trauma, and number and percentage of excellent or good results were extracted.

For the non-operative treatment, details of the treatment, indication, duration and lesion (acute or chronic) were also extracted.

Methods of synthesis
How were the studies combined?
The results were summarised in a narrative synthesis and presented in three tables. The outcome compared was the number of excellent or good results among the total study results.

How were differences between studies investigated?
The review tabulated further details for non-operative treatments. The operative studies were grouped into results for excision alone, excision plus curettage, excision plus curettage plus drilling, retrograde drilling, cancellous bone grafting, osteochondral transplantation, and fixation. For the operative interventions, there was systematic differentiation between the results from open and arthroscopic procedures. Other differences between the studies in the review were not investigated.

Results of the review
Thirty-nine studies with 707 eligible patients were included in the review.

The average success rate of non-operative treatment was 45% (91 out of 201 patients; 14 studies).

The average success rate was highest (86%) for excision, curettage and drilling (234 out of 272 patients; 21 studies); excision alone and excision plus curettage showed success rates of 38% (15 out of 39 patients; 4 studies) and 76% (96 out of 126 patients; 10 studies), respectively.

Retrograde drilling had a success rate of 81% (13 out of 16 patients; 1 study), while cancellous bone grafting had a success rate of 85% (28 out of 33 patients; 2 studies). Osteochondral transplantation had a 100% success rate with successful treatment for all 9 patients in the study (1 study), but 5 patients reported adverse events. The success rate for fixation was 73% (8 out of 11 patients; 3 studies).

There was little difference between open and arthroscopic surgery.

Authors' conclusions
Non-operative treatment and excision alone cannot be recommended for the treatment of osteochondral defects of the talus. Excision, curettage and drilling produced a high percentage of good or excellent results.

CRD commentary
The systematic review addressed all possible treatments for osteochondral defects.

The authors searched several databases to find appropriate studies, but made no attempt to find unpublished studies, apart from searching references. The reliance on published material can introduce publication bias, thus potentially overestimating the positive effects of the treatment strategies. The review summarised the results of numerous studies, but most of the studies had very few participants. There were no details of the designs of the studies, which makes it difficult to evaluate the evidence. The authors did not mention that they assessed the validity of the included studies, but noted that only studies providing a detailed description of the treatments were selected. In addition, they only included the outcomes for patients where the treatment and the results were presented in sufficient detail. No further information was supplied which would make these decisions more transparent.

The review of the evidence was difficult to follow in places, as the abbreviations in the tables were not explained and
cross-references to studies were minimal. In addition, incongruities between the abstract and text occurred, probably
due to the prior publication that had been updated for the current review. The authors provided an easy way to compare
the studies, counting how many successes with each technique were reported in each study and adding up these
numbers. However, the different techniques were not compared directly within each study. When comparing different
treatments between studies, the different results can also be due to differences between the studies. In the current
review these differences concerned not only the samples and procedures, but also the outcome: the definition of an
excellent or good treatment result. The authors addressed this problem in the discussion and concluded that the poor
success rate for non-operative treatment and excision alone cannot be explained by heterogeneity between the studies.

Overall, the conclusions and the implications of the review seem justified until a better evidence base becomes
available.

**Implications of the review for practice and research**

Practice: The authors stated that non-operative treatment and excision alone cannot be recommended as treatments for
osteochondral defects of the talus.

Research: The authors stated that further randomised, controlled trials are required to compare different treatment
strategies directly with each other.

**Bibliographic details**

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Talus [Treatment strategies for osteochondral defects of the talar dome: a systematic review] Der Orthopade 2001;
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**Other publications of related interest**

1. Thompson JP, Loomer RL. Osteochondral lesions of the talus in a sports medicine clinic. A new radiographic
van Dijk CN. Treatment strategies in osteochondral defects of the talar dome: a systematic review. Foot Ankle Int

**Indexing Status**

Subject indexing assigned by NLM

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract
contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on
the reliability of the review and the conclusions drawn.