

Osteochondral Lesions of the Tibial Plafond and Ankle Instability With Ankle Cartilage Lesions: Proceedings of the International Consensus Meeting on Cartilage Repair of the Ankle

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2019 International Consensus Group on Cartilage Repair of the Ankle

Abstract

Background: An international consensus group of experts was convened to collaboratively advance toward consensus opinions based on the best available evidence on key topics within cartilage repair of the ankle. The purpose of this article is to present the consensus statements on osteochondral lesions of the tibial plafond (OLTP) and on ankle instability with ankle cartilage lesions developed at the 2019 International Consensus Meeting on Cartilage Repair of the Ankle.

Methods: Forty-three experts in cartilage repair of the ankle were convened and participated in a process based on the Delphi method of achieving consensus. Questions and statements were drafted within 4 working groups focusing on specific topics within cartilage repair of the ankle, after which a comprehensive literature review was performed and the available evidence for each statement was graded. Discussion and debate occurred in cases where statements were not agreed on in unanimous fashion within the working groups. A final vote was then held.

Results: A total of 11 statements on OLTP reached consensus. Four achieved unanimous support and 7 reached strong consensus (greater than 75% agreement). A total of 8 statements on ankle instability with ankle cartilage lesions reached consensus during the 2019 International Consensus Meeting on Cartilage Repair of the Ankle. One achieved unanimous support, and seven reached strong consensus (greater than 75% agreement).

Conclusion: These consensus statements may assist clinicians in the management of these difficult clinical pathologies.

Level of Evidence: Level V, mechanism-based reasoning.

Keywords: cartilage, osteochondral lesion, tibial plafond, ankle instability, ankle

Introduction

Osteochondral lesions of the tibial plafond (OLTP) represent a relatively rare pathology, and evidence regarding management is scant.^{1,2} Separately, concomitant ankle cartilage lesions may occur in up to 77% of chronic ankle instability cases, and controversy exists regarding optimal treatment protocols when these injuries present simultaneously.⁸

The purpose of this report is to present the results from the working groups on OLTP and ankle instability with concomitant ankle cartilage lesions from the 2019 International Consensus Meeting on Cartilage Repair of the Ankle.

Methods

Forty-three experts were convened to participate in the International Consensus Meeting on Cartilage Repair of the

Ankle in 2019 in Dublin, Ireland. This followed a previous initiative in Pittsburgh, the results of which were published in the July 2018 supplement of *Foot & Ankle International*. Our process has been described previously,⁴ with one addition to the current format: participants were asked to submit a list of consensus questions for consideration, which were incorporated and progressed within the Delphi format. This differed from our previous initiative where the questions were predefined.

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Results

OLTP

What is the appropriate terminology and acronym for a lesion occurring on the tibial side of the ankle? Osteochondral lesion of the tibial plafond, or OLTP.

100% (Unanimous)

What prognostic factors should be considered in the management of OLTP? (1) Lesion location, size and depth; (2) cystic lesions, (3) kissing lesions; and (4) hindfoot alignment.

100% (Unanimous)

In what cases can nonoperative treatment be considered for OLTP? (1) Asymptomatic lesions and (2) any nondisplaced lesion not previously managed nonoperatively.

91% (Strong Consensus)

In what cases can surgical treatment be considered for OLTP? (1) Symptomatic lesions, (2) lesions which demonstrate progression, (3) failed nonoperative treatment, (4) cystic lesions, and (5) persistent pain of >6 months' duration.

95% (Strong Consensus)

Can bone marrow stimulation be considered for OLTP? Non-cystic OLTP <10 mm in diameter and <3 mm in depth are appropriate for treatment with bone marrow stimulation.

93% (Strong Consensus)

Can whole tissue transplantation be considered in the treatment of OLTP? Large, cystic OLTP can be considered as indications for osteochondral autograft or allograft transplantation.

93% (Strong Consensus)

If whole tissue transplantation techniques are considered, how can the joint be accessed? A retrograde or limited osteotomy approach can be used for an autograft of allograft transplantation for an OLTP. Arthroscopy can be used for supplemental visualization.

100% (Unanimous)

How should kissing lesions be managed? Simultaneously with similar treatment principles applied for isolated lesions.

95% (Strong Consensus)

Can an osteotomy to offload the joint be considered for an OLTP? Yes, when there is lower limb malalignment of the tibia and/or hindfoot.

100% (Unanimous)

At what point can a salvage technique (eg, ankle fusion, replacement) be considered for an OLTP? (1) Large lesions, (2) lesions of significant depth, and (3) associated deformity.

93% (Strong Consensus)

By comparison to talar lesions, do expectations for rehabilitation and return to sports differ for OLTP? The prognosis concerning expectations for rehabilitation and return to sports for isolated OLTP is less likely when compared to isolated talar lesions.

77% (Strong Consensus)

Ankle Instability With Ankle Cartilage Lesions

What is the preferred conservative management strategy for ankle instability and a concomitant cartilage lesion? Functional rehabilitation. Nonsteroidal antiinflammatory drugs (NSAIDs) and/or an orthobiologic injection can be considered.

100% (Unanimous)

What is the optimal algorithm to delineate symptomatology associated with ankle instability and concomitant cartilage lesions? Patient history, physical examination, and imaging modalities can be utilized. Patients often present with a history of deep ankle pain and describe a feeling of "giving way." Joint line tenderness and the presence/absence of an effusion are important. Specific tests include the anterior drawer and talar tilt tests. Magnetic resonance imaging can be performed to evaluate the soft tissue structures, articular cartilage, and subchondral bone.

90% (Strong Consensus)

What prognostic factors should be considered in the setting of an ankle instability and concomitant cartilage lesion? (1) Lesion size, location, and grade; (2) BMI and other relevant demographics; (3) alignment; (4) frequency/severity of sprains; (5) history of prior surgery; and (6) symptom chronicity.

97% (Strong Consensus)

Can the treatment of an asymptomatic ankle cartilage lesion be considered in the setting of symptomatic ankle instability? An asymptomatic lesion in the setting of symptomatic ankle instability does not require treatment. Concern about deterioration of the cartilage lesion is not a reason to treat.

97% (Strong Consensus)

When should surgical intervention be performed for ankle instability with a concomitant symptomatic cartilage lesion? These should be managed simultaneously.

91% (Strong Consensus)

Are there scenarios in which only one pathology should be addressed?. Ankle instability with a concomitant symptomatic cartilage lesion can be addressed in a single operation in all cases. Functional instability usually does not require surgery.

88% (Strong Consensus)

What type of cartilage repair technique should be performed in the setting of concomitant ankle instability?. The cartilage lesion can be treated with the same repair/reconstruction technique as in isolation.

78% (Strong Consensus)

How should rehabilitation and return to sports be approached with ankle instability and concomitant cartilage lesions?. They are similar. The rate-limiting factor is usually the cartilage lesion. If the lesion is >1 cm, impact activities and shear stresses should be limited during the early rehabilitation period.

97% (Strong Consensus)

Discussion

Clinical studies evaluating the outcomes after treatment of OLTP are limited. A recent meta-analysis by Rikken et al⁷ evaluated 10 studies including 175 patients with OLTP treated surgically. It was found that the different surgical interventions yielded moderate to good clinical outcomes, with arthroscopic bone marrow stimulation being the most frequently used treatment strategy. Lee et al⁶ reported that return to sport outcomes are less favorable after bone marrow stimulation for an OLTP, with only 38% returning to mid- to high-impact activity after surgery. This is lower than rates of return to sport following bone marrow stimulation for osteochondral lesions of the talus (OLT), where 79–87% of patients returned to the same level of sport after OLT treatment.^{4,9}

Ankle instability and concomitant OLT should be treated if symptomatic and can be addressed simultaneously with favorable outcomes.^{3,10} Gregush and Ferkel³ evaluated 37 patients at a mean follow-up of 7.3 years following arthroscopic management of OLT and a modified Brostrom with good clinical outcomes. Yasui et al¹⁰ reported on 16 ankles treated simultaneously for lateral ankle instability and talar subchondral bone lesions with significant clinical improvements. Hua et al⁵ compared 50 ankles with chronic ankle instability to 31 ankles with chronic ankle instability and chondral injuries. Accompanying chondral injuries were associated with poorer surgical clinical outcomes.

Limitations associated with our process have been previously outlined.⁴ These consensus statements may assist clinicians in the management of these difficult clinical pathologies.

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