

Osteochondritis Dissecans of the Talus: Diagnosis and Treatment in Athletes

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KEYWORDS

• Osteochondral lesion • Talus • Osteochondritis dissecans • Osteochondral fracture

KEY POINTS

- Osteochondritis dissecans of the talus is a subset of osteochondral lesions of the talus that also includes osteochondral fractures, avascular necrosis, and degenerative arthritis.
- Immobilization along with activity and weight-bearing modifications remain the first line of treatment of symptomatic stable lesions.
- Retrograde drilling, with or without bone grafting, may be indicated for lesions with intact articular cartilage that have failed conservative treatment.
- Smaller lesions with articular cartilage disruption may do well with fragment excision and marrow stimulation.
- Larger lesions with articular cartilage loss or those that have failed fragment excision and marrow stimulation may be addressed with a variety of salvage procedures including osteochondral autografts, fresh osteochondral allografts, or chondrocyte reimplantation techniques.

INTRODUCTION

Osteochondral lesions of the talus (OLTs) have long perplexed physicians and patients alike. In 1737, Monro¹ first described loose osteochondral fragments within the ankle. König's² term, osteochondritis dissecans (OCD), was first applied to the ankle by Kappis³ in 1922. OCD of the talus is a subset of OLT that also includes osteochondral fractures, avascular necrosis, and degenerative arthritis.

Despite decades of treating osteochondral lesions, the causes remain elusive. Various hypotheses exist, including repetitive microtrauma, which may or may not disturb the talar vascularity, as well as nontraumatic causes of vascular disruption

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of the subchondral blood supply. Additionally, there is no consensus regarding the nomenclature. Various terms have been used, such as osteochondral lesion, OCD, osteochondral fracture, and transchondral talus fracture. In an attempt to standardize language for discussing OCD lesions, the Research in Osteochondritis Dissecans of the Knee (ROCK) Group⁴ has defined the term OCD as a focal, idiopathic alteration of subchondral bone with risk for instability and disruption of adjacent articular cartilage that may result in premature osteoarthritis.⁵ Advances in the diagnosis and management, due in large part to improved imaging modalities, have improved the care and management of these lesions as well as worked to lessen the confusion that exists in regard to them.

INCIDENCE

The exact incidence is unknown; however, a retrospective study among active military personnel estimated an incidence of 27 OLTs per 100,000 person years between 1998 and 2008.⁶ Chondral injury may occur in up to 50% of ankle instability episodes.⁷⁻¹⁰ Chondral injury may occur in up to 73% of ankle fractures. Fractures of talar body represent approximately 1% of all fractures in some incidence studies.^{11,12}

ANATOMY AND PATHOPHYSIOLOGY

Elias and colleagues¹³ mapped the talar dome into nine zones (Fig. 1) and found that most osteochondral lesions occurred in zone 4 and zone 6, and medial lesions tended to be deeper and occupy a larger surface area. Of note, this study did not distinguish

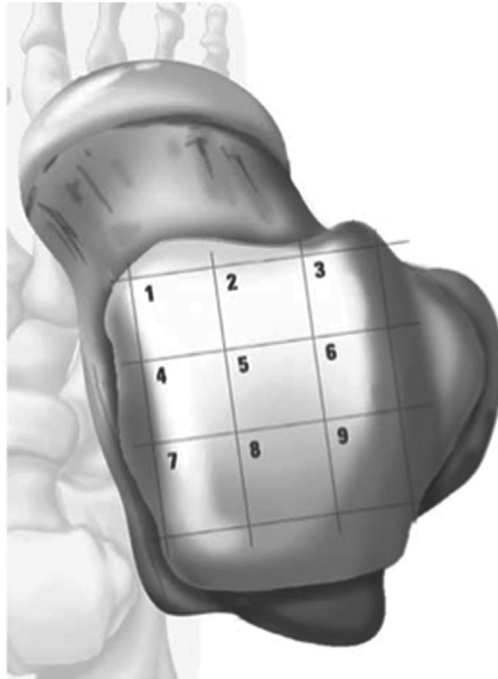


Fig. 1. Anatomic nine-zone grid scheme on the articular surface of the distal tibial plafond. Diagram shows the nine equal surface area zones, with zones 1, 4, and 7 positioned on the medial tibial plafond and zones 1, 2, and 3 positioned anteriorly.

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