

Arthroscopic Management of Osteochondral Lesions of the Talus



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KEYWORDS

- Osteochondral lesions • Talar dome lesion • Microfracture • Articular damage
- Ankle impingement

KEY POINTS

- Size of the osteochondral lesion seems to be the indicator of success. Small osteochondral lesions fair best with microfracture techniques.
- Microfracture technique involves perforating the subchondral plate 3 to 4 mm in depth and spaced 3 to 4 mm apart.
- Controversy exist with postoperative management of osteochondral lesions.

It is estimated that 1 in 10,000 people sustain an ankle injury every day, with the incidence as high as 9.35 in 10,000 in athletes during active competition.¹ Osteochondral fractures of the ankle are typically caused by traumatic injuries. Traumatic injuries have been reported to be associated with 70% of medial and 98% of lateral osteochondral lesions of the talus.² It has been reported that up to 50% of ankle sprains and 73% of ankle fractures can have associated osteochondral injuries.³⁻⁵ Given that cartilage has a poor tendency to heal because it is avascular, as the population continues to be more active, it can be assumed that osteochondral lesions will become more prevalent. Repetitive trauma can lead to further cartilage damage, with subsequent increasing size of the lesion ultimately leading to severe cartilage disorder and degenerative arthritis of the ankle.^{6,7}

In the acute setting with ankle injuries, osteochondral defect can often be overlooked because of similar symptoms of ankle sprains, such as ankle pain, swelling, and limited range of motion. Most typical ankle sprain symptoms resolve after about 4 to 6 weeks. With lingering symptoms, osteochondral injuries should be suspected. Chronic pain along the ankle joint, especially on the medial and lateral gutters, can be associated with osteochondral injuries. Clinical findings such as locking or clicking in the joint are typical but are not absolute in the presentation of osteochondral lesions.^{8,9}

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The treatment of osteochondral lesions depends on the characteristics of the lesions, such as the location, the depth, bone involvement, arthroscopic access, and cartilage involvement. Locations of osteochondral lesions have been studied extensively and both medial and lateral lesions are common. In their classic article, Berndt and Harty¹⁰ reported that the most common locations for osteochondral lesions were posterior-medial at 57% and anterior-lateral at 43%.

More recently, the locations of the common lesions described by Berndt and Harty¹⁰ have been challenged. Elias and colleagues¹¹ performed a study to evaluate the incidence of osteochondral lesions on the talar dome by location and by morphologic characteristics on MRI (Fig. 1). They established a novel, 9-zone anatomic grid system on the talar dome for an accurate depiction of lesion location. The 9 zones on the talar dome articular surface have an equal 3×3 grid configuration. Zone 1 was the most anterior and medial, zone 3 was anterior and lateral, zone 7 was most posterior and medial, and zone 9 was the most posterior and lateral. The grid was designed with all 9 zones being equal in surface area. Two observers reviewed MRI examinations of 428 ankles in 424 patients with reported osteochondral talar lesions. Frequency of involvement and size of lesion for each zone were recorded. The medial talar dome was more frequently involved at 62% compared with the lateral talar dome at 34%. In the anterior to posterior direction, the center of the talus was much more frequently involved at 80% than the anterior (6%) and posterior (14%). Center-medial was most common at 53% followed by center-lateral at 26%. Lesions in the medial third of the talar dome were significantly larger in surface area involvement and deeper than those at the lateral talar dome.

One of the most important factors is the quality of the bone and prognostic factors. Nakasa and colleagues¹² evaluated the relationship between arthroscopic findings

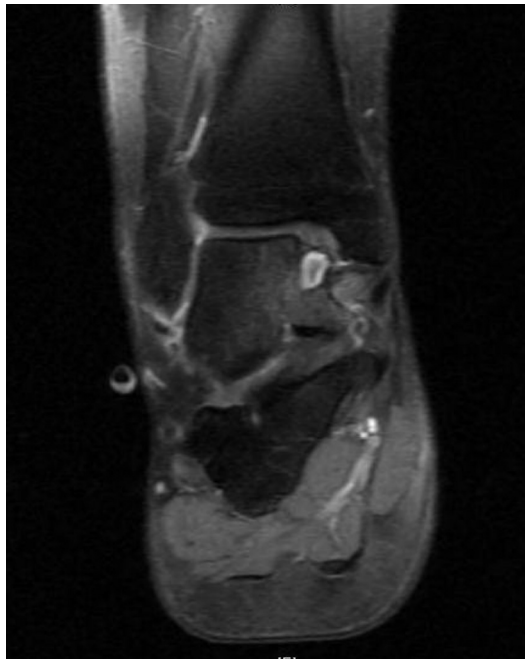


Fig. 1. MRI findings of osteochondral lesion with cystic changes and articular damage.

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