

Osteochondral Lesions: Medial Versus Lateral, Persistent Pain, Cartilage Restoration Options and Indications

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KEYWORDS

- Talus • Osteochondral • Cartilage • Lesion
- Repair • Restoration

Chronic giving way and ankle dysfunction are common after ankle sprains (**Table 1**). In a study involving young athletes in 1986, Smith and Reischl¹ reported in basketball players that 50% of the athletes have a dysfunction after sprain and 15% were affected in playing performance. In 1975, Staples² described 27% functional instability and 12% sport disability. According to the literature review³ of more than 100 articles on treatment of ankle sprains, there is a variable (0%–78%) incidence of dysfunction regardless of treatment type: cast, surgery, or functional. In our approach to chronic ankle pain and giving way, one must consider the differential diagnosis before treatment can be directed appropriately.

One of the common diagnoses associated with ankle injury is osteochondral lesions of the talus (OLT). Lippert and colleagues⁴ described a 7% incidence of osteochondral lesion after chronic ankle sprains in 962 patients. In 1955, Bosien and colleagues⁵ reported on a series of 133 patients; the incidence of osteochondral lesion was 6.7%. The results of acute ankle arthroscopy in a series of acute ankle sprains revealed a medial talar chondral lesion in 66% of cases (30 patients).⁶ The advent of MRI also has allowed us to make the diagnosis of occult lesions more readily. In

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Table 1 Results of arthroscopic debridement based on diagnosis			
Diagnosis	Procedure	2-Year Follow-up	P value
OLT	3.2 ± 3.1	7.8 ± 3.2	0.0002
Soft tissue impingement	4.3 ± 3.7	8.8 ± 3.4	0.02
Anterior bony impingement	3.1 ± 3.7	7.7 ± 3	0.008
Lateral plica	4.1 ± 2.1	8.7 ± 3.7	0.20
Postfracture scar	3.1 ± 3.3	5.3 ± 3.2	0.14
OA/chondromalacia	2.8 ± 3.3	4.3 ± 3.1	0.31
PVNS	3.7	3.6	NS
WCB	4.1 ± 3.7	4.3 ± 4.1	0.90

Abbreviation: OLT, osteochondral lesions of the talus.
From Amendola A, Petrik J, Webster-Bogaert S. Ankle arthroscopy: outcome in 79 consecutive patients. *Arthroscopy* 1996;12(5):565–73; with permission.

a retrospective study on 108 ankle sprains, Labovitz and Schweitzer⁷ looked at the incidence, location, pattern, and age of occult osseous injuries after ankle sprains. The MRI findings showed bone bruises in 39%. This article discusses OLT, treatment options, and resurfacing techniques.

DIAGNOSIS, INVESTIGATION, AND CLASSIFICATION

Stauffer and colleagues⁸ theorized on the correlation between inversion sprains and the increasing of forces applied on the talar dome. With anterior subluxation and inversion of the talus within the mortise, one can speculate how either anterolateral or posteromedial lesions could occur. The diagnosis of OLT is commonly missed on initial examination or radiographs. One must consider chronic pain, swelling, mechanical catching, and giving way possibly coming from an underlying chondral defect. Usually OLT is secondary to trauma, either after a single or repetitive event. The investigation for an OLT may include radiographs, CT scan, bone scan, and MRI to define the location, size, cartilage surface, and joint condition. Posteromedial or anterolateral locations are most common. The sensitivity of routine radiography is 50% to 75%, whereas pickup on bone scan is 99% sensitive. CT scan may be useful for bony anatomy and location of the lesion. MRI is indicated if radiographic results are normal; it may give information regarding vascularity, healing, and cartilage integrity.

In 1959, Bernt and Hardy⁹ classified OLT into four types according to radiographic findings. Canale and Belding¹⁰ classified the lesion into four different types according to the cartilage damage:

- Type I: cartilage intact
- Type II: partially detached
- Type III: complete separation in crater
- Type IV: completely displaced in joint

Anderson and colleagues¹¹ modified the Bernt and Hardy classification according to CT scan findings:

- Stage 1: subchondral compression
- Stage 2: incomplete separation
- Stage 2a: subchondral cyst

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