

DEBRIDEMENT AND BONE MARROW STIMULATION

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OSTEOCHONDRAL LESIONS OF THE ANKLE

BERNDT AND HARTY CLASSIFICATION

Stage 0	Marrow edema
Stage 1	Articular cartilage only
Stage 2	Osteochondral fragment not detached
Stage 3	Detached but nondisplaced osteochondral fragment
Stage 4	Detached and displaced osteochondral fragment

Arthroscopy and MRI have improved osteochondral ankle pathology diagnosis and management.

DIAGNOSIS OF OSTEOCHONDRAL LESIONS OF THE ANKLE

- Clinical evaluation
- Plain radiographs
- Magnetic Resonance Imaging (MRI)
- Computer Tomography (CT)
- Direct arthroscopy

TREATMENT INDICATIONS

Some authors base treatment strategy on the size of injury: lesions bigger than 1,5 cm² require a different surgery than Bone Marrow Stimulation (BMS).

Surgical treatment is reserved for lesions not responding to conservative measures and unstable lesions and mechanical symptoms.

SURGICAL OPTIONS

Since the 90's, the most used procedure was the excision with or without fibrocartilage growth stimulation techniques, such as:

- Microfractures
- Curettage
- Abrasion
- Transarticular drilling

Other surgical options include:

- Cancellous bone grafting

- Osteochondral transplantation through osteochondral autografts, allografts or cell culture

DEBRIDEMENT, MICROFRACTURES AND DRILLING

The actual indications for bone marrow stimulation techniques are:

- A lesion < 1,5 cm² with frayed cartilage
- Primary surgery
- Patient < 50 years old
- Traumatic etiology
- Lateral lesion
- Low body mass index (bmi)

These procedures are reserved for completely detached osteochondral fragments, when internal fixation is not possible.

They are all performed arthroscopically, stimulating bone marrow reparative properties through fibrocartilaginous formation over the defect, without an invasive approach.

DEBRIDEMENT

Arthroscopic debridement combined with drilling stands out as the best treatment for many authors.

If the cartilage is intact, a retrograde drilling of the subchondral bone is suggested.

Microfractures are a mini-invasive technique, with a short period of hospitalization, without thermal damage like abrasion or drilling.

Drilling and microfractures lead to different bone structure and necrosis during bone-marrow stimulation for cartilage repair.

Microfractures produce a more compacted bone around holes than microdrilling does

- Microfractures produce higher levels of osteocytes necrosis around holes than microdrilling does
- Arthroscopic treatment using bone marrow stimulation and debridement is, in most cases, a reasonable strategy to treat osteochondral lesions of the talus
- No differences in AOFAS AHS and SANE ratings

MICROPERFORATIONS

Microperforations are less invasive, with no thermal or tissue damage.

CONCLUSIONS

Debridement and microfractures:

- Not expensive
- Not invasive
- Effective
- Primary treatment for adults with advanced, symptomatic osteochondral defect of talus.