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Case Report

Posterosuperior Osteochondritis of the Calcaneus

Ramón Cugat, M.D., Ph.D., Xavier Cuscó, M.D., Montserrat García, M.D., Ph.D., Gonzalo Samitier, M.D., and Roberto Seijas, M.D.

Abstract: Osteochondritis of the posterosuperior area of the talocalcaneal surface is a relatively uncommon injury, and only 1 case has been described in the literature. We present a 37-year-old man who complained of pain in the tarsal canal area during walking and when standing up. The magnetic resonance imaging study showed an osteochondral signal in the posterosuperior medial area of the calcaneus on the talocalcaneal surface. The persistence of pain and lack of improvement with conservative treatment made arthroscopic debridement of the injury necessary. The arthroscopic procedure was performed through 2 medial portals, made under fluoroscopy, marked with needles, and dissected with mosquito clamps, and the affected surface could be fully visualized, showing a chondral lesion. Debridement of the osteonecrotic area was performed, and the Steadman technique was used on the injured bone surface. The patient was pain-free, and limited activity (i.e., standing up and walking without symptoms) was allowed. After 24 months, the patient remains asymptomatic with weight-bearing working activities and when standing. Arthroscopic curettage and scission of the injury have been shown to yield good or excellent outcomes in 75% to 80% of patients with regard to the talar surface. **Key Words:** Osteochondritis—Calcaneus—Subtalar—Debridement—Talocalcaneal surface—Articular cartilage.

Osteochondritis of the posterosuperior area of the talocalcaneal surface is a relatively uncommon injury, and only 1 case has been described in the literature.[1]

This study reports the case of a male patient who had pain in the tarsal canal area. After conservative treatment, the lesion was shown in the complementary examinations. It resolved after subtalar arthroscopic debridement was performed.

CASE

A 37-year-old man complained of pain in the tarsal canal area during walking and when standing up. The initial radiographic study did not reveal abnormal findings (Fig 1). The patient underwent conservative treatment with nonsteroidal anti-inflammatory drugs and rest. After partial improvement, he resumed his working activities, but when the symptoms became more acute, a scintigraphic imaging study was necessary (Fig 2), which showed hypersignal in the painful area, pointing to a subchondral injury. The study was completed with magnetic resonance imaging (Figs 3 and 4), which showed an osteochondral signal in the posterosuperior medial area of the calcaneus on the talocalcaneal surface. The persistence of pain and lack of improvement with conservative treatment made arthroscopic debridement of the injury necessary. The arthroscopic procedure was performed through 2 medial portals, and the affected surface could be fully visualized, showing a chondral lesion that was classified as a degree III/IV lesion according to Outerbridge[2] (Fig 5 and Table 1) and stage II according to Berndt and Harty[3] (Table 2). These medial portals were made under x-ray fluoroscopy,

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FIGURE 1. Radiologic images showing no abnormalities.

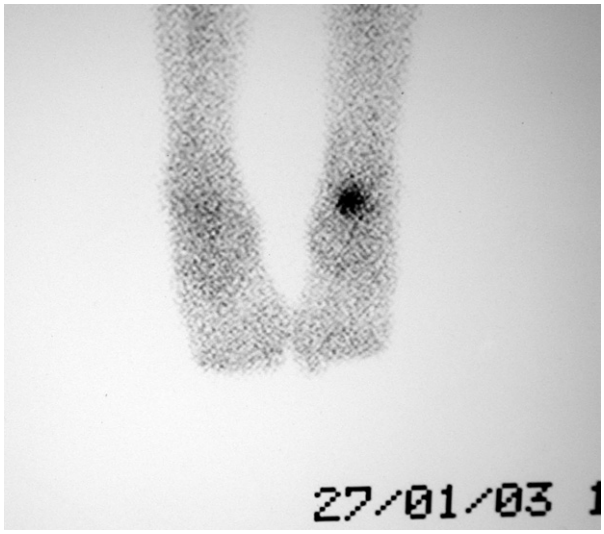

FIGURE 2. Scintigraphic image showing hypersignal in the painful area.

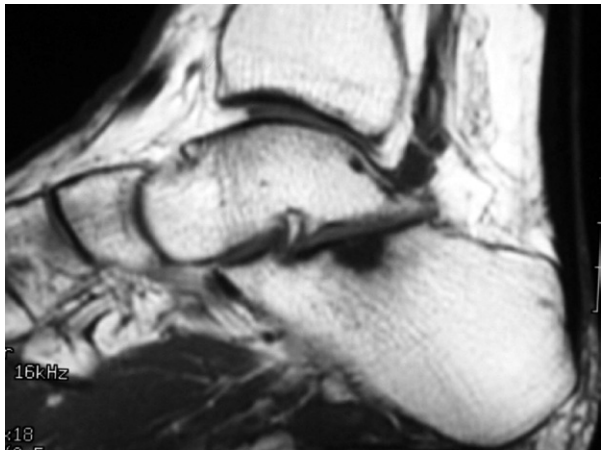

FIGURE 3. Magnetic resonance image showing hypersignal in the talocalcaneal area of the calcaneus surface.

TABLE 1. *Outerbridge Classification*[2]

Grade	Description
I	Cartilage with softening and swelling
II	A partial-thickness defect with fissures on the surface that do not reach the subchondral bone or exceed 1.5 cm in diameter
III	Fissuring to the level of the subchondral bone in an area with a diameter >1.5 cm
IV	Exposed subchondral bone

TABLE 2. *Berndt-Harty Classification*[3]

Grade	Description
I	Small area of compression
II	Partially detached osteochondral lesion
III	Completely detached, nondisplaced fragment
IV	Detached and displaced fragment

TABLE 3. *Ogilvie-Harris Scale*[4]

	Description			
Category	Poor (1)	Fair (2)	Good (3)	Excellent (4)
Pain	Severe	Moderate	Mild	None
Swelling	Moderate/severe	Mild with activities of daily living	With exercise	None/minimal
Stiffness	Minimal motion	Painful deficit	Mild deficit	None/minimal
Limping	Severe (cane/crutch)	Moderate	Slight	None
Activity	Limited activities of daily living	Moderate limits	Minor limits	No limits

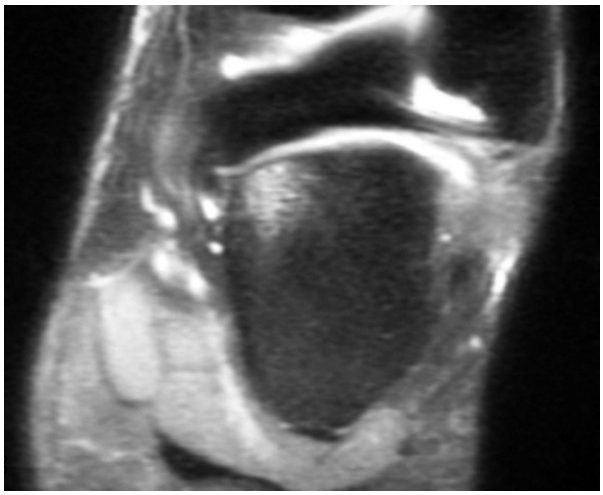

FIGURE 4. Magnetic resonance image showing the coronal localization in the internal talocalcaneal area.

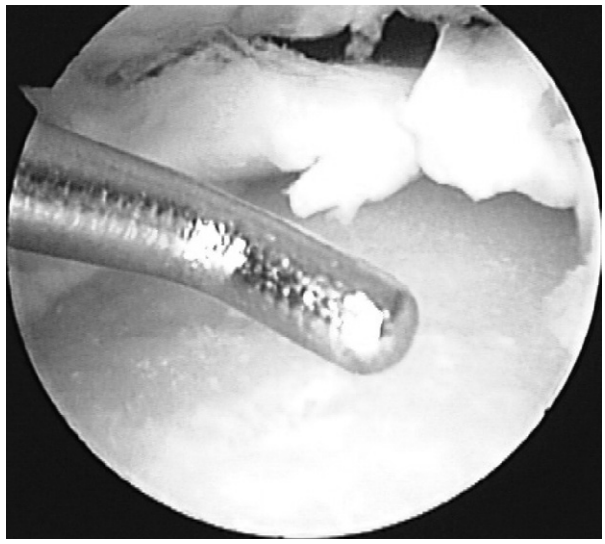

FIGURE 5. Arthroscopic view of affected surface showing a chondral injury classified as degree III/IV according to Outerbridge.[2]

directly over the subtalar space, in a perpendicular direction. We take a needle just over the subtalar space and make a 4-mm skin incision. We perform dissection until the bone surface is reached with a mosquito clamp in a longitudinal direction to protect against injuring the neurovascular bundles. When we introduce the first arthroscopic tool, we could see the surface of the bone. We introduce the second needle 15 mm distal to first portal and we could arthroscopically see the end of this needle in the articular space. The distance between the two needles is 15 mm. Debridement of the osteonecrotic area was performed, and the Steadman technique was used on the injured bone surface. No postoperative complications were observed, and after physical therapy, the patient was pain-free and was allowed to perform limited activities (i.e., standing up and walking without symptoms). On the Ogilvie-Harris scale (Table 3), the patient's score had increased from 7 points preoperatively to 20 points after the surgical procedure.[4] After 24 months, the patient remains asymptomatic with weight-bearing working activities and when standing.

DISCUSSION

Osteochondritis dissecans results from aseptic loosening of one fragment of the articular cartilage with or without subchondral bone. The knee is most commonly affected, but the elbow and ankle may also be involved.[5]

The term *osteochondritis dissecans* is used in the literature to describe the aseptic separation of a fragment of articular cartilage with or without a varying amount of subchondral bone. This term was first coined by König in 1888 to describe loose bodies inside the knee joint. In 1922 Kappis proposed this term for the ankle.[6] In 1959 Berndt and Harty[3] concluded that osteochondritis dissecans was in fact a transchondral fracture caused by trauma, classifying it into 4 stages.

This injury has only been described once in the medial posterosuperior area of the calcaneus on the talocalcaneal surface.[1] The radiographic examination showed no complications, and assessment via bone scintigraphy and magnetic resonance imaging was needed, this being the most accurate diagnosis technique.[7,8]

Conservative treatment did not yield favorable outcomes, as is indicated in injuries of the talar dome, where curettage and scission of the injury yielded good or excellent outcomes in 75% to 80% of patients.[8-10] Arthroscopic curettage and scission are known to allow direct access to the injury and produce less morbidity in soft tissues.[8,11]

This approach to osteochondral injuries does not differ in this location from that carried out in other areas. Conservative management is the mainstay of treatment for stable lesions, but for unstable lesions, a more aggressive procedure is necessary. Arthroscopic debridement was proposed because it provides excellent visualization in that operative procedure and produces less morbidity.

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