

## Osteochondritis Dissecans of Lateral Process of Talus Involving the Subtalar Joint: An Unusual Case

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### Abstract

Osteochondral dissecans (OCD) of talus is an uncommon injury is often missed initially. We reported a rare case of OCD of the lateral process of talus involving the subtalar joint in a 34-year-old male. Magnetic resonance imaging exhibited degenerative changes at the subtalar joint, with a 12 × 10 × 15-mm subchondral cystic lesion within the lateral part of talus in the posterior subtalar joint and two osseous loose bodies in the lateral compartment, which were removed through the sinus tarsi approach. A 1.2 × 1.5-cm osteochondral fragment distal to the lateral process of talus was noted intraoperatively. The subchondral cyst was excised and the fragment fixed with a 4-mm partially-threaded cannulated cancellous screw. The foot and ankle disability score improved from 26.0 preoperatively to 92.3 at the 1-year follow-up. Thus, talus OCD is an unusual condition that mandates a thorough clinical and radiological work-up and prompt management.

**Keywords:** Ankle, Ankle joint, Ankle pain, Osteochondritis dissecans, Subtalar joint, Lateral process of talus

### Introduction

Osteochondritis dissecans (OCD) is an acquired idiopathic lesion of subchondral bone, which may produce delamination and sequestration with or without articular cartilage involvement due to a disturbance of the local blood supply [1, 2].

The lesion may heal spontaneously, or fragments may detach and displace into the joint cavity, resulting in intra-articular osseous loose bodies. OCD prevalence rates vary in literature between 15 and 29 per 100,000 [1].

The etiopathogenesis of OCD has not been clearly established. However, possible etiologies include traumatic, ischemic, idiopathic, and hereditary. Most authors now propose a multifactorial etiology for OCD [2]. Although OCD can affect any joint, the knee is the most commonly affected, followed by the elbow [3].

The ankle is a relatively uncommon site for OCD. When the ankle is involved, the talar dome is the most commonly affected site [3].

The propensity for missing the lesion at the initial clinical diagnosis may result in considerable morbidity to the patient. This mandates a timely diagnosis and prompt treatment. Although numerous case reports and studies have been published on knee OCD lesions, few studies have reported OCD of the talus. In the present study, we reported an uncommon case of OCD of the lateral process of talus involving the subtalar joint.

### Case Presentation

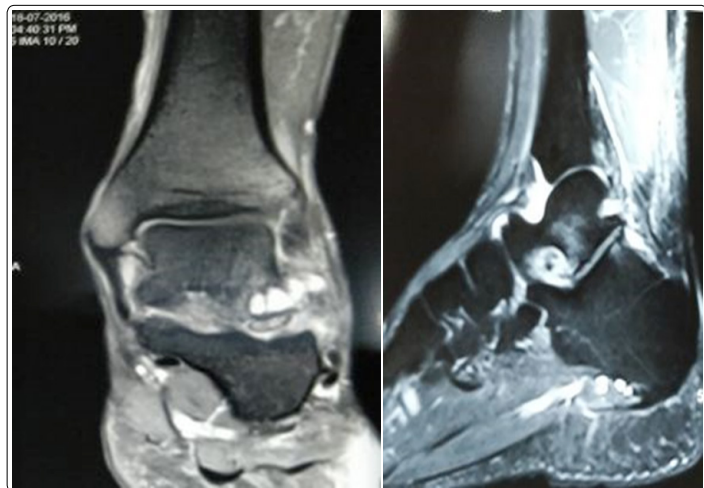
A 34-year-old man presented to our center with the complaint of pain and intermittent locking episodes in the left ankle joint and difficulty in walking since 2 years. He gave a history of an ankle sprain two years ago, which was treated conservatively with analgesics.

The patient presented with an antalgic gait, although no obvious deformity was noticed. The lateral aspect of the subtalar joint and sinus tarsi was tender on palpation. No signs of instability were noticed at the subtalar joint, and the range of motion at the ankle, subtalar, and mid-tarsal joints was within normal limits. No obvious deformity was observed on plain radiographs (Figure 1). However, magnetic resonance imaging (MRI) exhibited degenerative changes at the subtalar joint. Additionally, a

subchondral cystic lesion measuring  $12 \times 10 \times 15$  mm in dimension was observed within the lateral part of talus in the posterior subtalar joint along with two osseous loose bodies in the lateral compartment (Figure 2). The condition was diagnosed as OCD of the lateral process of talus involving the subtalar joint.



**Figure 1:** Plain radiograph of ankle joint (anteroposterior and lateral view) exhibiting no obvious deformity



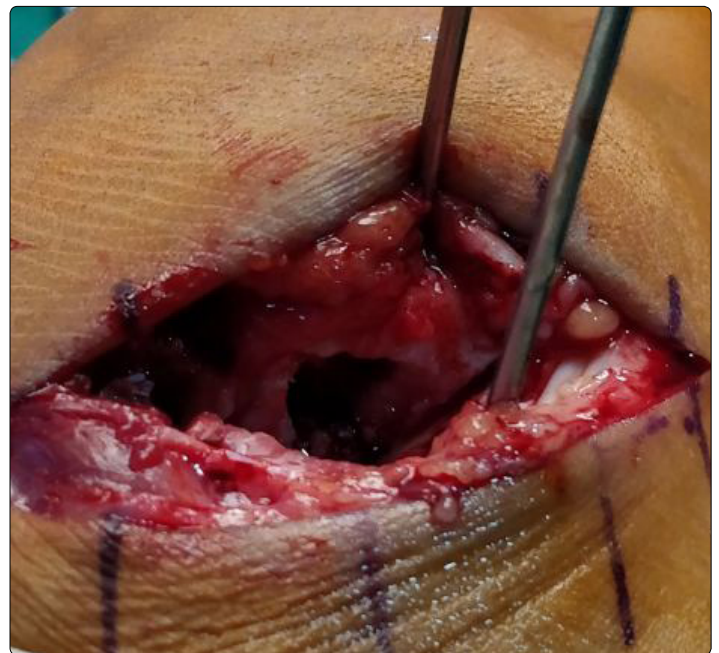
**Figure 2:** 2a sagittal view of ankle joint exhibiting signal intensities in lateral process of talus  
2b coronal section of ankle joint exhibiting high signal intensity in talus with subtalar extension

The osseous loose bodies were surgically removed through the sinus tarsi approach (Figure 3). Intraoperatively, an osteochondral fragment of  $1.2 \times 1.5$  cm with a bone attachment was observed distal to the lateral process of talus, which was missed on both the imaging studies. The underlying cyst was excised (Figure 4), and the fragment was fixed with a 4-mm partially threaded cannulated

cancellous screw and autologous cancellous graft (Figure 5a and 5b). A below-knee slab was applied postoperatively for 2 weeks, followed by partial weight-bearing for 6 weeks. At the 1-year follow-up, the foot and ankle disability index score had improved from 26.0 preoperatively to 92.3. The patient exhibited no signs of recurrence at the 1-year follow-up.



**Figure 3:** Loose osseous bodies surgically removed through the sinus tarsi approach



**Figure 4:** Excision of the subchondral cystic lesion



**Figure 5A and 5B:** 5A osteochondral fragment fixed with a 4-mm partially threaded cancellous screw and autologous cancellous graft  
5B Postoperative radiograph with the screw in place

## Discussion

Although a familiar condition, the etiology and treatment of OCD is still poorly understood. On many occasions, the symptoms of OCD are not clear, leading to a delayed or difficult diagnosis. Radiography may be helpful as an X-ray is a reliable diagnostic aid, and MRI can be obtained for further characterization of the lesion.

OCD shows a marked male predilection, with a male: female ratio of 5: 3 [1]. Stress from repetitive motions and traumatic injuries are known etiologies of this condition [2]. The preponderance of this condition in males can be explained by the fact that men perform more physical activities and are thus more prone to trauma. Our patient, too, was a 34-year-old male.

The artery of the tarsal canal, arising from the posterior tibial artery and the artery of the sinus tarsi formed by branches of the dorsalis pedis and the peroneal arteries constitute the main blood supply of the talus. These arteries form a retrograde blood supply to the talar dome by anastomosing inferior to the talus and supplying end branches that

enter the talar neck [4]. Additionally, the trapezoidal talar dome, covered by avascular articular cartilage, is wider anteriorly than posteriorly [5]. The combination of the avascular articular cartilage and retrograde blood supply predisposes the talus to OCD [4].

OCD is usually initiated through intraosseous subchondral osteopenia in the subchondral bone. This lesion is often missed in radiographs and is only detectable through MRI or bone scans [2]. Thus, OCD is often missed in the initial phases. In our case too, the patient gave a history of ankle sprain 2 years back. The plain radiographs at the present examination also exhibited no pathology. MRI can visualize articular cartilage, subchondral bony lesions, and the surrounding soft tissue accurately [2]. Therefore, it is an ideal diagnostic modality for OCD.

The treatment of OCD can be either conservative or surgical. Symptomatic lesions in children or skeletally immature patients are preferably treated with conservative measures for 3 months in the absence of loose bodies in radiographic examination. However, surgical treatment is recommended in unstable lesions or in cases where conservative treatment does not exhibit any improvement in the condition over a sustained period of time (average 6 months) [1]. In the present case, conservative treatment had failed to exhibit any improvement over 2 years. Additionally, a subchondral cystic lesion and two osseous loose bodies were also observed on radiographic examination. Thus, the patient was treated surgically.

Further studies to elicit the etiology for OCD would assist in the formulation of a more effective treatment plan for the condition.

## Conclusion

Talus OCD must be included in the differential diagnosis of ankle pain. It is an unusual condition which mandates a thorough clinical and radiological work-up and prompt management to minimize morbidity and enhance treatment results.

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