

What Are Osteochondral Lesions?



Osteochondral lesions, sometimes called osteochondritis dessicans or osteochondral fractures, are injuries to the talus (the bottom bone of the ankle joint) that involve both the bone and the overlying cartilage. These injuries may include blistering of the cartilage layers, cyst-like lesions within the bone underlying the cartilage, or fracture of the cartilage and bone layers. Throughout this article, these injuries will be referred to as osteochondral lesions of the talus (OLT).

What Are Symptoms Of OLTs?

OLTs can occur after a single traumatic injury or as a result of repeated trauma. Common symptoms include prolonged pain, swelling, catching and/or instability of the ankle joint. After an injury such as an ankle sprain, the initial pain and swelling should decrease with appropriate attention (rest, elevation). Persistent pain despite appropriate treatment after several months may raise concern for an OLT.

Pain may be felt primarily at the lateral (outside) or medial (inside) point of the ankle joint. Severe locking or catching symptoms, where the ankle freezes up and will not bend, may indicate that there is a large osteochondral lesion or even a loose piece of cartilage or free bone within the joint.

What Causes OLTs?

The majority of OLTs, as many as 85 percent, occur after a traumatic injury to the ankle joint. Ankle sprains (rolling-inward injuries to the ankle) are a common cause of OLTs. With this type of injury, a section of the talus surface may impact another part of the ankle joint (tibia or fibula). As this happens, an impaction, crushing or shearing injury to the talus may occur. Other types of injury mechanisms may also cause an injury to the surface of the talus.

Anatomy

The talus is the bottom bone of the ankle joint. Much of this bone is covered with cartilage. The tibia and fibula bones sit above and to the sides of the talus, forming the ankle joint. This joint permits much of the up (dorsiflexion) and down (plantarflexion) motion of the foot and ankle. The blood supply to the talus is not as rich as many other bones in the body, and as a result injuries to the talus sometimes are more difficult to heal than similar injuries in other bones.

How Are OLTs Diagnosed?

OLTs are diagnosed with a combination of clinical and special studies. Your orthopedic foot and ankle surgeon may have a suspicion that you have this type of injury from the history you provide. Physical examination can further increase the suspicion for this type of injury. Imaging is necessary to confirm the diagnosis. Occasionally, regular X-rays can show an OLT but frequently additional imaging is needed. This additional imaging may be a CT scan or an MRI.

What Are Treatment Options?

Once the diagnosis has been confirmed, treatment may consist of either non-operative or operative methods. The specifics of treatment will likely depend on the nature of the OLT, presence of other injuries and patient characteristics.

Non-operative treatment is appropriate for certain lesions and usually involves immobilization and restricted weightbearing. This may then be followed with gradual progression of weight bearing and physical therapy. The goal of non-operative treatment is to allow the injured cartilage and bone to heal.

Other lesions may be more appropriately treated with surgery. The goals of surgery are to restore the normal shape and gliding surface of the talus in order to re-establish normal mechanics and joint forces. The hope is to minimize symptoms and limit the risk of developing arthritis.

Depending on the characteristics and location of the OLT, surgery may be done arthroscopically or by opening the skin. Arthroscopy uses a camera and small instruments to view and work within the joint through small incisions. It may not be possible to properly treat certain lesions arthroscopically due to the size or location of the lesion. Treatments may include debridement (removing injured cartilage and bone), fixation of the injured fragment, microfracture or drilling of the lesion, and/or transfer or grafting of bone and cartilage. You and your orthopaedic foot and ankle surgeon can discuss these treatment options and decide which one is best.

What Happens After Treatment?

Anticipated recovery after an osteochondral lesion varies depending upon the nature of the lesion and the treatment. Most treatments require a period of immobilization and restricted weightbearing that can range from several weeks to several months. More involved procedures that include bone grafting or cartilage transfer may require a longer period of recovery.

The results of non-operative treatment of OLTs have been disappointing. Most studies show that full resolution of the pain from an OLT occurs in less than half of cases treated without surgery. Studies examining the outcomes after debridement and microfracture (drilling) of OLTs have shown that the majority (greater than 70 percent) of patients have a good or excellent outcome. Procedures that transfer bone or cartilage to an OLT also have good outcomes. In general, the best results can be expected for smaller lesions.