

OCD: What Is It & How Do I Describe It?

Miriam A. Bredella, MD, Department of Radiology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, mbredella@partners.org

Target audience: Radiologists with special interest in musculoskeletal imaging

Learning objective: To review definition and imaging findings of OCD and pertinent positive and negative findings that should be mentioned in the report

Definition: Osteochondral lesions in the athlete represent a spectrum of disorders, including acute cartilage injury, osteochondral defects, and osteochondritis dissecans (OCD).

Etiology: The pathogenesis of OCD includes direct trauma and repetitive microtrauma. High impact trauma can result in a chondral-osteochondral fracture or cartilage delamination. Acute trauma can also alter biomechanics of the bone/cartilage unit, leading to progressive focal cartilage loss and associated degenerative change in the subchondral bone. Chronic repetitive microtrauma can cause focal microfracture, necrosis, and healing response of subchondral bone, with localized degenerative changes in the overlying cartilage. The medial femoral condyle, talar dome, and capitellum are the most common sites of OCD.

How do I describe it: Treatment is based on the degree of stability of the osteochondral fragment. If the fragment is attached to bone, management is often conservative. If there is detachment with displacement of the fragment, treatment is often surgical, requiring removal of the fragment or re-attachment to the parent bone. Staging of OCD is therefore primarily based on whether the osteochondral fragment is completely attached, partially attached or loose. Additional information that should be described are exact location and extent of the chondral lesions, whether it is focal or generalized, whether there is involvement of the underlying bone (chondral vs osteochondral), and associated bone and soft tissue injuries, such as fracture, necrosis, or ligament tears. MRI has been shown to be a sensitive and specific method to assess mechanical stability of OCD. T2- or PD-weighted sequences with fat suppression are helpful to evaluate the articular cartilage and subchondral bone. High resolution 3D gradient echo sequences are useful to assess the size and stability of osteochondral fragments. MR arthrography can be useful in evaluating the extent of articular cartilage damage, including cartilage delamination, and partial or complete detachment of fragments, manifested as contrast undercutting the fragment-bone interface.

References:

1. McGahan PJ, Pinney SJ. Current concept review: osteochondral lesions of the talus. *Foot Ankle Int.* 2010 Jan;31(1):90-101.
2. Mosher TJ. MRI of osteochondral injuries of the knee and ankle in the athlete. *Clin Sports Med.* 2006;25:843-66.
3. Mintz DN, Tashjian GS, Connell DA, Deland JT, O'Malley M, Potter HG. Osteochondral lesions of the talus: a new magnetic resonance grading system with arthroscopic correlation. *Arthroscopy.* 2003;19:353-9.