

# **OSTEOCHONDRITIS DISSECANS**

## **What is osteochondritis dissecans?**

Osteochondritis dissecans (OCD) is a disorder in which a fragment of articular (joint surface) cartilage and the bone beneath it separate. The cause is uncertain, however, trauma and a lack of blood supply to the affected bone have been implicated as factors contributing to the onset of the condition. The knee is most commonly affected, but the elbow and ankle joints are vulnerable as well. Most lesions are found on the end of the inner part of the thigh bone, with a small percentage being found on the end of the outer part of the thigh bone or on the kneecap.

## **What are the symptoms of osteochondritis dissecans?**

Patients with OCD of the knee typically present with poorly localized, aching knee pain and swelling. The pain can be exacerbated by strenuous activity and twisting motions. As a result, patients may walk with their toes turned to the outside. This alleviates some of the discomfort by unloading the damaged area of the knee. If a fragment of articular cartilage breaks loose into the knee joint, it can cause the knee to lock. Intermittent catching may be noted. Patient may demonstrate demonstrable atrophy in the thigh muscle. Swelling is common. Patients with OCD usually present for evaluation during their teenage years. It is more common in males by a three to one ratio.

## **How is osteochondritis dissecans diagnosed?**

OCD can be suspected clinically based on a patient's history and clinical examination, but it cannot be confirmed unless diagnostic imaging studies are obtained. Plain X-rays should be taken initially. A special view is often necessary to establish the diagnosis ("tunnel view"). This x ray view is frequently not ordered as a routine x ray except by orthopaedic surgeons so that the standard 3 views (AP, lateral and skyline) may not detect the OCD. These will usually reveal the lesion. The classic finding is an oval shaped fragment of bone that appears separated from the rest of the thigh bone. An MRI (magnetic resonance imaging) is also useful in determining the stability or instability of the bone fragment. If joint fluid is present between the fragment and the subchondral bone, the likelihood of the fragment being unstable is a virtual certainty. An OCD lesion of this type is unlikely to heal non-surgically.

## **How is osteochondritis dissecans treated?**

Once a diagnosis has been made, the treatment goals are to reduce pain, restore the contour of the joint surface and minimize the likelihood of arthritis developing in the future. Nonsurgical treatment is indicated in a younger patient as long as there is no evidence of fragment instability on plain X-rays. The prognosis in skeletally immature adolescents is more favorable than in those individuals who are skeletally mature. A period of rest, activity modification, possible immobilization, and non-weight-bearing of

## **How is osteochondritis dissecans treated? (cont'd)**

3-6 weeks is necessary in an effort to promote bone healing at the site of fragment separation. Activities should be modified for 6-12 weeks. High impact activities that involve jumping, landing or twisting should be avoided during this time. Activities of daily living are permitted. Full activities may be resumed once the patient has no complaints of knee pain, physical examination reveals full range of motion and strength, there is no swelling noted and there is radiographic evidence of healing on X-ray.

Surgical treatment may be indicated for younger patients who fail conservative treatment or if there is no evidence of radiographic healing after 3 months. Surgical repair is recommended for adult patients, regardless of the stability of the lesion. Unstable fragments require surgery regardless of the patient's age.

Arthroscopy is used for the initial surgical management. For the younger patient, with a stable lesion, arthroscopic drilling through the fragment into the underlying bone may promote healing by promoting a blood flow to the area.

Unstable lesions require a more aggressive approach that involves fixation of the fragment with hardware (miniature screws). Generally, the fixation hardware is removed 8 weeks post-operatively arthroscopically.

In more complex OCD conditions joint resurfacing may be required. A variety of techniques are in the surgeon's armamentarium and include bone grafting, transplants of fresh cadaver grafts, or growing and implanting a new joint surface (ACI-articular cartilage implantation). Sometimes the OCD repair may require an open surgical incision rather than an arthroscopic procedure to optimally treat the condition.

Usually 3 months of physical therapy are required to regain knee range of motion, strength and function.