

Osteochondrosis (Osteochondritis Dissecans)

Mark C. Rochat, DVM, MS, DACVS

BASIC INFORMATION

Description

Osteochondrosis (OC) and osteochondritis dissecans (OCD) are two forms of a developmental orthopedic disease. OC typically affects young, male, large- and giant-breed dogs. It very rarely occurs in small dogs and cats. The ends of normal leg bones grow joint cartilage that covers the end of the bone. The cartilage is programmed to gradually turn into bone as the bone matures.

OC occurs when the cartilage fails to change into bone and becomes thickened in a single spot. This area of thickened cartilage is poorly nourished by joint fluid and prone to fragmentation (break apart or come loose) with normal activity. The disease is referred to *OC* until the fragmentation leads to the creation of a flap, and then the term *OCD* is used. When the flap of cartilage develops, clinical signs of joint pain occur.

Common sites affected in the dog include the head of the humerus (shoulder), the termination of the humerus (elbow), the talus of the hock (ankle), and the end of the femur at the stifle (knee).

Causes

Numerous factors have been implicated in OC, including nutritional excesses (primarily protein, calcium, and calories), genetic factors, and environmental factors. Because OC has a genetic component, dogs affected with OC should not be bred.

Clinical Signs

Dogs with OCD show signs typical of joint disease. They are stiff after resting, but the stiffness subsides as the joint warms up with activity. The joint becomes stiff and sore again after exercise. Lameness can vary from mild to severe. Signs of secondary osteoarthritis occur early in life and progress at a variable rate over time. (See also the handout on **Osteoarthritis: Medical Management**.)

Diagnostic Tests

Physical and orthopedic examinations often reveal pain in the joint that is made worse by flexing (bending) and extending (unbending) the joint. X-rays demonstrate a defect in the bone in specific locations on the joint surface, depending on the joint involved. Also depending on the specific joint involved, significant numbers of dogs have a similar bone defect in the opposite joint. Other developmental conditions may be found when OC occurs in the elbow.

TREATMENT AND FOLLOW-UP

Treatment Options

Medical management is typically ineffective. In general, surgery is considered only if signs of pain are identified and a cartilage flap is present, because OC without these signs may resolve on its own without surgical intervention. Removal of the flap can be done by either an arthrotomy (surgically opening the joint) or arthroscopy (done through a tiny incision using a viewing scope).

Follow-up Care

Limited activity for 4-6 weeks is usually recommended after surgery. Rest allows the defect in the bone (where the flap was) to properly heal in with fibrocartilage. Ancillary therapy may involve nonsteroidal anti-inflammatory drugs, cartilage-protective agents, and a weight reduction program. Because OC has a genetic component, dogs affected with OC should not be bred.

Prognosis

Prognosis for OCD of the shoulder is excellent. Prognosis for OCD in the elbow is also good unless the flap is very large or significant osteoarthritis is already present. OCD of the stifle and hock, although much less common, carries a generally guarded (uncertain) to poor prognosis for good long-term function, even with appropriate therapy.