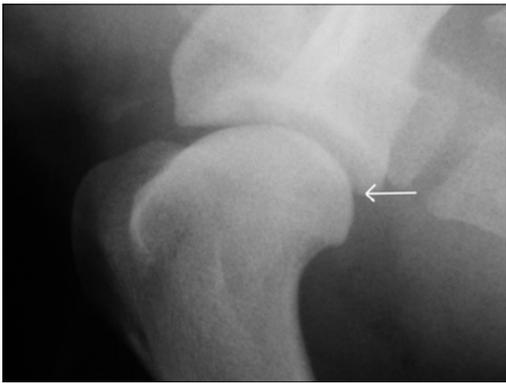


Osteochondrosis

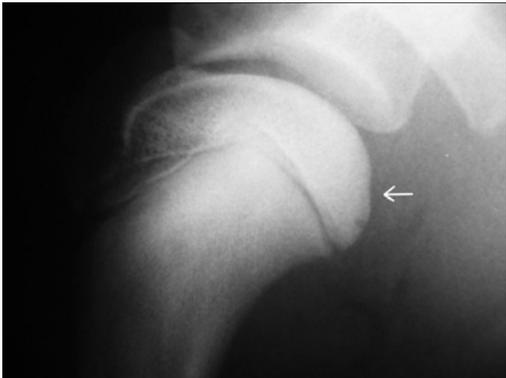
By Sharon Klar, DVM

Osteochondrosis dissecans (OCD) is a common cause of lameness in many species, especially young, growing large-breed dogs, usually around 4 to 15 months of age. Osteochondrosis is a generalized skeletal disturbance of bone formation in which layers of the articular surface fail to mature into bone at a symmetrical rate. This results in focal areas of thickened cartilage that are prone to injury.¹

The extra thick cartilage is unable to absorb nutrients from joint fluid and deteriorates. This deterioration, along with force on the cartilage leads to the formation of fissures in the cartilage.² When the OCD progresses so that a vertical cleft breaks through the surface, lameness occurs. If the cleft becomes more extensive, the cartilage can then form a movable flap. (See figure 2) After the flap forms it cannot heal back to the humeral head. It undergoes further calcification and may stay in place or break off to form a joint mouse.¹ This piece, or pieces, may float around the joint, become lodged in the bicipital tendon sheath, or embed in the synovium (the lining of the joint.)



*Figure 1 -
Normal
shoulder
joint*



*Figure 2 -
Shoulder joint
with OCD
lesion and
flattening of
the humeral
head*

Osteochondrosis in dogs is most commonly found in the scapulohumeral (shoulder) joint, elbow, stifle (knee), and tibiotarsal (hock or ankle) joints. The most common joint for OCD in dogs is the shoulder. Moderate to severe lameness of a front limb in a young dog should have a thorough orthopedic exam and radiographs of the affected area(s). While thickened cartilage is not visible on radiographs, OCD can be diagnosed by the flattening, or saucer-shaped lesion on the normally convex surface of the humeral head. Sometimes, a cartilage flap can be seen on the radiographs.

It is important to note that osteochondrosis often occurs in both shoulder joints, so both shoulders should be radiographed if OCD is suspected in one joint.

Osteochondrosis is apparently a multifactorial disease, and both genetics and environment probably play a role. Over-nutrition has been experimentally shown to cause the disease in several species,^{3,4} and certain studies have found strong evidence that suggests genetic factors as an underlying cause of OCD and therefore, affected animals should not be bred.⁵ Along with diet and genetics, growth rate, trauma, hormone imbalance, and excessive exercise are all thought to be risk factors for the disease. Osteochondrosis is often caused by normal stress on abnormally developing bone.⁶ Males develop OCD more commonly than females.

Like many medical conditions, treatment of OCD depends on how quickly the problem is diagnosed and how far it has advanced. If the disease is detected early, rest and restricted diet are the first choice. If a dog is over-weight, calorie restriction

is necessary and can help to slow the growth rate. If the young dog is still on puppy food, changing to adult food is necessary. After strict rest for 4 to 6 weeks, re-radiographing the joints can then determine whether or not surgery is indicated.

If the dog has a flap of cartilage on the initial radiographs, or on the re-check radiographs, then surgery is the best option. Surgery would be indicated for dogs that are still lame after four weeks of strict rest.

Surgery for OCD consists of either arthroscopy or arthrotomy (via incision,) with the goal being to remove the cartilage flap and flush the joint to remove any joint mice. Both techniques are effective within the shoulder or knee joints. Arthroscopy generally has a shorter recovery time after surgery.

Post-surgically, dogs tend to take about 4 to 8 weeks to recover, and typically do very well with OCD of the shoulder joint. Some degenerative joint disease (arthritis) is to be expected and may be managed medically. OCD of the elbow, stifle, (knee) and tibiotarsal joint will tend to have improved function after surgery, but degenerative joint disease is likely to advance, and the dog may still be lame after exercise.⁷

Personal Note: At 7 months of age my neutered male Anatolian, Berek, developed lameness for one week in his left front leg. It did not respond to anti-inflammatories. Radiographs showed a saucer-shaped lesion of the caudal humeral head on the left side and a similar, though milder lesion of the right humerus. After talking to two Anatolian breeder friends, and one board-certified veterinary specialist, I put Berek on a strict-rest regime for five weeks. His lameness resolved within a week or two and follow-up radiographs at six weeks showed marked improvement. I had taken precautions with his feeding and his walks with me, but it is my belief that he may have over-extended himself and caused stress and trauma to his developing joints while playing with our lab. At 13 months of age, Berek is still at risk, but continues to be healthy and well.

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