



d.c. Vets, inc.

Osteochondrosis (Growing Pains)

Osteochondrosis is a pathological condition in rapidly growing large breed dogs that leads to a painful disturbance in joint cartilage development. In osteochondrosis, the cartilage cells fail to differentiate in a normal manner. The joint cartilage becomes thickened and large, decayed areas develop. At this point, osteochondrosis has occurred and represents one of the true "growing pains" of canine adolescence.

If the puppy is active and traumatizes this soft, decayed area, cracks or fissures form and extend into the normal cartilage until a large cartilage flap forms. This is known as osteochondritis dissecans (OCD).

"Osteochondritis" refers to the presence of an inflammatory reaction in the bone marrow and joint, while "dissecans" refers to the flap of cartilage that is formed. At this stage, pain is present in the joint every time the dog tries to walk. When the cartilage flap falls into perfect position, discomfort is minimal. As the cartilage flap shifts position, pain becomes acute with joint swelling that is increasingly sensitive.

The sites most commonly affected include the shoulder, elbow, knee, and ankle (hock). The syndrome can be bilateral and on occasion involves several joints.

Shoulder Joint:

Osteochondrosis of the shoulder affects the caudal aspect of the humeral head. It is most often seen in male large breed dogs. Clinical signs include lameness which is worse after exercise and pain on palpation of the shoulder joint. It is seen most frequently in animals between four and seven months of age. Radiographs (x-rays) are used to diagnose the lesion. Early radiographic changes include an abnormal contour or flattening of the humeral head. Later in the disease there is a radiolucent defect in the shoulder joint surface. Treatment or

this syndrome is surgery to remove the cartilage flap as soon as it is formed (see Fig 1, Fig 2, Fig 3, Fig 4).



Figure 1
Lateral View of Normal
Left Shoulder Joint

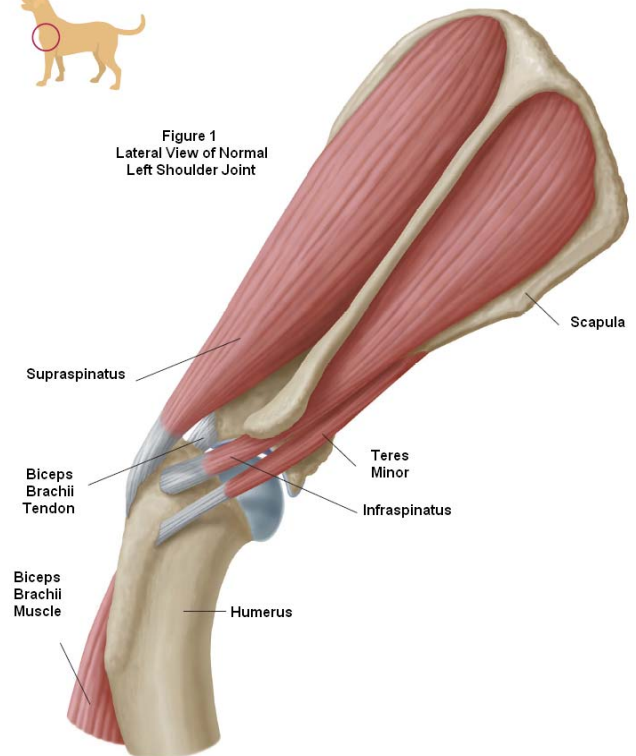
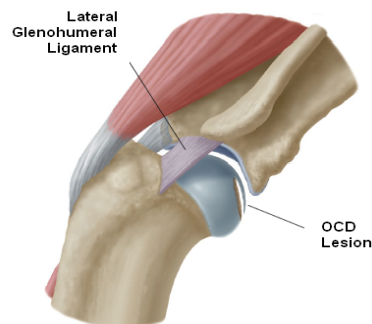


Figure 2
Lateral View of Left Shoulder
Joint Demonstrating
Osteochondritis Dissecans (OCD)
of the Humeral Head





Elbow Joint:

Osteochondrosis occurs in the elbow on the medial condyle of the humerus. It is most common in large or giant breed dogs from four to seven months of age. The clinical signs include acute or chronic intermittent lameness of one or both forelimbs. The treatment of choice is surgery with the prognosis depending on the severity of the arthritis (degenerative joint disease) already present.

Stifle Joint:

Osteochondrosis in the stifle (knee) can be difficult to clinically diagnose as the lameness is frequently obscure and is often confused with hip dysplasia. The lesion is seen in x-rays as a flattening or radiolucent defect in the lateral or medial femoral condyle. The prognosis is fair even if surgery is performed early in the course of the disease and is not as favorable as with surgery in the elbow or shoulder. (Fig 5, Fig 6, Fig 7, Fig 8)

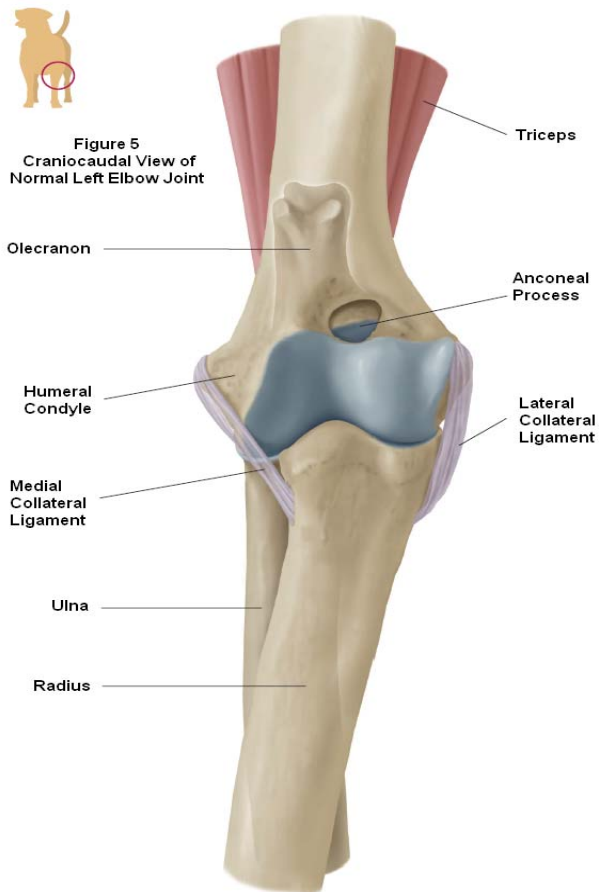
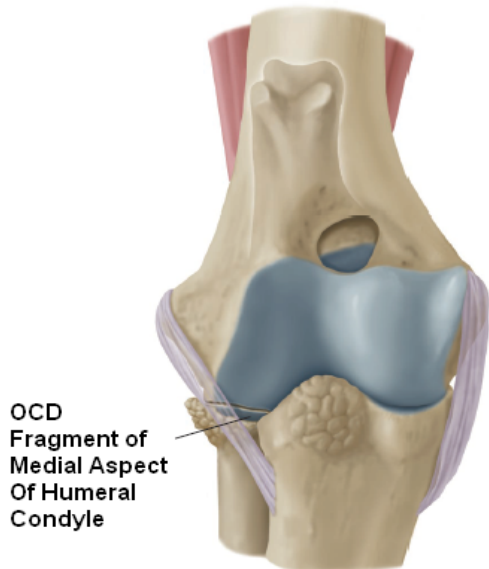


Figure 6
Craniocaudal View of Left Elbow Joint
Demonstrating Osteochondritis Dissecans
(OCD) of Humeral Condyle



Hock Joint:

Osteochondrosis lesions in the hock occur on the caudal aspect of the medial ridge of the talus bone. Affected animals are usually four to five months of age and present with slight lameness of the hind limbs. The ankle joints appear straight and swollen, and are painful upon flexion and extension. Radiographs demonstrate displaced cartilage, bone fragments, and bone spurs due to secondary degenerative joint disease. The prognosis is good if surgery is performed before the onset of secondary arthritis. Once arthritis is advanced, surgery is helpful in relieving any intense pain but does not afford the results expected with surgery of the elbow or shoulder.

Ununited Anconeal Process

Ununited anconeal process is a failure of the growth center of the anconeal process in the elbow joint to unite properly with the ulna. This fusion should be completed by sixteen to twenty-four weeks of age. Instead of a normal bony union, the ununited anconeal process represents a large piece of bone connected to the ulna by a strand of fibrous tissue. The diagnosis is confirmed by radiography. Surgical removal of this unstable bony fragment minimizes progressive arthritis and is indicated as soon as possible to prevent further joint degeneration (see Fig. 9, Fig 10, Fig 11, Fig 12).



Figure 9
Lateral View of
Normal Left Elbow
In Extreme Flexion

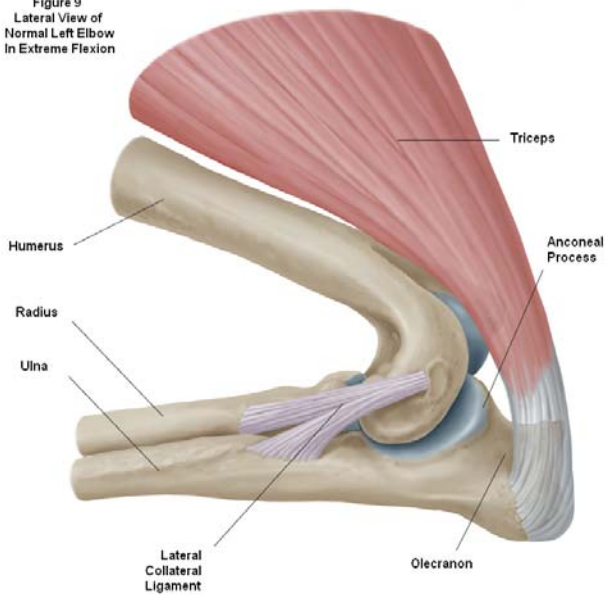


Figure 10
Lateral View of
Left Elbow
Demonstrating
United Anconeal
Process

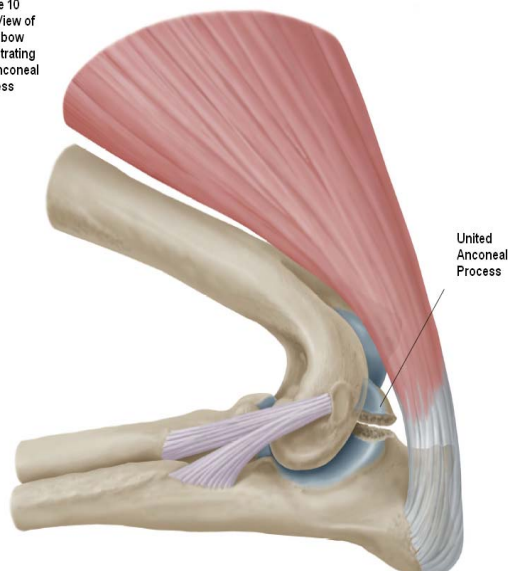


Figure 11
Lateral flexed projection of normal elbow



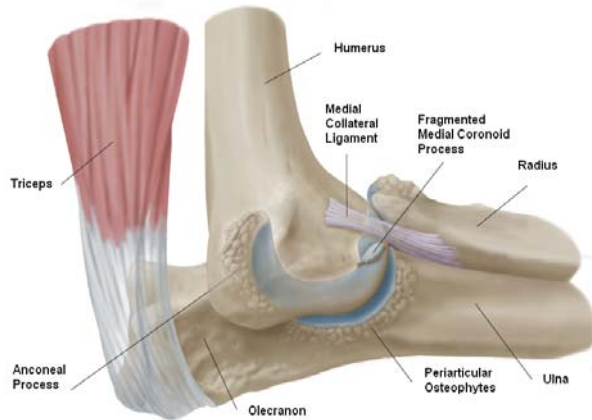
Figure 12
Lateral projection of flexed elbow with ununited anconeal process

Fragmented Coronoid Process

The coronoid process is a prominent medial projection of the ulna just distal to the elbow. A fragmented coronoid process is difficult to document radiographically for several reasons. Visualization of the fragment can be difficult because of the superimposed radial head in most radiographic projections. Therefore, the radiographs usually appear normal until the onset of secondary degenerative joint disease. Arthritis appears as early as a few months of age and is first expressed by small bone spurs on the anconeal process and on the condyles of the humerus. On occasion, special diagnostic tests, such as a bone scan or even a MRI, may be required to diagnose the hidden fragments of bone before they create debilitating cartilage damage (see Fig 13, Fig 14, Fig 15).



Figure 13
Medial View of Left Elbow
Demonstrating Fragmented
Medial Coronoid Process



Older dogs with this syndrome usually have severe arthritis of the entire elbow joint. Again, surgical removal of the unstable bony fragments minimizes progressive arthritis and is indicated as soon as possible to prevent further arthritic changes. While the intense pain and crippling arthritis seen in chronic cases is greatly improved by surgical removal of the coronoid fragments, residual arthritis will require some intermittent anti-inflammatory medication.

Panosteitis

Panosteitis is the most common and painful of the "growing pains" with the age of onset usually between five and twelve months of age. It has been reported in dogs as young as two months of age and as old as five years of age. While panosteitis usually affects large or giant breeds of dogs, it can also affect the Basset Hound.

Clinical Signs:

Clinically, there is pain in the long bones (humerus, ulna, radius, femur, and tibia) which is manifested by slight to severe lameness which can last from a few days to several weeks. (Fig 16)

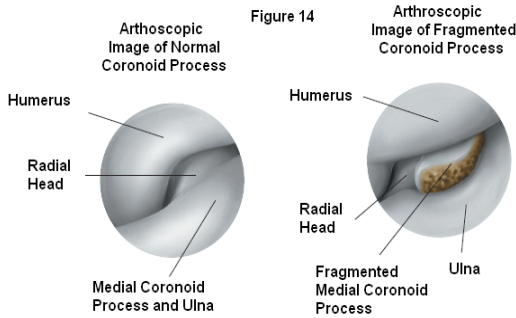
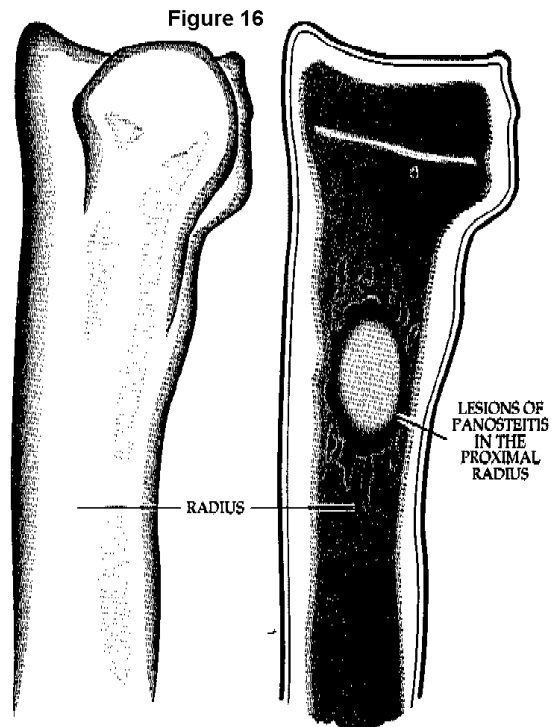


Figure 15
Lateral projection of flexed elbow with
osteoarthritis secondary to fragmented
medial coronoid process



Some animals may be reluctant to move at all. Often the lameness shifts from one limb to another every two to three weeks, with apparent lapses in clinical manifestations of up to three months between episodes. Multiple bone involvement is seen in about one-half of the cases. The classic finding on physical examination is pain on deep palpation of the long bones. Some animals may have reduced appetite and activity during the painful periods. The complete course of the disease is usually two to three months, but it can range from a week to six or eight months.

Radiographic (X-Ray) Signs:

Ultimately, the diagnosis of panosteitis is made radiographically. A radioisotope bone scan can be used to diagnose those with no radiographic lesions.

Therapy:

Inasmuch as the cause of panosteitis is not known, only symptomatic treatment is recommended for those animals who need pain relief. Anti-inflammatory drugs such as aspirin and corticosteroids are probably the most commonly used agents. The disease will eventually run its course and resolve at maturity.

Postoperative Care

Postoperative care is critical to long term success. The most critical element is confinement of the dog to a small area with ample bedding and good footing. Physical therapy begins at suture removal and involves flexing and extending the hip for a few minutes three or four times a day. Swimming therapy and short walks, gradually increasing in length, begin three to six weeks after surgery depending on the individual. Again, complete confinement to a small room, pen, or cage when not working on physical therapy is mandatory. Avoid slick floors, jumping, running, stair climbing, and all acrobatics until recovery is complete.

The Use of Elizabethan Collars

Your pet is being discharged with a plastic cone-shaped collar called an Elizabethan or Buster Collar (below). This collar has been provided for use during the recuperation period and plays an important part in your pet's healing capabilities.

Elizabethan collar



The collar is designed to restrict your pet's ability to reach his/her incision or bandage(s). Licking at an incision area may result in open wounds (granulomas) that can be difficult to treat. This collar has been provided to protect these areas and also to insure that proper healing is allowed to take place. Although your pet may exhibit some strange behavior (such as pawing at or rubbing the collar, or walking into stationary objects), after the initial placement of the collar this behavior will usually subside after approximately one to two hours time. Contrary to what one might think, it is not beneficial to remove this collar. To do so only increases the time needed to become accustomed to wearing it. Be assured that this collar does not constrict breathing passages when worn. The animal will be able to eat, drink, sleep and eliminate while wearing this collar.

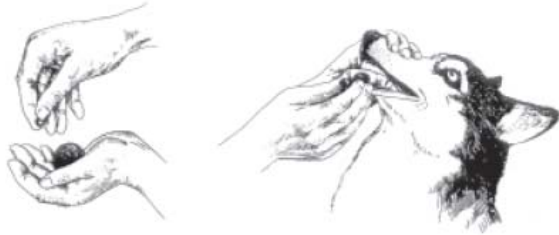
Typically, it will only remain in place for the duration of time that the surgical site is sutured or an area is to remain bandaged. We do suggest that once your pet may have this collar removed that you keep it for future use. It may prove to be quite beneficial in the future for aid in treating minor skin irritations, "hot spots," and so forth.

Medicating Your Dog

1. When administering medication in capsule or tablet form to your dog, you may find it much easier to simply place the medication in a small amount of food and offer it as a treat to your pet.
2. If your dog will not accept medication in the above mentioned fashion, it will be necessary for you to manually 'pill' your pet (below). Place your hand around your pet's upper jaw and

gently apply pressure by pressing the lips against the teeth. Using your other hand, gently pull the lower jaw downward and place the medication in the very back of your pet's throat. By holding his/her muzzle and gently stroking the throat, you will stimulate your pet to swallow.

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Administering medication to a dog

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