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Ununited anconeal process (UAP), elbow dysplasia

Ununited anconeal process (UAP), elbow dysplasia, bone chip or bone spur

Affected Animals:

Dogs.

Overview:

While a normal dog is growing, a piece of the bone in its elbow called the anconeal process fuses with the ulna in the front leg. Dogs that develop an ununited anconeal process fail to form this union. The result of the lack of fusion is instability and irritation in the joint, which leads to arthritis and mild to severe lameness in the affected front limb or limbs. Ununited anconeal process is one of three diseases which are grouped under the heading elbow dysplasia; the other two are osteochondrosis of the elbow, and fragmented medial coronoid process.

A disease of large and giant breed dogs, ununited anconeal process most often affects the German shepherd. The problem also is seen in the Saint Bernard, Irish wolfhound, basset hound, Newfoundland, Great Pyrenees, Labrador retriever, Great Dane, and others.

Clinical Signs:

Lameness that worsens with exercise; abduction of the elbow; external rotation of the foot; effusion; thickening; crepitus; and pain in the affected elbow.

Symptoms:

Lameness of one or both forelimbs; thickened elbows.

Description:

Ununited anconeal process is a developmental disease of large and giant breeds that affects the elbow joint. In UAP, the bone in the elbow, called the anconeal process, fails to fuse with the ulna. This results in arthritis and lameness if untreated. The German shepherd is by far the most commonly affected breed; however, the disease can be seen in any dog, especially other large and giant breeds.

In a normal dog, the anconeal process develops and then fuses to the ulna by the time the animal is 20 weeks of age. If it fails to do so, chronic instability and irritation can result, which leads to progressive arthritis. Typically, dogs will show a forelimb lameness that improves with rest but worsens with exercise. In 20 to 35 percent of the cases, the

disease is bilateral, meaning that it affects both legs, but often, one side will be affected more severely than the other. Dogs are typically presented at six to 12 months of age to a veterinarian because of front leg lameness. Other dogs will not be taken for treatment until they are several years of age, when considerable arthritis is already present.

Diagnosis:

The veterinarian may presume a diagnosis of ununited anconeal process if the dog shows signs of disease and is a German shepherd or other commonly affected large breed. A definitive diagnosis requires x-rays taken after five months of age.

Prognosis:

The prognosis is good for dogs that do not have significant arthritis in their elbows. The prognosis becomes more guarded in cases of long-standing disease, in which the arthritis is severe. With surgical excision of the ununited anconeal process, some arthritis is still likely to occur, but the animals generally do significantly better than if they had not had surgery. With the reattachment techniques, the prognosis can be quite good if the fusion is successful. However, these techniques are likely to fail in severely arthritic joints.

Transmission or Cause:

A genetic cause is thought to play a major role, as the disease is highly prevalent in some lines of German shepherds. Underlying elbow incongruity, or elbow dysplasia, also may be an important factor. Damage to the distal growth plate of the ulna may result in a shortened ulna, putting excessive force on the anconeal process and preventing it from fusing to the ulna. Other factors include problems with the dog's nutrition, such as obesity or high calorie diets that are intended to promote rapid growth, hormonal effects, and chronic trauma.

Treatment:

The treatment for ununited anconeal process is surgical, unless severe arthritis has developed. Several options exist, but surgical excision is the most widely accepted method. In this procedure, the loose anconeal process is removed to prevent further irritation to the joint. In severely arthritic elbows, the surgery may not result in improvement.

Another method that has been advocated is reattachment of the anconeal process with bone screws. The reported success rate varies, and this type of surgery should be performed only if the disease is recognized very early in its progression.

A recently reported treatment in German shepherds called an ulnar osteotomy involves making a bone cut in the ulna to reduce the force on the anconeal process. In the study, a significant number of dogs that underwent this procedure developed a normal fusion of the anconeal process to the ulna. An ulnar osteotomy is generally performed early in the disease, before severe arthritis or displacement of the bony process has occurred.

Medical management consists of maintaining a lean body weight, using non-steroidal

anti-inflammatory drugs, and participating in low impact physical therapy such as swimming.

Prevention:

Controlled breeding programs likely will be the most important means of decreasing the incidence of this disease. For purposes of avoiding breeding dogs that may be disposed towards developing ununited anconeal process, there is an elbow registry in Europe and in the United States. The Orthopedic Foundation for Animals will evaluate x-rays for elbow dysplasia.

Refraining from feeding puppies adult dog food, large breed growth formulas, and other calorie-dense diets may also decrease the risk. Avoiding calorie-dense diets will decrease the growth rate, but not the final adult size of giant breeds. By avoiding rapid growth, the forces placed on the long bones are decreased during development, thus lessening the risk of the disease.