

The Animal Medical Clinic

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Lameness in Growing Pups (Juvenile Bone Diseases)

There are several causes of lameness in young dogs. Most of these are relatively minor and will resolve with time and rest. However, there are other more serious causes that are not self-limiting and, if not treated promptly, may result in irreversible lameness and/or arthritis.

Large and giant breeds of dogs (ie., those whose adult weight is over 60 pounds) are most susceptible to disorders of orthopedic development. These juvenile bone diseases occur during the period of rapid growth which, in large breeds, can extend until 2 years of age.

To minimize the possibility of permanent lameness, it is important to achieve an accurate diagnosis of any lameness that lasts more than 2 weeks. The history, physical examination, and radiographs (x-rays) are all helpful and provide complementary pieces of information.

Radiographs of the affected leg usually provide a starting point for evaluation. In some cases, the opposite (normal) leg may be radiographed for comparative purposes. Depending on the age and breed of the dog, other bones and joints may later need to be radiographed. Several radiographs taken from different angles are usually necessary in order to provide the most complete assessment. This will often require a short-acting anesthetic in order to get the positioning that is necessary.

Lameness Involving the Rear Legs Only

Rear-limb lameness in large breed dogs is usually caused by hip dysplasia or an abnormally formed hip joint. The hip is a ball and socket joint. When a dog has hip dysplasia, the ball (head of the femur bone) is not round and the socket is not deep, therefore the two bones do not fit together well. This malformation results in a characteristic laxity, or looseness, of the joint.

Hip dysplasia is multifactorial (has several contributing causes), but the primary cause is genetic. Some dogs may show signs of lameness by six months of age, whereas others do not show any signs until older. The lameness may be sudden in onset or can develop slowly and appear only intermittently. A dog of the high-risk breeds for hip dysplasia should not be bred before radiographs of the hips are taken. There are several choices of treatment available depending upon the age of the dog, level of discomfort, degree of arthritic changes, and owner finances. Both surgical and medical options are available for management of hip dysplasia.

Lameness Involving the Front Legs Only

Elbow dysplasia, or un-united anconeal process (UAP), is a failure of the top of the ulna to fuse with the rear point of the elbow. It is a condition most common to German shepherd dogs, although other breeds may be affected. It occurs about twice as often in male dogs as female dogs and both elbows may be involved. Lameness often occurs within a few months of birth and is usually intermittent in nature. Affected dogs may stand, sit, or walk with the elbow in an unusual position. Most dogs demonstrate pain when the elbow is fully flexed (bent) and extended. Surgical intervention is the treatment of choice since medical therapy alone is less successful and more likely to lead to progressive arthritis.

Fractured (fragmented) coronoid process is the other common developmental disorder of the elbow. This condition is often seen in retrievers, German shepherd dogs, and Rottweilers. It is more common in male dogs and both elbows are usually involved. Lameness may not appear as early as with UAP. The cause of this disorder is unknown, but involves fracture of the bone or cartilage of the medial coronoid process of the ulna. Eventually, a bone or cartilage fragment may break free and become loose in the joint. This disorder can appear similar to UAP and may be harder to confirm with radiographs. Sometimes, the diagnosis is not made until surgery. Unless surgery is done promptly after the fracture occurs, return to normal use of the leg is unlikely.

Lameness Involving the Front or Rear Legs

Panosteitis is an inflammatory bone disease with an unknown cause. It involves the shaft of the long bones. It is most common in German shepherd dogs, but is also seen with frequency in Great Danes, Golden and Labrador retrievers, Doberman pinschers, and basset hounds. Male dogs are more commonly affected than female dogs. Lameness is usually sudden in onset and may vary in intensity. The pain may shift between limbs, or more than one bone may be involved at a time. Placing pressure on the shaft of the involved bone will usually elicit a pain response. Diagnosis is usually achieved with physical examination and radiographs. The disease is self-limiting but some pain medications may be helpful in controlling signs and relieving discomfort.

Osteochondritis dissecans (OCD) is a defect in the smooth cartilage surface within one or more of several joints. Male dogs are most commonly affected. It may affect the shoulder (most commonly), the elbow, the hip, the knee, or the stifle. Some of these defects may heal with confinement of the dog for several weeks. However, most do not and a few may result in a piece of cartilage breaking off and floating freely in the joint. This disease causes pain, which varies in its severity. It is best treated with surgery to remove the defective cartilage.

Hypertrophic osteodystrophy (HOD) is an inflammatory disorder of the growth plates (end) of the long bones. It causes swelling and pain at the end of the bone. Fever, pain, and loss of appetite will occur in more severely affected dogs. It is usually self-limiting, although some dogs may suffer permanent damage to the growth plates and later develop deformed legs. Medication can be given to relieve pain and suppress inflammation.

Nutritional Supplementation of Puppies

It is always recommended that growing puppies be fed the best quality food which can be provided. When this is done, *supplementation with vitamins and minerals should be avoided*. Each dog has the genetic potential to reach one size and one size only. *Nutritional supplementation does not alter this genetic potential*. However, supplements can make the dog reach this size more quickly. When cartilage grows too rapidly, the developing blood supply may not be able to grow at the same rate. This can lead to the cartilage defects associated with OCD.