

The Animal Medical Clinic

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Hip Dysplasia in Dogs

Hip dysplasia (HD) is defined as a deformity of the coxofemoral (hip) joint that occurs during the growth period. Hip dysplasia is a hereditary condition that creates a poorly fitting hip joint. As the dog walks on this joint, arthritis will eventually develop, causing pain in the joint. The degree of lameness that occurs is usually dependent upon the extent of arthritic changes in the hip joint.

Contributing Factors

Dogs suffering from HD have a genetic background, but the releasing factors are many. Two of the most important are overnutrition and excessive exercise, especially in the young puppy.

Prevalence

Most breeds of dogs can be affected with hip dysplasia although it is predominantly seen in the larger breeds of dogs, such as the German Shepherd, St. Bernard, Labrador Retriever, Pointers, and Setters. There is equal distribution of the disease between male and female dogs.

Causes/Transmission

The causes of hip dysplasia are complex and multiple. Environmental and genetic factors are both involved. It is difficult, if not impossible, to pinpoint a single cause.

Clinical Signs

The typical clinical signs of hip dysplasia are rear leg pain, incoordination, and a reluctance to rise from a lying position. Wasting of the large muscles in the rear limbs may eventually develop. Most owners report that the dog has had difficulty in rising for a period of weeks or months; lameness and pain subsequently develop. Again, the severity of signs and progression of the disease usually correlate with the extent of arthritis in the joint. Clinical signs can occur as early as 4-6 weeks of age, but most dogs manifest the disease as a lameness around one to two years of age. Dogs with mild hip dysplasia and minimal arthritis may not become painful and lame until 6-10 years of age.

Diagnosis

Tentative diagnosis of hip dysplasia is made on the basis of history, breed, and clinical signs. A large breed dog that has been slow to rise for several months and now is lame is highly suspect for hip dysplasia; a dog that refuses to rise should also be considered a candidate. Because the clinical signs may mimic other diseases, final diagnosis of hip dysplasia can only be made on the basis of specific radiographic (x-ray) findings. To obtain the proper radiographs, dogs must be carefully positioned on the radiographic table. This procedure requires the use of a short-acting anesthetic. The radiographs are evaluated for abnormal shape of the hip joint and for degenerative changes (arthritis).

Treatment

The degree of clinical signs and arthritic changes in the joints determine the specific approach to therapy. Treatment of hip dysplasia may involve the use of drugs or surgery, or both. The options are as follows:

1. **Anti-inflammatory drugs.** Several drugs will give relief from pain. Aspirin or acetaminophen may work well in some dogs. Other steroidal (cortisone) and non-steroidal drugs may also be used. Most have some side effects and most require administration once or twice daily. Many dogs have severe stomach irritation to ibuprofen so this drug is not recommended. Unfortunately, it is not possible to predict which dog will respond to which drug. Therefore, a series of trials may be needed to find the most effective one for your dog.

Extreme caution is advised when these drugs are given to dogs with a history of kidney disease or with marginal kidney function. Many of these drugs have an adverse effect on blood flow to the kidneys and can lead to kidney failure. This does not appear to be a concern if kidney function is normal. As alluded to above, dogs with a history of ulcers are also at risk for complications. Your veterinarian can determine the risk for your dog.

Anti-inflammatory drug therapy is most often used in older dogs, in dogs that did not get good relief from surgery, or in dogs for which surgery is not feasible.

2. **Surgery:** There are four main procedures that are used to treat hip dysplasia.

Pectineal myotomy is a relatively minor procedure that involves cutting a small muscle on the inside of the leg that puts pressure on the hip joint. It results in no loss of leg function and gives good to excellent relief in 80-90% of dogs. If both hips are abnormal, both hips may be operated at the same time. The dog recovers from surgery in one to two days. However, this procedure does not stabilize the hip joint or prevent progression of arthritic changes. Within a few months to several years, pain and lameness will usually return.

Femoral head ostectomy (FHO) is another choice. The hip joint is a ball and socket joint. FHO is the removal of the ball part of the joint. This gives excellent results in small dogs because a functional "false joint" forms. However, some large dogs may not form this "false joint" very well. This procedure is usually used in large dogs if arthritis is very severe, if the hip dislocates, or if the expense of the other procedures is prohibitive.

Triple osteotomy is a procedure in which the pelvis is cut in three places around the hip joint. The bone is rotated to create better alignment with the femoral head (the ball). It is reattached so that the joint functions in a more normal fashion without looseness and pain. This should only be performed in a dog with no arthritic changes in the joint, with a fairly deep acetabulum (hip socket), and less than 1 year of age. It is an expensive procedure.

Hip joint replacement is possible, as is done in humans. A stainless steel ball and socket are attached to the pelvis and femur in place of the abnormal ones. It is another expensive procedure, but it may give many years of pain-free use of the hips. Although the intent is for the transplant to be permanent, the new joint may loosen after a period of time.

Prognosis

The prognosis is variable depending upon the age of the dog, severity of the dysplasia, and response to medical and/or surgical intervention.

Prevention

Research has shown that the cause of hip dysplasia is related to a combination of genetic and environmental factors. The disease is known to be an inherited condition and the genetics of hip dysplasia are extremely complicated. In addition, environmental factors such as overfeeding and excessive exercise can predispose a dog (especially growing puppies) to developing hip dysplasia. Because the inheritance of the disease is so complicated, many questions remain regarding eradication of the disease.

Here are some practical suggestions:

1. Have your dog radiographed before breeding to be sure the hips are normal. If they are not, this dog should not be bred.

2. Consider a feeding program to slow growth. There is a growing body of evidence indicating that dogs that grow very rapidly are more likely to have hip dysplasia. Many authorities recommend feeding a dog food specially made for large-breed puppies or an adult-type food to puppies of high risk breeds so their growth is slower. They will still reach their full genetic body size, but just not as rapidly.

3. Avoid excessive exercise in a growing puppy. Any abnormality in the structure of the hip joint is magnified if excessive running and jumping occur. It is not necessary to treat your puppy as it were handicapped, but long sessions of running or chasing thrown objects can be detrimental to joints.

Hip Certification

The Orthopedic Foundation for Animals (O.F.A.) is an organization established for the purpose of standardizing the evaluation process of canine hip radiographs. The O.F.A. consists of a board of certified veterinary radiologists who are skilled in detecting hip dysplasia. If the radiographs submitted to the O.F.A. are declared normal, the dog is issued an O.F.A. certificate number indicating that it has normal hip confirmation. The O.F.A. requires that dogs must be a minimum of two years of age to be certified. Many breeders require that a dog must have an O.F.A. certificate before breeding is allowed.

Another hip evaluation program is called the PennHip method. Radiographs are made of the anesthetized dog in such a manner as to place outward force on the hip joints. This can reveal looseness in the joints that may elude detection by the more standard radiographic methods. It is also useful in identifying hip dysplasia in puppies as young as 4 months of age. Although any veterinarian can make the appropriate radiographs and submit them for O.F.A. certification, the PennHip method must be performed by a veterinarian specifically trained and certified in this procedure.

The radiographs must be imprinted with identification information about your dog at the time they are made and developed. This procedure creates a permanent mark on the radiograph. In addition, OFA now requires that certified dogs be permanently marked with either a tattoo or a microchip implant. The implant process is simple and very effective. A tiny microchip is implanted under your dog's skin through a special injection needle. A special scanner can detect these chips through the skin. They can identify the dog and its owner through its code number and a registry system. This is also an excellent means of getting lost dogs back home because the registry system is national in scope.