Hip Dysplasia

Hip dysplasia is abnormal development of the hip joint, usually involving both hips. This causes varying degrees of laxity of the surrounding tissues, malformation of the femoral head, and acetabulum, and osteoarthritis. Hip dysplasia is the most common cause of degenerative joint disease (arthritis) in the hip in the dog.

The cause of hip dysplasia is multifactorial, including genetic factors, environmental factors, rate of growth of the puppies, and dietary influences.

Clinical Signs

Symptoms of hip dysplasia vary with the age of the animal at the time of diagnosis. There are 2 recognizable clinical groups of dogs seen with hip dysplasia:

1. Young animals between 4 and 12 months of age
2. Animals over 15 months of age with chronic disease.

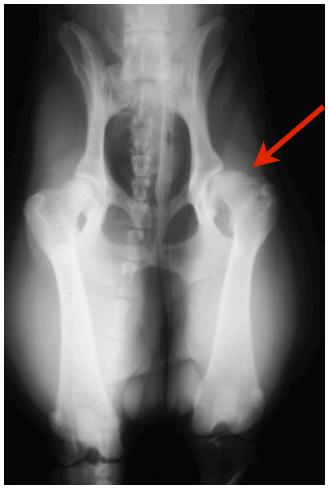
Young dogs often show a sudden onset of clinical signs: a sudden reduction in activity associated with marked soreness of the hind limbs, difficulty rising, decreased willingness to walk, run, jump upwards and climb stairs. Often a “bunny-hopping” gait is seen, and owners may hear a click coming from the hip area when their dog walks.

Older dogs present because they have chronic degenerative joint disease and it’s associated pain. Lameness may be present in one or (more commonly) both hind limbs. Symptoms usually become apparent over a long period of time. Symptoms present include lameness after prolonged or heavy exercise, a waddling gait, preferring to sit rather than stand, and rising slowly and with great difficulty. Two other common instances when symptoms of hip dysplasia seemingly “worsen” are with either a full or partial **cranial cruciate ligament tear** or **spinal problems** such as disc disease or lumbosacral disease.

Most dogs with hip dysplasia most painful when the hips are extended by pulling the rear legs back behind the body.

Diagnosis

A complete physical examination should be performed to determine if your dog’s lameness and other symptoms are due to hip dysplasia. Hip dysplasia rarely causes a sudden onset of lameness.



X-ray of a mature dog with unilateral hip dysplasia and degenerative joint disease (arrow shows the abnormal hip). Note the misshapen appearance of the femoral head and acetabulum (ball and socket). The other hip is normal.

X-ray of a young dog with bilateral hip dysplasia.

Palpation of the hips in a young dog usually reveals joint laxity, although sedation may be required to detect it in some dogs. In older dogs, the joint capsule is thickened and arthritis is present, and laxity is no longer present.

Radiographs are necessary to confirm the diagnosis and evaluate the severity of hip dysplasia. Many older dogs will have radiographic signs of hip dysplasia without clinical signs, so it is always very important to interpret radiographs while considering the dogs symptoms. Most dogs are too painful to have radiographs taken without sedation. Proper radiographic positioning and technique is very important to accurately evaluate the hips and to determine the best treatment.

The Orthopedic Foundation of America (OFA) has been the standard for certification of dog's hips as being free of hip dysplasia. The radiograph is taken after the dog is 2 years of age, and requires radiographs in the hip-extended position. The goal of OFA grading was to decrease the incidence of hip dysplasia, but unfortunately this has not happened.

An alternative to OFA certification is the PennHIP program, which is more scientific and which allows the early diagnosis of hip dysplasia. It measures the passive hip joint laxity or "looseness" of the hip ball in the socket under sedation. PennHIP is more reliable and has the advantage of being accurate on puppies as young as 16 weeks of age. Dr. Lawrence is trained and certified to perform the PennHIP procedure.

Treatment

Conservative Therapy

Many dogs with hip dysplasia have no signs of pain; others have only mild, intermittent signs. A large number of these animals can be treated by conservative methods. This might include any or all or the following:

- Reducing the dog's activity level,
- Weight loss,
- Use of anti-inflammatories (non-steroidals),
- Adequan injections
- Oral glucosamines and fish oil
- LASER treatment
- Extracorporeal Shockwave Terapy
- Regenerative cell therapy is another option, and a Veterinary Specialty Center we perform STEM cell therapy in-house.

Corticosteriods (prednisone) hasten degenerative changes and should be avoided for chronic use.

Surgical Therapy - Immature dogs

Juvenile Pelvic Symphysiodesis (JPS)

JPS is a procedure performed in dogs less than 16 weeks of age with increased joint laxity (as assessed by PennHIP scoring). It involves thermal destruction of the pubic growth plate, causing rotation of the pelvis and improving coverage of the hip and in many cases a reduction in the severity of hip dysplasia-related arthritis. This is a minimally invasive procedure and most dogs can be spayed or neutered at the same time.

Pelvic Osteotomy (TPO or DPO)

Pelvic osteotomy is indicated for young dogs with clinical signs of hip dysplasia (as outlined above) and who have palpable laxity in the hip joint. Dogs who are good candidates for this procedure are most commonly 4 to 8 months of age. The procedure involves cutting the pelvis and rotating it to "capture" the femoral head within the hip joint, providing a more stable joint. To determine whether a pet is a candidate for a pelvic osteotomy, several radiographic views and careful palpation of the hip is performed while the dog is sedated. The "ideal" candidate for pelvic osteotomy would be 5 to 7 months of age, with clinical signs of hip dysplasia, with minimal or no signs of degeneration on radiographs or palpation.

If there are radiographic or palpable signs of degenerative joint disease (arthritis) present, the dog is not a candidate for this procedure.

Surgical Therapy - Mature Dogs

Femoral Head Ostectomy (FHO)

A femoral head and neck excision, also called excision arthroplasty or femoral head ostectomy (FHO), is a commonly performed procedure in veterinary medicine. The main goal of a femoral head and neck excision is to relieve pain by eliminating bony contact between the femur and the pelvis as scar tissue interposes.

Femoral head and neck excision is a non-reversible procedure and must be considered a salvage operation. Nevertheless, it is a valuable surgery for improving the quality of life for many pets by eliminating pain.

Expected Outcome

Removal of the femoral head causes slight limb shortening, some loss of range of motion and a mild persistent gait abnormality, which in many dogs and cats is not noticeable. The rump area may appear slightly asymmetrical. As the main goal is relief of pain, most owners are very happy with the outcome of the surgery. The procedure can be performed bilaterally if necessary.

Aftercare

Early, active use of the limb is necessary to maintain a good range of motion in the hip area. Postoperative rehabilitation is recommended. Passive range-of-motion exercises and leash walking are started immediately. Early on, it is imperative to walk at a slow enough pace that your pet uses the surgery leg - if the pace is too fast, they can easily pick the leg up and not use it.

After 2 weeks activities to encourage use of the leg activities to encourage use of the leg are recommended, such as walking through long grass or in sand, swimming and running.

The postoperative course depends on the reason for the femoral head and neck excision. Pets will usually be toe-touching in 10 to 14 days, partially weight-bearing in 3 weeks and actively using the leg by 4 weeks.

Prognosis

Return to active and pain-free use of the limb is dependent on correct surgical technique, the how long the hip pathology has been present, and the severity of the hip pathology. Some animals may take several months to regain maximum use of the leg, and in some cases of severely displaced hip fractures

Hip Dysplasia in Cats

Hip dysplasia is relatively common in cats, but most cats show minimal or no clinical signs. In cats there is a higher prevalence in the Maine Coon, Persian, Devon Rex and Himalayan breeds.

Extended leg radiograph of a cat with bilateral hip dysplasia