

## Treatment Options for Mature Dogs or Those With Arthritis at the Time of Diagnosis

### *Femoral Head and Neck Excision*

The femoral head and neck excision (FHO) is a commonly performed procedure. This procedure is best suited for small to medium-sized dogs (under 40-50 lbs), with less than favorable results in larger dogs. The FHO is performed by removing the femoral head (ball portion of the joint), which eliminates bone-on-bone contact. Over 2-4 weeks a false joint develops with scar tissue, which, along with the surrounding pelvic muscles, mimics joint function that is similar to the function of the forelimbs. This allows near normal range of motion and significantly relieves the pain of arthritis, making the leg more functional and comfortable. Most dogs become much more active following surgery



*Post-operative radiograph of a FHO*

but physiotherapy is often required for the first 6 weeks. The advantage of this procedure is that it is a relatively quick and inexpensive procedure with few complications, can be performed at any age, and has good results in the majority of dogs. Post-operative exercise restrictions are usually limited to two weeks.

### *Total Hip Replacement*

The total hip replacement (THR) procedure is very similar to that used in human medicine. It is the treatment of choice for medium to large-breed dogs used for working or sporting activities or when optimal hip function is desired. The success rate with this procedure is 85%, and dogs with successful implants are able to perform almost any task performed by dogs with normal hips. In this procedure, both the ball and socket portions of the hip joint are removed and replaced with cobalt chrome and polyethylene implants.

Candidates for total hip replacement are typically large-breed dogs with irreparable disease or injury to the hip joint. The dogs must be fully grown, over 40 lbs, and ideally not overweight. An extensive pre-operative evaluation is required to minimize post-operative complications. Candidates must be cleared for sub-clinical infections (including

dental disease or bladder infection), other debilitating conditions, cruciate ligament damage or neurological disorders. Complications are reported in approximately 15% of cases and include luxation, premature implant loosening (due to infection or bone resorption), and nerve damage. Some complications are treatable but others may require removal of the implants (resulting in a procedure similar to the femoral head and neck excision). Because most of these complications are related to the use of bone cement, a BFX™ (biological fixation) cementless hip replacement system has been developed by BioMedtrix and has been used in many referral clinics in the past with a higher success rate. Not all dogs are candidates for this cementless system and each will need to be assessed intra-operatively for bone quality. Dogs that are not candidates will receive a cemented implant instead.

Proper home care after surgery is very important to the success of the procedure. Strict confinement and close supervision is required for the first eight weeks after surgery and



*Post-operative radiograph of a cementless THR & cemented THR*

yearly x-rays are required to monitor for implant loosening. Most dogs (80%) achieve a level of comfort and activity that will not require bilateral hip replacement; however, working dogs or dogs in high activity sports may need both hips replaced.

**Have you been referred?  
Things to bring at the time of your  
consultation:**

- Recent radiographs and blood work
- Medications your pet is being given

**1400 Telegraph Road  
Bloomfield Hills, MI 48302  
(248) 334-6877  
www.OVRS.com**



## Oakland Veterinary Referral Services



## SURGERY

## Canine Hip Dysplasia

**Canine Hip Dysplasia (CHD)** is a developmental disorder of the hip that begins with joint laxity and progresses to arthritis over a period of several months to years. It is one of the most common skeletal diseases seen by veterinarians. The condition is more common in large breed dogs, but can be seen in any breed.



*Young dog with hip dysplasia*



*Normal hips*

Multiple genes are involved in the inheritance of hip dysplasia, and many other factors influence its development, including body type, size, growth rate, and nutrition. Over-feeding and dietary supplementation for maximal growth have been shown to increase the incidence of hip dysplasia in young, growing, large-breed dogs. Conversely, the development of hip dysplasia can be delayed, and its severity diminished when the growth rate of pups is restricted.

At OVRS we offer one of the most comprehensive programs for the diagnosis and surgical management of hip dysplasia. Medical and/or surgical treatment may be recommended, depending on the individual circumstances. Medical management usually consists of moderate consistent exercise, weight loss and anti-inflammatory medications for pain management. Low impact activity like swimming is ideal to maintain muscle mass with minimal joint stress.

Several surgical options are available for treating hip dysplasia. They include: juvenile pubic symphysiodesis, triple pelvic osteotomy, total hip replacement and femoral head and neck excision.



## Diagnosis

The diagnosis of hip dysplasia is based on history, physical examination, and radiographic evaluation. A typical history may include any or all of the following:

- Difficulty or stiffness upon rising
- Rising using front legs only and dragging rear
- “Bunny hopping” gait
- Short stride in rear legs
- Reluctance to exercise or climb stairs
- Rear limb lameness
- Soreness in hips
- Waddling rear limb gait

The clinical signs may begin between five and eight months of age or may develop after skeletal maturity. Some dogs don't have noticeable problems until eight to ten years of age or older. The onset of clinical signs may appear suddenly or gradually. This variability is due to the individual severity of the disease as well as pain tolerance of the pet. Most dogs with CHD are most painful when the hips are extended by pulling the rear legs back behind the body.

Palpation of the hips usually reveals joint laxity, although anesthesia may be required to detect it in some cases. In young dogs or in very mild cases, joint laxity may be the only detectable abnormality. Later in the disease arthritic changes are seen. Radiographs are necessary to confirm the diagnosis and evaluate the severity of CHD. The standard radiographic position is with the dog lying on its back with both rear legs pulled straight back and parallel to each other. Most dogs with CHD are too painful to tolerate this position awake, so sedation or anesthesia is usually necessary. Proper radiographic positioning 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 dogs' hips as being free of CHD. The radiograph is taken after the dog is 2 years of age and requires the hip-extended position. Unfortunately, progress has been disappointing in reducing the frequency of CHD using OFA alone. Recently the PennHIP program has emerged as a new scientific method for the early diagnosis of CHD. It measures the passive hip joint laxity or “looseness” of the hip ball in the hip socket under sedation or anesthesia. PennHIP is more reliable and has the advantage of being accurate on puppies as young as 16 weeks of age. Dr. Henney is trained and certified to perform the PennHIP procedure.

## Treatment Options for Immature Dogs

### *Juvenile Pubic Symphysiodesis*

Juvenile pubic symphysiodesis (JPS) is a procedure performed in dogs less than 20 weeks of age with increased joint laxity (assessed by PennHIP scoring), or with dogs with a strong genetic predisposition to hip dysplasia (e.g., an accidental breeding of two dysplastic dogs). It involves thermal destruction of the pubic growth plate, causing rotation of the pelvis and improved coverage of the hip as the puppy grows. This procedure is minimally invasive and most dogs can be spayed or neutered at the same time. Initial results from this procedure are encouraging but long-term results are not yet available.

### *Triple Pelvic Osteotomy*

The ideal candidate for the triple pelvic osteotomy (TPO) procedure is a young dog (5-10 months of age) with clinical signs caused by hip dysplasia (including pain and hip laxity) but without radiographic signs of arthritis. In this procedure, the pelvis is cut in 3 locations to allow rotation of the acetabulum (hip socket) into a normal position. This seats the femoral head more deeply into the socket and improves stability. The pelvis is stabilized in this new position with a specially designed bone plate. The hip is now able to remodel in the new position without developing arthritis. With proper case selection, approximately 90% of dogs achieve good to excellent results and return to athletic endeavors. Owner satisfaction is high and they had no reluctance recommending the procedure to others. If a TPO is needed on the opposite leg, it is performed 3-6 weeks later.



When arthritis develops in a dog with hip dysplasia, the damage is irreversible. A triple pelvic osteotomy will not restore normal hip function or eliminate pain in these dogs. Two procedures available for these patients include the femoral head and neck excision and the total hip replacement.

*At left, post-operative radiograph of TPO*