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MEDVET CLINICAL REVIEW

MANAGEMENT OF HIP DYSPLASIA IN DOGS

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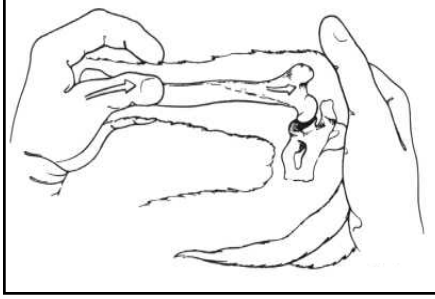
Hip dysplasia is a common, potentially debilitating disease most often affecting large breed dogs. It may present in the immature dog as pain associated with coxofemoral laxity or in the mature dog as discomfort from degenerative joint disease (DJD). Diagnosis is generally straightforward with characteristic historical and physical examination findings including a "bunny-hopping" running gait, rear limb muscle atrophy, a narrow-based stance, pain on hip manipulation, and palpable coxofemoral subluxation in the form of a positive Ortolani sign **(Figure 1)**. Pelvic radiographs confirm the suspected diagnosis by demonstrating some degree of coxofemoral subluxation, variable arthritic changes, and decreased muscle mass.

Medical management is the preferred first line of treatment when clinical signs of hip dysplasia are observed. Non-surgical therapy includes NSAID administration, low-impact activity, neutraceutical administration, and weight management. Weight loss in particular has proven very effective at reducing or eliminating signs of hip pain and should always be attempted. Neutraceutical use, especially in oral form, is controversial with conflicting results reported in both human and veterinary scientific studies. Of these "supplements" Adequan® appears to provide the most consistent results and is most effective in those dogs that have not yet developed severe DJD. When medical management no longer provides satisfactory relief of clinical signs, surgical options are considered.

Figure 1



The most commonly used procedures are femoral head ostectomy (FHO), triple pelvic osteotomy (TPO), and total hip replacement (THR). A basic understanding of each procedure's advantages and disadvantages is helpful in selecting the proper technique **(Table 1)**. While each procedure has its individual merits, total hip replacement provides superior long-term results and biomechanical function.

Figure 2

A THR can be done in any appropriately sized (generally > 40-50 lbs.) skeletally mature dog regardless of the degree of coxofemoral subluxation or DJD. The implants are expected to last the life of the dog and the overall complication rate is low **(Figure 2)**. Though the majority of dogs have bilateral coxofemoral disease, only 20% of dogs require bilateral THRs. The reason for this is not completely understood but shifting of body weight to the replaced hip is in part responsible. Return of limb usage and function is very quick with most dogs bearing weight on the operated leg the day

after surgery. Overall owner satisfaction is very good with the majority of clients very pleased with their dog's comfort and function. Dogs with poorly responsive systemic infection or whose owners have financial constraints may not be ideal candidates for THR.

Both the TPO and FHO are procedures that can enhance the comfort of affected dogs but have specific selection criteria. Large dogs can have FHOs and be expected to have fair to good function, but their overall biomechanical function can be limited following an FHO. An FHO is a salvage procedure and is reserved for patients for whom a THR or TPO cannot be performed. The TPO is limited to immature dogs without radiographic signs of DJD. Ideally, subluxation should be mild because severe subluxation necessitates a greater degree of pelvic osteotomy rotation resulting in limited pelvic limb abduction capability. The TPO was once thought to prevent DJD in operated hips, but recent reports have shown this not to be true. In the proper candidate however, the TPO can provide good long-term results.

Each patient and client situation is unique. Determining the proper surgical procedure should be based on patient signalment, physical examination, and radiographic findings. Equally important are the client's expectations and goals for their companion.

Suggested Readings

Massat BJ, Vasseur PB. Clinical and radiographic results of total hip arthroplasty in dogs: 96 cases (1986-1992). *J Am Vet Med Assoc* 205:448-454, 1994

Piermattei DL, Flo GL. The hip joint. In: Small Animal Orthopedics and Fracture Repair. Philadelphia, WB Saunders, 1997, pp 422-468.

TABLE 1

Femoral Head Ostectomy		
Indications	Pros	Cons
♦ Dogs < 40 lbs. (generally)	♦ Eliminates pain	♦ 80% function
♦ Other surgical techniques not an option	♦ Less Expense	♦ False joint
♦ Salvage procedure for failed surgery		♦ Less function in large dogs
Triple Pelvic Osteotomy		
Indications	Pros	Cons
♦ Young dogs (<9 months of age)	♦ Eliminates pain	♦ Screw loosening
♦ No DJD present	♦ Retain "normal" joint	♦ Limited limb abduction
♦ Subluxation rather than luxation	♦ Very good results	♦ Expense
Total Hip Replacement		
Indications	Pros	Cons
♦ Dogs older than 9 months of age	♦ Eliminates pain	♦ Greater Expense
♦ Large enough dog to accept prosthesis	♦ Normal range-of-motion	♦ Potential complications
♦ Highest level of function desired	♦ 80% only need 1 hip done	
	♦ Excellent results	

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