

MEDVET CLINICAL REVIEW

Juvenile Pubic Symphysiodesis for Treatment of Hip Dysplasia in Dogs

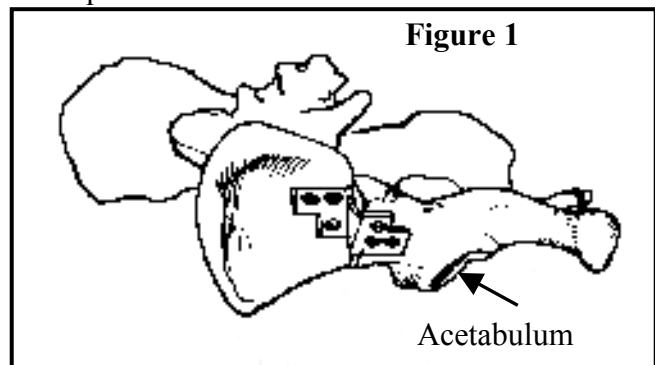
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Canine hip dysplasia (CHD) is a potentially debilitating disease affecting primarily large breed dogs. Many factors influence the development of CHD including genetics and nutrition. Coxofemoral joint laxity and incongruity, the hallmarks of CHD, lead to the development of degenerative joint disease. Early clinical signs of CHD are usually managed medically with anti-inflammatory drugs, low-impact activity, weight control, and nutraceuticals. As clinical signs worsen, surgical intervention is recommended. Triple pelvic osteotomy (TPO), excision arthroplasty, and total hip replacement are the most commonly used surgical procedures for treatment of CHD. While excellent results can be achieved with these surgeries, they require a considerable amount of owner financial, emotional, and time investment and can be technically demanding to perform. Recently, a surgical procedure has been introduced that appears to greatly improve dysplastic hips by altering development of the growing dog's pelvis.

Juvenile pubic symphysiodesis (JPS) causes acetabular rotation that significantly improves coxofemoral coverage by prematurely closing a dysplastic puppy's pubic growth plate. The goal of JPS is similar to that of the TPO; decrease hip laxity by increasing acetabular ventroversion and improving femoral head coverage (**Figure 1**). TPO requires cutting, rotating, and plating a section of the pelvis to increase femoral head coverage. JPS achieves similar results by creating tension at the pubis and using the continued growth of the rest of the pelvis to achieve acetabular rotation. The growing cells of the pubic growth plate are destroyed during the surgical procedure. Since the rest of the pelvis continues to grow the pubic bone acts as an anchor causing the pelvis and acetabulum to rotate ventrally (**Figures 2 and 3**). Dysplastic puppies are reported to return to a normal gait and achieve diminished hip laxity following JPS.

A recent study showed dramatic improvements in hip coverage and hip laxity in dysplastic puppies following JPS. Puppies had normal, pain free gaits without any complications from the pubic growth plate closure. The growth plate closure did result in a narrowed pelvic canal but this did not appear to be clinically significant. Results indicated that the greatest benefit from JPS was achieved in puppies 3-4 months of age but significant improvement can be expected in patients up to 5 ½ months old. Puppies older than 24 months are not expected to improve significantly following JPS.

Juvenile pubic symphysiodesis is considered to be a prophylactic procedure since most dogs do not display clinical signs of hip dysplasia until they are older than 6 months of age. JPS should be strongly considered in puppies of proper age at risk for hip dysplasia. Risk factors include puppies where one or both parents have hip dysplasia or when hip laxity is demonstrated in the

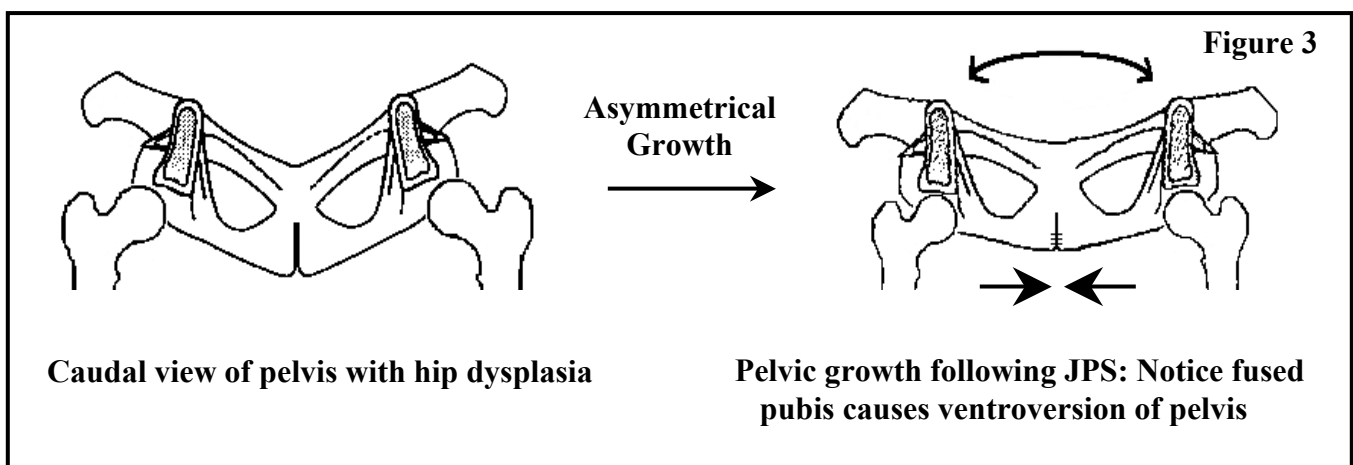
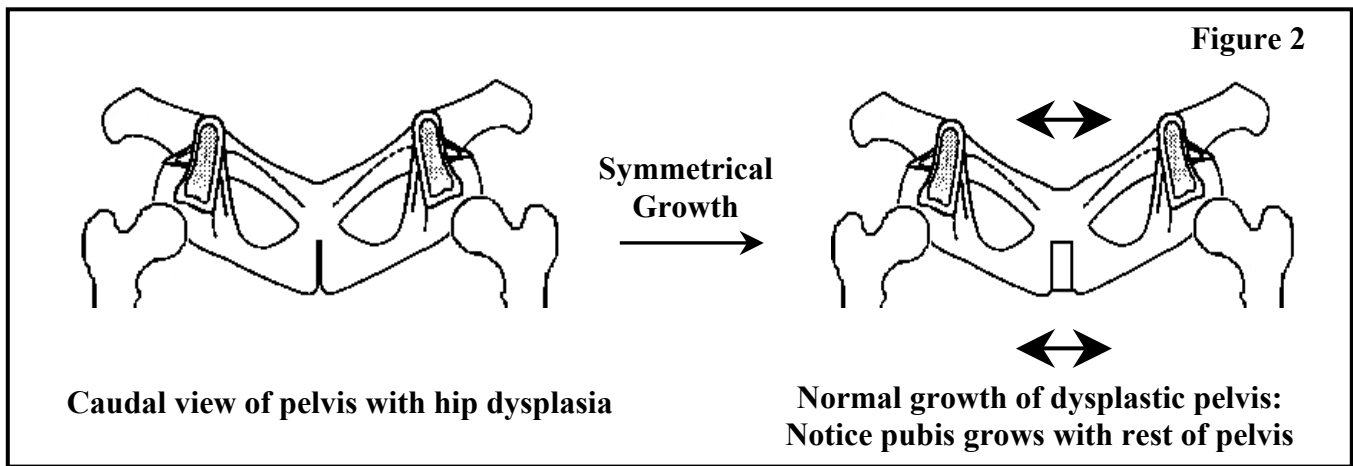


puppy on physical examination or radiographs. Some institutions have gone as far as to recommend JPS for puppies of any breed potentially at risk for hip dysplasia (Labrador retrievers, Rottweilers, German Shepherds, Golden retrievers, etc.), regardless of familial history. All puppies are surgically sterilized at the time a JPS is performed because only the physical deformity is corrected not the genetic cause.

This is a very exciting technique and is expected to change how hip dysplasia is managed in the future. This procedure has been preformed at MedVet and results appear to be similar with those previously described. JPS is easy to recommend because it is effective, virtually complication-free, has minimal postoperative restrictions, and is far less invasive and expensive compared to traditional surgical procedures. If you have any questions regarding juvenile pubic symphysiodesis or have patients that may benefit from this procedure please contact Dr. Matthew Barnhart.

Suggested Reading

Dueland RT, Adams WM, Fialkowski JP, et al. Effects of pubic symphysiodesis in dysplastic puppies. *Vet Surg* 2001;30:201-217.



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