

InTown Veterinary Group Newsletter

Volume 8, Issue 3
June 2008

InTown Veterinary Group is dedicated to providing referring veterinarians and their clients with an unparalleled range of emergency & specialty services.

Services:

Acupuncture:

Essex Referral, N. Andover, MA
Mass Vet, Woburn, MA

Dermatology:

Mass Vet, Woburn, MA

Emergency/Critical Care:

Essex Referral, N. Andover, MA
Mass Vet, Woburn, MA
Port City Vet, Portsmouth, NH

Internal Medicine:

Mass Vet, Woburn, MA
Port City Vet, Portsmouth, NH

Neurology:

Mass Vet, Woburn, MA

Ophthalmology:

Essex Referral, N. Andover, MA
Mass Vet, Woburn, MA

Physical Therapy & Rehabilitation:

Mass Vet, Woburn, MA

Radiology:

Mass Vet, Woburn, MA
Port City Vet, Portsmouth, NH

Surgery:

Essex Referral, N. Andover, MA
Mass Vet, Woburn, MA
Port City Vet, Portsmouth, NH

In This Edition:

Article:

Juvenile Pubic Symphysiodesis: What you Need to Know2
Written by Lauren Blaeser, DVM, DACVS

Notes :

Upcoming Technician Continuing Education Lectures:

Dermatology Diagnostic Tests: Swabs, Scrapes, Tapes & More! (2CEU)
presented by **Jill L. Abraham, VMD, DACVD**

Tuesday, July 22, 2008, 7:00 - 9:00 pm at Mass Vet in Woburn, MA.

Wednesday, July 23, 2008, 7:00 - 9:00 pm at Bulger Animal Hospital in N. Andover, MA.

For more information and to sign up, please contact Betsy Hensley, CVT at bhensley@InTownVet.com, or call: (978) 651-2278. The cost for this lecture is \$50.



Upcoming Doctor Continuing Education Lectures:

For an always current list of upcoming CE, go to www.InTownVet.com & click on referring vets.

Upcoming Lectures:

Tues. June 17 - Corneal Ulcers, at Mass Vet, Woburn, MA

Tues. Sept. 23 - Feline Ophthalmic Conditions, at Essex Vet, N. Andover, MA

Tues. Oct. 7 - Urology Cases, at Mass Vet, Woburn, MA

Register with Sommer at ReferringVets@InTownVet.com, or by calling (781)305-2240.

Hospital Information:

■ Essex County Veterinary Referral Hospital
247 Chickering Road, N. Andover, MA 01845
Tel:(978) 725-5544 Fax: (978) 975-0133
www.InTownEssexVet.com

■ Port City Veterinary Referral Hospital
215 Commerce Way, Portsmouth, NH 03801
www.InTownPortCityVet.com
(Opening: August 2008)

■ Massachusetts Veterinary Referral Hospital
20 Cabot Road, Woburn, MA 01801
Tel: (781) 932-5802, Fax: (781) 932-5837
www.InTownMassVet.com

Dr. Lauren Blaeser practices at
Essex County Veterinary Referral Hospital in N. Andover, MA.



Juvenile Pubic Symphysiodesis. What you need to know

Lauren Blaeser, DVM, DACVS

Canine hip dysplasia (CHD) is a common orthopedic condition among medium to large breed dogs. Despite our best efforts to eradicate this condition, its incidence has not changed significantly over the years. CHD is a multifactorial condition which suggests our inability to eliminate it from certain breeds. Much research has been devoted to early detection of CHD and methods to decrease the risk of developing the debilitating Osteoarthritis (OA). The purpose of this article is to discuss surgical options for preventing OA progression, in particular the Juvenile Pubic Symphysiodesis procedure. In addition we will consider different diagnostic techniques for early detection of hip dysplasia.

There are several reported surgical procedures considered preventative for hip dysplasia. The premise behind these procedures is that osteoarthritis develops as a result of joint instability and subluxation. The consequence of joint instability is the development of fibrillation and degeneration of the cartilage in the "stress areas". By eliminating abnormal movement within the joint, the cartilage does not sustain abnormal pressure.

The most common procedure is the triple pelvic osteotomy (TPO) which eliminates joint instability by rotating the acetabulum around the femoral head in one surgical procedure. The relative success of the TPO procedure has been investigated and documented in both experimental and clinical cases. The following guidelines are recommended for determining whether an animal is a good candidate for the TPO procedure:

1. The "window of opportunity" refers to a young dog between the ages of 6 and 10 months.
2. Clinical signs of hip dysplasia: We do know that not all patients with hip laxity develop clinical signs associated with hip dysplasia. The TPO is an invasive procedure with documented complications therefore offering it as a preventative procedure might be difficult to sell to yourself and the client.
3. No degenerative joint disease noted on radiographs: The success of the procedure depends upon the health of the acetabulum.
4. A positive ortolani with good "capture": The angle of reduction and subluxation are estimated - greater than 30-35 degrees is a concern. Also, if these angles are close to one another (< 5 degrees), this suggests rim damage.
The state of the dorsal acetabular rim is reflected in the "crispness" of the reduction: a crisp drop suggests minimal rim damage; a soft, sliding feel suggest damage and "rounding".
The feel of the return into the acetabulum is also assessed: A soft landing suggests that there is already round ligament and ventral capsule proliferation beginning to fill the acetabulum.
5. Arthroscopic examination. A recent study compared radiographic and arthroscopic abnormalities in juvenile dogs with clinically apparent hip dysplasia. They found that radiographic abnormalities were seen in 13 of the 14 joints (93%) with grade 4 arthroscopic abnormalities, but in only 23 of the 46 joints (50%) with grade 2 or 3 arthroscopic abnormalities. This suggests that pre-operative arthroscopic findings are a better predictor of outcome than radiographic evidence of OA.

The limitations of the TPO are the high post operative morbidity, the small risk of significant complications such as implant failure and improper healing, and the small window of opportunity for performing the procedure. Screw loosening, with subsequent movement of the acetabular fragment, sometimes with pelvic canal narrowing, is common. It can be reduced by ensuring that the proximal screws engage the sacral wing and body. One paper suggests that the screws be assessed 2 weeks post-op, and, if loosening is evident, the screws are tightened under fluoroscopic guidance. In high risk patients (i.e., big and heavy patients), a ventral plate adds significantly to the strength of the repair.

A more ideal approach to preventing osteoarthritis secondary to hip dysplasia is a minimally invasive procedure that is simple, inexpensive and promotes improved coverage of the femoral head with an elimination of joint laxity. Juvenile pubic symphysiodesis (JPS) has been proposed as such a procedure. The premise of this surgery is to prematurely fuse the pubic symphysis in order to promote ventro lateral acetabular rotation. The acetabula would be

fixed ventromedially to the underdeveloped pubic bones while the dorsolateral aspect of the acetabula rotates outward. When this rotation occurs there would be improved acetabular coverage of the femoral head and an improvement in hip laxity.

An early study in guinea pigs found that pubic symphysiodesis did result in outward rotation of the acetabula. Further investigation looking at the effects of the JPS procedure at four months of age in Greyhounds found a decrease in the distraction index (DI) score and an increase in acetabular ventroversion. With evidence that the procedure was effective in improving hip confirmation, researchers looked into finding the ideal age for performing the procedure. A comparative study in dogs aged 12 weeks to 24 weeks showed a greater acetabular response in the younger patients. The study further showed that the procedure:

- Improved the confirmation of the hip with a significant change in the acetabular angle.
- Decreased the dorsal acetabular rim angle.
- Produced a final mean DI of 0.28 at a later recheck exam.



Fig. 1a.

Fig 1a: Pre operative 14wk old lab with 0.54 DI bilateral.



Fig. 1b.

Fig. 1b: 14 weeks later post JPS.

A one year follow up study found that 25% of the JPS patients went on to develop OA, compared with 83% of the control dogs. In all of these studies the procedure was associated with a low morbidity rate.

The limitation of this procedure is the difficulty in patient selection. Most patients have not become clinical for hip dysplasia in the period during which the JPS must be performed. Few clients will present patients for an evaluation of orthopedic abnormalities before they recognize the problem through obvious clinical signs. The current recommendation is for at risk dogs to be evaluated at 14-15 weeks of age. During this exam patients are sedated and palpated for an ortolani sign. A positive ortolani sign indicates a patient considered to be at risk of developing hip dysplasia. However, the ortolani palpation method has a low specificity and sensitivity for detecting hip dysplasia which leads to the second

limitation of the JPS procedure. There is no diagnostic test for patients less than four months of age that definitively identifies which patients will develop osteoarthritis. These tests only isolate patients at risk of developing OA.

The hip-extended radiograph has been the view utilized by the Orthopedic Foundation for Animals (OFA) in identifying patients with hip dysplasia. The hip extended view is a ventrodorsal radiograph projection of the pelvis with the hips extended. Early signs of hip dysplasia include a femoral head that conforms poorly to the acetabulum with less than 50% coverage of the femoral head within the acetabulum. The limitation of the extended view is that the view is not in a natural standing position; therefore abnormal forces are present around the joint. These forces can cause a “wind up” of the joint by tightening the joint capsule, round ligament and muscle. The “wind up” can artificially tighten the joint and create the illusion of greater than 50% coverage of the femoral head. The result is a low specificity with a high number of false negatives. At eight months of age the sensitivity and specificity of the extended hip view is 38 and 96% respectively.

Hip laxity is believed to be the important component of hip dysplasia. For this reason radiographic techniques were developed to measure and quantify hip laxity. The distraction index score (PennHip) measures the passive hip joint laxity obtained by use of a distraction radiographic technique. The hip laxity measured

is quantified with a DI score. A study comparing DI to two palpation techniques and five radiographic techniques found that the DI had the best sensitivity/specificity for detecting hip dysplasia at six and ten weeks of age. The conclusion was that DI was more helpful than OFA and that the ortolani had 85% false negatives for projecting OA. Another study found that the DI at four months correlated with the DI determined at twelve months. General assumptions for the Penn Hip are:

- 1) $DI < 0.3$: patient has no OA potential
- 2) $0.3 < DI < 0.5$: patient has low OA potential
- 3) $0.5 < DI < 0.7$: patient has moderate OA potential
- 4) $DI > 0.7$: patient has high OA potential

The dorsolateral subluxation score (DLS) was developed to not only take into account hip laxity, but also to factor in weight bearing forces. The DLS places the animal in sternal recumbency with their knee joints in contact with the table. The score is calculated as a percentage of the femoral head medial to the most lateral point of the

cranial rim of the acetabulum. One study evaluated the use at eight months of age and found the DLS score to be 83% sensitive and 84% specific. However, in this same study, researchers found poor agreement between the scores at four months of age and older.

The current recommendation for screening patients for the JPS procedure is to recommend that clients of at-risk patients screen their dogs at 14 weeks. At that time the patient should be sedated and palpated for an ortolani sign. Sedating the patient will negate the influence of muscle tone and reflexes during the examination.


The first step of the ortolani is to force subluxation of the femoral head in a dorso-lateral direction (otherwise known as the Barlow maneuver). The second step is to slowly abduct the leg until reduction is achieved.

Relocation angles greater than 35 degrees, and subluxation angles greater than 25 degrees carry a much more guarded prognosis, as at 16 weeks only a 15 to 20 degree of rotation of the acetabulum is expected. Extended hip films and PennHip radiographs should also be taken at this time. The JPS procedure is recommended for patients with a positive ortolani and a PennHip score of greater than 0.3. It is important to discuss with the

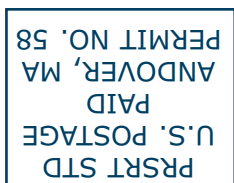
client that these diagnostic findings suggest that their dog is at risk for developing OA.

The JPS procedure proves to have a very low morbidity with a good success rate for preventing the development of OA. Further studies with larger sample sizes will need to be carried out before an actual success rate is known.

An evaluation should be performed six months following the procedure to re-evaluate the patient. During that exam PennHip films are readmitted for a second DI score. The client should also be questioned at this time about whether the patient has begun to show signs of hip dysplasia. A TPO could be considered if the patient displays a positive ortolani, an unchanged DI score and clinical signs indicating possible hip dysplasia.

A recent study compared long-term outcomes of JPS and TPO in dogs with hip dysplasia. The study suggest that JPS and TPO have similar effects on hip joint conformation in dogs with moderate to severe hip dysplasia, but that neither procedure eliminates the hip joint laxity characteristic of hip dysplasia or the progression of degenerative changes. 

References available on request.



Port City Veterinary Referral Hospital



Downtown
Portsmouth, NH

Port City Veterinary
Referral Hospital
is located at
215 Commerce Way
Portsmouth, NH 03801

Announcement: Port City Veterinary Referral Hospital

Referring Veterinarians,

We are very excited to announce the opening of a new hospital in Portsmouth, New Hampshire in August 2008. At present we are in the process of renovating the building at 215 Commerce Way in Portsmouth to better suit the needs of a veterinary referral and emergency hospital.

Initial services at Port City Veterinary Referral Hospital will include:

- 24 hour emergency services
- Internal Medicine
- Radiology
- Surgery

Additional services and diagnostic tools we anticipate offering by early 2009 include, but are not limited to:

- Ophthalmology
- Physical Therapy
- Computed Tomography
- Continuing Education Lectures
- Real time online access to inpatient medical notes

Browse our website (pages will be posted soon) for ongoing updates on new services, doctors and opening information. The address is: www.InTownPortCity.com. We are always pleased to discuss any questions you may have regarding developments, services and new doctors at all of the InTown Veterinary Group hospitals. Please do not hesitate to call if you have questions.

Best regards,



G. Ames Prentiss,
CEO
InTown Veterinary Group