MEDVET
MEDICAL CENTER FOR PETS

Update

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A New Frontier in Glaucoma Management

Diode Endoscopic Cyclophotocoagulation in Canine and Feline Patients

Dineli Bras DVM MS DACVO

Glaucoma is one of the primary causes of blindness in our canine patients. Early diagnosis of glaucoma can offer a good prognosis for *short-term* intraocular pressure (IOP) control using topical and oral carbonic anhydrase inhibitors as well as prostaglandin analogues. Control of IOP and preservation of vision long-term however, has always carried a poor prognosis. When IOP begins to rise in the face of aggressive medical management and the patient has retained vision, surgical treatment is often considered.

Surgical goals are to either increase aqueous humor outflow or decrease aqueous humor production. When attempting to decrease aqueous humor production, the ciliary body is the target tissue. Because the ciliary body is well pigmented, its structure, and thereby function, can be easily altered through treatment with a diode laser, termed cyclophotocoagulation.

There are two approaches for achieving cyclophotocoagulation. Transscleral application is the conventional method but the ciliary body is not directly visualized during the procedure, which can result in collateral damage to the sclera, retina, iris and cornea and often resulting in moderate to severe intraocular inflammation, cataract formation, or corneal ulceration. Transscleral cyclophotocoagulation (TSCPC) carries at best a 50% chance of controlling IOP for 6 months post-operatively.

The newest approach for cyclophotocoagulation is through the use of an endoscopic system with diode laser capability (**endolaser cyclophotocoagulation, ECPC**). This intraocular technique provides *direct visualization* of the ciliary body thereby reducing the potential for collateral tissue damage (**Figure 1**). It allows laser settings to be individualized intraoperatively until reaching the desired effects and eliminates the potentially blinding immediate post-operative IOP spikes that can be seen with TSCPC.

We have performed this procedure in a total of 22 feline /canine patients. This technique has provided a decrease in IOP, a good control in IOP immediately postoperatively and in 94% of treated patients at the time of last follow-up (range =1 month to 1.5 years), and 85% of patients have retained vision. Comparing the highest preoperative IOP with the IOP at last follow-up

(continued next page)

MedVet Doctor Achievements

Matthew Barnhart DVM MS DACVS

Dr. Matthew Barnhart was recently nominated for and accepted into the membership of the **International Association for the Study of Internal Fixation (AO Vet)**. AO Vet is a non-profit specialty orthopedic group established in 1969 as a Swiss association with international membership. The Organization's mission is to improve the care of veterinary patients with musculoskeletal injuries and their sequelae, through education and research in the principles, practice and results of surgical treatment. AO Vet concentrates its efforts on the development and improvement of new orthopedic implants and instruments, provides continuing education courses for small and large animal veterinarians, funds surgical fellowships, and promotes the exchange of experiences with our colleagues in human medicine. Congratulations to Dr. Barnhart.

Terah Robbin DVM

We are proud to report that Dr. Terah Robbin, our 3rd year ophthalmology resident, was the recipient of the 2006 American College of Veterinary Ophthalmologists (ACVO) **Resident's Research Award for the Best Research Paper**. The paper was presented at this year's ACVO meeting and was entitled: "The effect of phosphorylated AKT inhibition on posterior capsular opacification in the canine lens." Congratulations to Dr. Robbin on this impressive achievement.

(**Glaucoma** *from front page)*

examination, the average decrease in IOP after ECPC was 61.7%.

ECPC has offered tremendous advantages when compared to TSCPC, cryoablation, hyperthermia, or gonioimplants. Not only have we achieved great success in controlling IOP and vision preservation, but we have observed minimal post-operative inflammation, and have not encountered the common complications seen with TSCPC (i.e. corneal ulcers). In addition, in most of our patients, we have been able to reduce topical and systemic medications and, in 3 cases, we have been able to discontinue medical therapy altogether.

ECPC has also been used in combination with cataract surgery for patients that previously would not be considered surgical candidates because of pre-operative IOP elevations. Also, ECPC has been combined with intracapsular lens extractions (ICLE) for those patients with anterior lens luxation and secondary glaucoma. The success rate for controlling IOP postoperatively in these patients has been excellent (>90%) and we are currently evaluating the success rate as a prophylactic mode of glaucoma therapy in patients with anterior lens luxation.

In addition to glaucoma therapy, we utilize the endolaser to address various other ocular disorders. We perform diagnostic retinal aspirates, treat iridal melanomas, ciliary body neoplasias and create retinal scarring to halt progression of retinal detachments.

MedVet is proud to have the first veterinary ophthalmology department in the country to offer endolaser cyclophotocoagulation. Dr. Dineli Bras will be offering monthly conferences about this topic. Contact the ophthalmology department for future locations and times. ***All participants will have the opportunity to receive free initial consultation for those cases referred before June.*** Please do not hesitate to contact Dr. Dineli Bras, Dr. Milt Wyman, or Dr. Terah Robbin if you have any questions regarding this diagnostic and therapeutic modality.

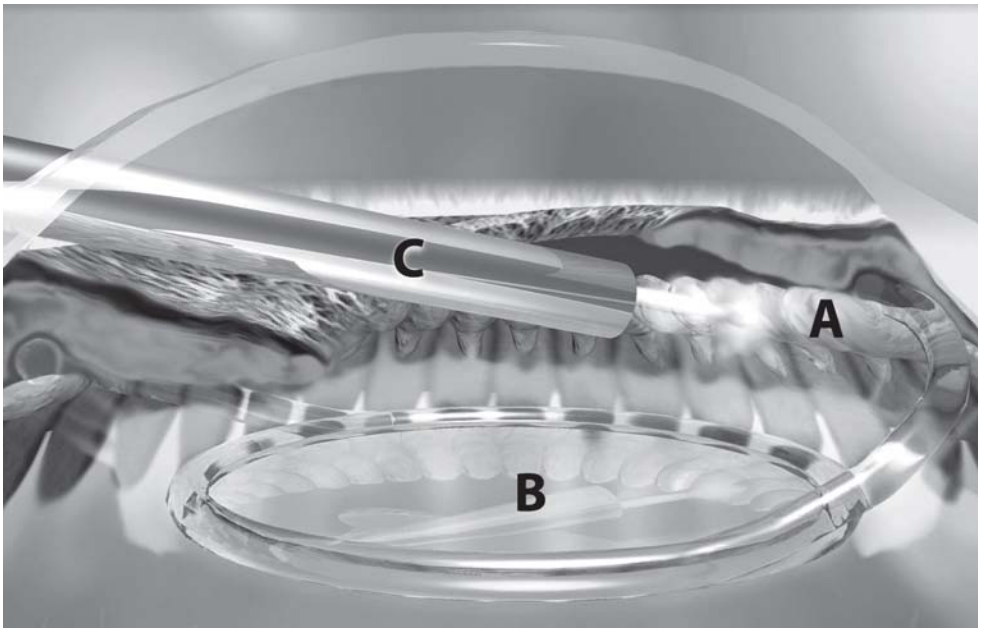

Figure 1*: Schematic drawing of the anterior segment of the eye showing the limbal approach for endocyclophotocoagulation of the ciliary body (**A**) after intraocular lens implantation (**B**). The straight, 20 gauge endoscopic probe **(C)** has three functions in one: a diode laser beam, a light source, and a camera.*

Minimally Invasive Surgery

Matthew Barnhart DVM MS DACVS

Minimally invasive surgery (MIS) has been used for decades in human patients but has only a recently begun to be utilized in veterinary medicine. MIS is performed by utilizing a variety of specialized equipment and instruments that allow the surgeon to visualize and manipulate organs/structures and treat various disorders without making large incisions or "directly" entering the patient. For example: traditionally, to biopsy multiple abdominal organs, a veterinary surgeon would perform a midline celiotomy to gather the samples. Now, however, laparoscopy can be done by making 2-3 small punctures in the abdominal wall. Through these punctures, a rigid endoscope with attached camera and fiberoptic light source is introduced along with various instruments that the surgeon uses to manipulate and visually inspect organs, take biopsies and suture/staple biopsy sites.

MIS has numerous advantages over traditional surgical approaches (**Table 1**). Perhaps the greatest benefit observed in human and veterinary patients is the dramatically diminished postoperative pain and rapid return to function achieved. For example, most arthroscopy patients can be sent home the same day as surgery and the duration of postoperative restrictions can be as shortened by as much as 50-75% compared to an arthrotomy. Laparoscopy, thoracoscopy, and arthroscopy have numerous applications (**Table 2**). The disadvantages of MIS include the facts that the "learning curve" for developing MIS proficiency is steep and the equipment required is expensive. The surgeon must also be careful to prevent iatrogenic damage to anatomic structures/organs when entering body cavities.

MIS performed at MedVet has been met with great success. We are excited to offer it to your clients to help maximize their pet's postoperative comfort, speed their recovery and improve surgical results. If you have any question regarding MIS please do not hesitate to contact the MedVet Surgery Department.

Table 1
Advantages of MIS vs. Traditional Surgery

- Magnification from scope enhances ability to visualize organs/structures
- Small scope size allows improved access to joints, etc.
- Markedly diminished postoperative pain
- Lower patient morbidity
- Shortened postoperative recovery
- Less postoperative restrictions
- Very fast in experienced hands

Table 2
Potential Applications of MIS

Arthroscopy
- OCD treatment
- Bicipital tenosynovitis diagnosis/ treatment
- Tendon injury diagnosis/treatment
- Ligamentous injury diagnosis/ treatment
- Fragmented coronoid process diagnosis/treatment
- Septic arthritis treatment
- Meniscal evaluation/treatment
- Joint Exploratory

Thoracoscopy
- Thoracic cavity exploratory
- Pericardial resection for pericardial effusion
- Assisted lung lobectomy/biopsy
- Correction of persistent right aortic arch
- Thoracic duct ligation for chylothorax
- Atrial mass excision/biopsy

Laparoscopy
- Incisional gastropexy (Preventative and Treatment)
- Enterostomy tube placement
- Cryptorchid castration
- Ovariohysterectomy
- Cystopexy for retroflexed bladder in perineal hernia
- Colopexy for recurrent rectal prolapse
- Gastrostomy for foreign body removal

Cystoscopy
- Calculus removal
- Bladder exploratory/biopsy

Arthroscopy Case Report

"Abby"

Signalment: Nine year old FS Border Collie

History: Six months of right forelimb lameness that worsens with activity

Exam: Weight-bearing right forelimb lameness, pain elicited on palpation of right biceps tendon.

Shoulder Radiographs: Sclerosis of bicipital groove of humerus, small osteophytes noted within groove.

Shoulder Arthroscopy: Moderate synovitis observed, biceps tendon markedly inflamed with neovascularization and tearing of tendon fibers (**Figures 1 and 2**). Rest of joint within acceptable limits.

Diagnosis: Bicipital tenosynovitis

Treatment: Biceps tendon tenotomy/release

Postoperative Care: Two weeks of leash-based activities followed by gradually increased activity intensity and multiple sessions of physical rehabilitation using our aquatic treadmill.

Follow-up: Complete resolution of lameness noted within four weeks with return to normal activities.

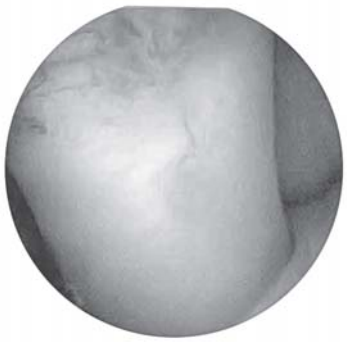

***Figure 1**: Normal biceps tendon. Note crisp margins, uniform color (pearl white) and appearance.*

***Figure 2**: Bicipital tenosynovitis. Note irregular, "sloppy" margins, heterogeneous color (pink, red white), frayed tendon fibers, and neovascularization*

The Administrator's Corner

Douglas F. MacMillan, CHE
Hospital Administrator

I'm going to be up front with you in the lead paragraph of my column this time about the **MedVet Eagles**. I'll admit to you that maybe our athletic talents do not include indoor soccer. It's not the winning that is important anyway, right? It's the chance to have fun. With the exception of one knee surgery, no one incurred a life-threatening injury. We did consider euthanasia briefly in one instance, but the player recovered. Thanks to **Drs. Brad and Jack MacKenzie** for being such good sports. Watch this space for the results of the **MedVet Big Dawgs** basketball team!

Please join us in congratulating **Dr. Milt Wyman** for receiving the "Inspiration Through Achievement" award that was presented at the Mid West Ophthalmology Conference in St. Louis last week. As recognition for lifetime achievement, this was one of the highest awards presented. You probably already know **Milt Wyman** as one of the founding fathers of Veterinary Ophthalmology. His contribution to the veterinary profession is beyond measure. It is an honor for me to say he is a friend.

If you snow ski or ever wanted to learn, you missed a fantastic family-friendly opportunity last month at the **MedVet** sponsored ***Boyne Highlands Ski and Learn Seminar***. Every morning before breakfast, **Dr. Marnin Forman** provided a 90 minute lecture, speaking on various current topics in Internal Medicine. At 5pm every afternoon, he led great case study discussions. I think everyone had a great time, learned a great deal, ate a lot of great food,

met some new people and earned 11 CEU's in the bargain. Keep the third week of January 2007 open if you are interested in taking advantage of this unique ski and learn program.

We're all sending positive vibes to **Dr. Shawn Kennedy** who recently sat for his Surgery Specialty Boards and to **Drs. Sarah Perdion** and **Jack MacKenzie** who will soon be taking their Internal Medicine exam. And finally, **MedVet** is really backing **Drs. Eva Sikorska** and **Gwen Myers** as they prepare for the Leukemia and Lymphoma Society Triathlon in Florida. They have each pledged $4200 to participate (the bake sale is on February 20, folks). Good Luck Ladies!

Schedule of 2006 MedVet Clinical Roundtable Breakfasts

Date	Department	Speaker(s)	Location
April 20	Radiation Oncology	Deborah Prescott DVM	FirstWatch-Upper Arlington
May 18	Internal Medicine	Bob Starkey, DVM	First Watch-Hilliard
July 20	Emergency Medicine	Warren Maurer, DVM	First Watch-Dublin
August 17	Ophthalmology	Dineli Bras, DVM	MedVet
September 21	Surgery	Matt Barnhart, DVM & Eric Schertel, DVM	MedVet
October 19	Cardiology	Linda Lehmkuhl, DVM	FirstWatch-Upper Arlington
November 17	Dermatology	John Gordon, DVM	First Watch-Polaris
December 15	Internal Medicine	Bob Starkey, DVM	MedVet

Enjoy a casual breakfast, a clinical discussion, and a visit with your veterinary neighbors. Different MedVet Specialists will host future breakfasts. Please call to reserve spots (limited to 15 persons) or to suggest a good "breakfast spot" for a future meeting in your area. Previous breakfasts have been approved for **1 hour of continuing education credit.**
To reserve your seat call Patty Moriarty at (614) 431-4417.
Watch for future faxes announcing upcoming breakfasts!

*We would greatly appreciate any feedback about **MedVet Update**. Please let us know of any topics or information you would like to see in future newsletters. Contact Doug MacMillan or any MedVet Doctor with your comments.*