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## Micropulse Transscleral Cyclophotocoagulation (MP-TSCP)

John S. Sapienza, DVM Diplomate, ACVO

icropulse laser therapy is another armamentarium in our fight against glaucoma in veterinary ophthalmology. Our initial findings were presented at the European College of Veterinary Ophthalmologists in Estoril, Portugal as well as the first Ophthalmology surgery meeting in Chicago this year. This novel laser is capable of delivering short pulses of laser energy to the target ciliary body tissue in such a manner that the thermal effects there are much less than with traditional diode laser therapy. Less thermal energy at the target site leads to less collateral damage to the lens, iris and ciliary body. The MP laser may have multiple effects that lower the patient's intraocular pressure (IOP). There is evidence that this laser causes an increase in uveoscleral (unconventional) outflow from the eye, also, recent research in humans dem-

onstrated that the iridocorneal angle may be widened in size to allow more egress of aqueous outflow through the conventional drainage

Our findings demonstrated a significant

decrease at 2 months post-MP-TSCP therapy in IOP pre- and post-laser treatment from 33.6 mg-hg to 19.4 mm-hg, respectively. The first time success rate to control IOP was 53.1% (17/32 eyes). Repeat therapy was performed in 12 eyes with higher laser energy settings, and 9/12 eyes responded positively to laser therapy, making a combined therapeutic suc-



cess of 26/32 eyes (81.2%) In addition, the number of medications was reduced from an average of 3.6 medications to 2.9 medications after MP-laser therapy. Side effects noted were exposure corneal ulcers in 5 patients. Cata-

ract formation was not observed during the course of study. The postoperative inflammation level was quite subtle in the majority of the cases.

Case selection is imperative for the

MP-TSCP patients. This micropulse therapy is not advised, to a great extent for acute glaucoma cases, as the IOP reductive effect of this laser may take 2-4 weeks to occur. For acute primary glaucoma cases, the IOP must be reduced immediately or the patient will

the target site leads to less collateral damage to the lens, iris and ciliary body."

"Less thermal energy at



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#### Michel Selmer, DVM, CTCVMP (Integrative Medicine)

Dr. Michel Selmer is an Integrative Veterinarian and one of only a handful of Traditional Chinese Veterinary Medicine Practitioners in the United States.

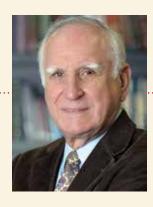
Dr. Michel Selmer attended Long Island University and graduated Cum Laude with a Bachelor of Arts Degree in Psychology. Following his undergraduate studies, he was admitted to Michigan State University School of Veterinary Medicine and earned his Doctorate of Veterinary Medicine in 1995. Following his Traditional Veterinary studies, he was admitted to the Chi Institute where he graduated with the top honor of being a Certified Traditional Chinese Veterinary Medicine Practitioner (CTCVMP).

Dr. Selmer is a published author and consults with other veterinarians as well as pet parents around the globe. In 2018, he made the exciting decision to join the Long Island Veterinary Specialists team as the Lead Veterinarian in their Integrative Medicine Department.

The passion Dr. Selmer has for his profession - and his love for all animals - has contributed to the high quality medicine that he practices.

To refer your patients, please call 516-501-1700.

# A Note from the Editor



The winter season is thankfully more than half over; the Flu invasion was especially harsh with an unfortunately high number of pediatric fatalities country wide. Many facilities on Long Island witnessed a high number of employee absences. LIVS was fully staffed to see the emergency cases that found their way here, as is our custom.

This is the Chinese new "Year of the Dog" and LIVS celebrated by honoring two of its stellar employees, Samantha Gallitto and Debbie Mora with a Chinese feast for lunch on the 13th. Following day, Valentine's Day, there were red bagels and spreads gifted by Dr. Christian Blauvelt and Dr. Michel Selmer and staff from the Integrative Medicine department brought in cupcakes too.

The winter Olympics are on TV regularly and there have been sidebars of some form of cooperation between the Koreas. Long winded talks that last forever are better than nuclear engagements. Football battlefields are the most violent form of engagement in which we need be involved.

Once again, the St. Baldrick's party will be held, with LIVS members participating, on March 18th. It is a non-profit foundation which stands in solidarity with kids fighting cancer, but more importantly, it raises money to find cures. This volunteer-driven charity funds more in childhood cancer research grants than any organization except the U.S. government. Please go to www.stbaldricks.org to support team LIVS led by Steve Sadowski.

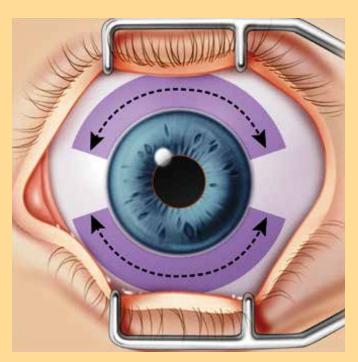
On a regular basis, Dr. Curtis Dewey, associate professor and section head of Neurology/Neurosurgery at the College of Veterinary Medicine at Cornell is here at LIVS regularly for consultation as is our animal behaviorist, Dr. Sabrina Poggiagliolmi. Appointments can be made at 516-501-1700.

As before we welcome all comments, please submit them to lmarino@livs.org

Leonard J. Marino, MD, FAAP, LVT

#### Micropulse Transscleral Cyclophotocoagulation (MP-TSCP)

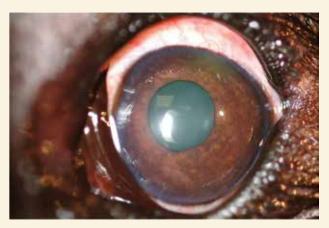
➤ Continued from Front Cover



Micropulse hemispheres



Micropulse probe to sclera



Micropulse therapy postop quiet eye

suffer irreversible damage to the retina and optic nerve. The micropulse laser is best suited for cases with chronic glaucoma that are maxed out on medications or those cases where post-operative inflammation must be minimal (such as after recent cataract surgery). Chronic cases of glaucoma on a maximal amount of medications can also benefit from MP-TSCP.

MP-TSCP is another laser option that we have in addition to conventional diode TSCP as well as endolaser glaucoma therapy. The optimal course of laser energy application must be tailored for the individual patient. Call us to determine the best laser option available for that mutual glaucoma patient with hope of retention of vision.

Any questions or comments, please do not hesitate to contact us.  $\hfill \square$ 



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## **Medical Oncology**



Nicole Leibman, DVM, MS, Dip. ACVIM, (Oncology)



Maria Camps, DVM, Dip. ACVIM (SAIM, Oncology)



Charles Maitz, DVM, PhD, DACVR (Radiation Oncology Consultant)

#### **Treating common cancers such as:**

- Lymphoma

- Mast cell tumor
- Soft tissue sarcoma
- Osteosarcoma
- Mammary gland tumor
- Melanoma
- Feline injection site sarcoma Carcinoma

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- Chemotherapy
- Radiation Therapy
- Immunotherapy
- Clinical pathology
- Surgical Oncology

## Types of radiation therapies include:

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#### To refer your patients, please contact:

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## **LIVS Dermatology Department**



#### Meet Meghan Umstead, DVM, MS, DACVD

Dr. Meghan Umstead attended Michigan State University and graduated with a Bachelor of Science in Zoology, concentrating in animal behavior and neurobiology. After completing her studies, Dr. Umstead developed her knowledge of medicine while working in a human emergency room, while also taking on the role of veterinary assistant at a local general veterinary hospital. These experiences inspired Dr. Umstead to enroll in veterinary school. After earning her Doctorate of Veterinary Medicine from Michigan State University, she completed a 1-year internship in small animal medicine and surgery at SouthPaws Veterinary Specialists and Emergency Center in Fairfax, Virginia.

Adding to her already impressive accomplishments, Dr. Umstead went on to complete a 3-year residency in dermatology, as well as a Master of Science in Biomedical Sciences from Auburn University. Her master research focused on the accuracy and precision of compounded cyclosporine and was performed in one of the top veterinary pharmacology labs in the country. This research allowed her to receive First Place Honors in Clinical Science Research from the American College of Veterinary Dermatology and was later published in the Journal of Veterinary Dermatology.

Dr. Umstead is a Diplomate of the American College of Veterinary Dermatology. She joined the Long Island Veterinary Specialists team in the summer of 2015, where she continues to lecture about dermatologic conditions and provides a wide array of dermatologic medical services to patients.

#### Providing therapies for cases with:

- Allergic skin disease (atopy)
- Auto-immune skin disease
- Chronic and Severe skin and ear disease
- Endocrine dermatoses
- Genetic and congenital skin diseases
- Immune-mediated dermatoses
- Metabolic skin disease (calcinosis cutis, hepatocutaneous syndrome)
- Neoplastic (cancer-associated) and paraneoplastic skin disease

#### **Diagnostic procedures include:**

- Allergy testing
- Biopsies
- Cultures
- Ear Cytology
- Otic exams
- Skin scrapings
- Impression smears
- Trichograms

To refer your patients to Dr. Umstead, please call 516-501-1700.

## Emergency Department Open 24 Hours

#### **Behavior Medicine**

Sabrina Poggiagliolmi, DVM, MS, DACVB

#### Cardiology

Jonathan Goodwin, DVM, DACVIM

#### **Dermatology**

Meghan Umstead, DVM, MS, DACVD

#### **Emergency/Critical Care**

Elizabeth Underwood, DVM
Eve Pugh, DVM
Jennifer Krawchuk, DVM
Laura Fiore, DVM
Meredith von Roedern, DVM, DACVECC

#### **Integrative Medicine**

Michel Selmer, DVM, CTCVMP

#### **Internal Medicine**

Jacqueline F. Gest, DVM, DACVIM Joshua W. Tumulty, DVM, DACVIM

#### **Neurology/Neurosurgery**

Ann Bilderback, DVM, DACVIM
Catherine A. Loughin, DVM, DACVS, DACCT
Curtis W. Dewey, DVM, MS, CVA, DACVS, DACVIM
Dominic J. Marino, DVM, DACVS, DACCT, CCRP
Fernando Leyva, DVM
Matthew Morgan, DVM
Patrick F. Roynard, DVM, MRCVS, DACVIM
Robert Waddell, DVM

#### **Oncology**

Maria Camps, DVM, DACVIM (SAIM, Oncology) Nicole Leibman, DVM, DACVIM (Oncology)

#### **Ophthalmology**

John S. Sapienza, DVM, DACVO Kay Kim, VMD, DACVO

#### Radioiodine Therapy (I-131)

Dominic J. Marino, DVM, DACVS, DACCT, CCRP Joshua W. Tumulty, DVM, DACVIM

#### **Rehabilitation Therapy**

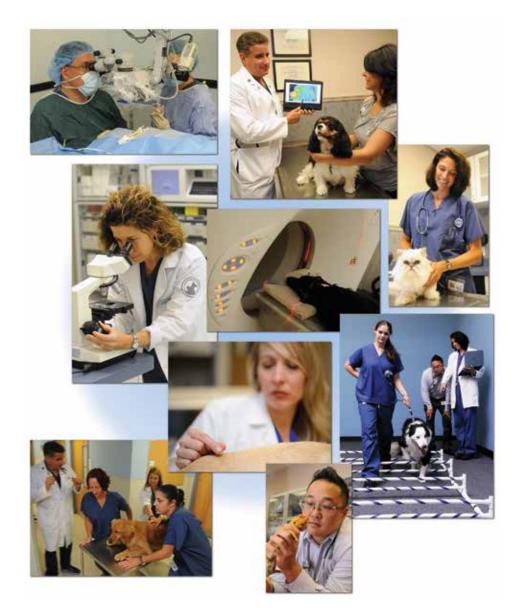
Dominic J. Marino, DVM, DACVS, DACCT, CCRP Heather Goodman, LVT, CCRP

#### Surgery

Catherine A. Loughin, DVM, DACVS, DACCT Curtis W. Dewey, DVM, MS, CVA, DACVS, DACVIM Dominic J. Marino, DVM, DACVS, DACCT, CCRP Fernando Leyva, DVM Matthew Morgan, DVM Robert Waddell, DVM







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## **Surgical Oncology**



Fernando Leyva, DVM (Surgical Oncology)



Catherine A. Loughin, DVM, Dip. ACVS, Dip. ACCT (Surgical Oncology)



Dominic J. Marino, DVM, Dip. ACVS, Dip. ACCT, CCRP (Surgical Oncology)

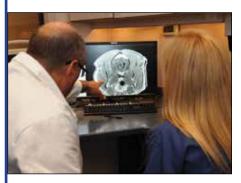


Matthew Morgan, DVM (Surgical Oncology)



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#### **Oral Tumors**

#### Catherine Loughin, DVM, Dip. ACVS, Dip. ACCT, Staff Surgeon

ral tumors are relatively common in cats and dogs, and can arise from bone or soft tissue structures of the mandible, maxilla, the tongue, or pharynx. Benign and malignant tumors of the oral cavity account for 3-12% of all tumors in cats and 6% of all tumors in dogs. Many tumors of the oral cavity are malignant: malignant melanoma and squamous cell carcinoma are the most common oral tumors in dogs and squamous cell carcinoma is the most common oral tumor in cats. Other malignant oral tumors include: fibrosarcoma, osteosarcoma, multilobular osteochondrosarcoma, peripheral nerve sheath tumors arising from the infraorbital nerve, and mast cell tumors. Benign oral tumors are also common

and include acanthomatous ameloblastoma and peripheral odontogenic fibroma, previously known as fibromatous and ossifying epiludes. Surgical removal of the tumor is the recommended treatment for most malignant and benign oral tumors, but other options may be available depending on the tumor type. These treatment options include radiation therapy, chemotherapy and/or immunotherapy.

Although a definitive diagnosis of oral tumors requires histopathology, suspicion regarding tumor type can be based on signalment, and location and appearance of the lesion. Malignant melanoma, squamous cell carcinoma, and fibrosarcoma usually arise from the gingiva. Malignant melanoma tends to affect older smallbreed dogs, including Cocker Spaniels and miniature Poodles, but also may affect larger-breed dogs such as Chow Chows and Golden Retrievers. Melanoma is often darkly pigmented but may be amelanotic. Squamous cell

carcinoma affects older large-breed dogs and appears as a flat, ulcerative mass. Fibrosarcoma, including the histologically low-grade, biologically high-grade variant, usually affects middle-aged and older large-breed dogs, predominantly Golden and Labrador Retrievers.

The tumor is proliferative, often arises in the gingiva near the maxillary carnassial tooth, and may invade the hard palate. Osteosarcoma affects medium- and large-breed dogs and may arise in the maxilla or the mandible.

Veterinary pathologists have determined that an acanthomatous epulis actually arises from odontogenic tissue, and not from the periodontal ligament, and the term canine acanthomatous ameloblastoma (CAA) is now the preferred term. It is a nonmetastatic but locally invasive tumor that frequently invades the underlying bone and should be treated by mandibulectomy or maxillectomy. This tumor is typically found in the rostral portion of the mouth, particularly the mandible. Its gross

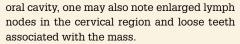
appearance is similar to squamous cell carcinoma and may cause spreading of the teeth. Fibromatous and ossifying epulides are now termed peripheral odontogenic fibromata (POF), masses consisting of fibroblastic connective tissue that may contain foci of osteoid, dentinoid, or cementum-like matrix. These are slow-growing, firm lesions that may be pedunculated or broad based and that often occur in the premaxillary region. Although excision of the mass without bone removal may provide excellent long-term control, a cure can be possible by extracting the involved tooth or teeth and removing a small margin of surrounding alveolar bone. Canine acanthomatous ameloblastoma and peripheral odontogenic fibroma must be differentiated from benign hyperplastic gingival lesions. which are now termed focal fibrous hyperplasia (FFH), a reactive lesion as a result of irritation

caused by dental plaque

Owners may note bloody nasal discharge, odor from the mouth, blood in the water bowl, swelling on the face or eye, or a decrease in appetite. Affected patients may have pain or difficulty opening the mouth. On examination, besides the presence of the mass in the

and calculus.





In addition to the physical exam, a complete blood count and biochemistry is also recommended to assess general health status as many cats and dogs with primary bone tumors are older and may have other problems which need to be considered when developing a treatment plan. A fine needle aspirate and cytology of the tumor and the lymph nodes can assist in the differentiation of neoplasia from infection or inflammation. Alternatively, a biopsy of the oral mass may be recommended to maximize the chance of obtaining a conclusive diagnosis before surgery.

Oral radiographs obtained while the patient is under general anesthesia may be useful in determining the extent of the tumor. Between 60% and 80% of tumors arising in or near the gingiva cause radiographically apparent bone lysis, however, in earlier stages of the disease, plain radiographs may underestimate the extent of bone destruction and are an unreliable tool for surgical planning. Computed tomography (CT) and magnetic resonance imaging (MRI) are superior modalities for assessing bony and soft tissue margins that aid in surgical planning even in difficult cases.

Treatment options depend on the location of the tumor and the type of tumor. Ideally, benign tumors are excised with 1cm margins and malignant tumors are excised with 2–3cm margins. In the mouth those margins may be difficult to obtain. Excision one full tooth in front and behind the tumor is recommended, and can be determined by CT or MRI images.

Various mandibulectomy procedures have been described, depending on how much of the jaw needs to be removed. The choice of mandibulectomy technique depends on the tumor type and location. For benign and low-



Postoperative appearance of a dog following subtotal hemimandibulectomy



Intraoperative image following hemimaxillectomy for excision of a fibrosarcoma.

Continued on Page 10 ➤

> Continued from Page 9

grade malignant tumors, less aggressive techniques are usually adequate, however, for malignant tumors or large tumors, more aggressive procedures such as subtotal or total hemimandibulectomy are recommended.

Similar to mandibulectomy, various maxillectomy procedures have been described. These procedures can be combined with removal of the nose, orbit, skull and mandible if necessary. Similar to mandibulectomy, the choice of maxillectomy technique depends on the tumor type and location. For benign and low-grade malignant tumors, less aggressive techniques are usually adequate, however, for malignant tumors or large tumors, more aggressive procedures such as caudal maxillectomy or hemimaxillectomy are recommended.

Most animals are discharged 1-2 days after surgery, depending on the aggressiveness of surgery, comfort and ability to eat soft food. They are usually asked to return for recheck exam and incision check 10-14 days after surgery. Pain can be well-controlled with owner-administered medications, and antibiotics will be administered as well.

Restrictions following surgery usually are: use of a restrictive collar for 10–14 days after

surgery to prevent the natural tendency of dogs to paw and scratch at the muzzle (this can cause breakdown of the surgery site and infection); limited and restricted activity is indicated for about two weeks to allow recovery and incision healing; soft canned food, or water-soaked kibble for 2–3 weeks after surgery (a feeding tube may also be used depending on the extent of surgery in dogs, or in cats); no chew toys, raw hide or ball playing for 2–3 weeks after surgery.

Postoperative complications are explained to the owner so they understand what can be normal after surgery and what is not. Incision breakdown is common and may require additional minor procedures or may be left to heal on its own depending on the size of the defect and location. Bleeding from the nose for a few days is common after maxillectomy procedures. Increased salivation may be temporary after surgery, but persists in some cases. Swelling under the tongue, a ranula, may occur and in most cases will resolve without surgery. Mandibular drift may occur. Difficulty in eating is observed, although this usually resolves within a couple weeks if not sooner. The vast majority of animals will eat within 1-2 days after surgery. Recurrence of the tumor is possible especially with aggressive tumors.

The prognosis for cats and dogs with oral tumors is dependent on the type of tumor and sometimes the location of the tumor, size of the tumor, ability to surgically remove the tumor with a margin, and presence of metastatic disease. Tumors located in the front of the oral cavity are usually detected at an earlier stage and are more likely to be completely removed with surgery.

Fibrosarcomas have a high local recurrence rate and need a wider resection or additional therapies such as postoperative radiation. For malignant melanoma, surgery and/or radiation therapy is successful in controlling the tumor locally in 75% of cases, but metastatic disease requires more effective additional therapy, such as radiation therapy, chemotherapy, or immunotherapy (there is high degree of success with melanoma vaccine).

Surgery is essential in the management of most oral tumors. While resection of various segments of bone from the skull can be overwhelming for owners, the majority of dogs have minimal cosmetic flaws and good functional outcomes as a result of surgery.  $\square$ 

## LIVS Behavior Medicine



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LIVS has pioneered the application of a specific type of radiation therapy called electronic brachytherapy (EB) to dogs and cats. EB allows the radioactivity to be administered to the surrounding cancer cells from a miniaturized radiation source, rather than a radioactive material as with conventional radiation therapy.

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