



Metropolitan Veterinary Referral Group

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Diagnosis and Treatment of Feline Portosystemic Shunts

by Patty Thalhofer, DVM Resident

An 8-month-old MN DMH presented to the cardiology service for evaluation of a heart murmur and history of ptyalism of one month duration.

On presentation, the kitten was thin, with a body condition score of 1.5/5, copper colored irises and a 5/6 systolic L sternal border murmur. The littermate of the kitten however was of good body condition, with no health problems noted by the owner. While an echocardiogram revealed hypertrophic cardiomyopathy (HOCM), the presence of the copper colored eyes and ptyalism led to further testing and a diagnosis of a portosystemic shunt (PSS).



Feline portosystemic shunts are rare, occurring in 2.5 of 10,000 cats based on a 10-year review of cases in the Veterinary Medical Databank by Purdue University. The majority of cats diagnosed with PSS are young and of small body stature. Copper colored irises have also been found to be associated with PSS in cats. Clinical signs are variable, but can include nondescript GI, urinary and neurologic signs similar to those noted in dogs with PSS. In contrast to dogs however, cats more commonly present with signs of ptyalism, blindness and seizures. Concurrent findings of cryptorchidism and heart murmurs also are associated with feline PSS.

The diagnosis and treatment of portosystemic shunts is often a multi-disciplinary approach that can involve the services of internists, cardiologists, radiologists and surgeons. A base line workup in a cat suspected to have a PSS includes a CBC, chemistry profile, urinalysis and abdominal radiographs. Bile acids are often the most useful piece of diagnostic information. Additional testing, including abdominal ultrasounds to identify shunts and echocardiograms to assess heart murmurs, also may be recommended. Medical stabilization prior to surgery via treatment with protein restricted diets, lactulose and antibiotics such as Amoxicillin is often required.



The latest method for surgical correction of feline PSS involves the use of an ameroid constrictor. These are devices comprised of hydroscopic compressed casein material inside a metal band, which allows for a more gradual occlusion of the shunt, thus decreasing the risk of the formation of portal hypertension. The most common post-operative complication is development of seizures, with many surgeons now instituting the prophylactic use of Phenobarbital prior to surgery.

So, how does the story end for our 8-month-old kitten? At his two-month recheck following placement of an ameroid constrictor, he had gained weight, bile acids had returned to almost normal, and he had become a playful kitten. If you have a cat with clinical suspicion of a portosystemic shunt, contact AVIMP at 330.670.2351 for further information on workup and correction of this disorder.



Future Notes

Hear Metropolitan Veterinary Referral Group Members Presenting at Conferences

Oct. 9, 2007 – American Holistic Veterinary Association, Tulsa, Oklahoma, Dr. Sivula's topics, "Foundations of Veterinary Chiropractic," "Canine Chiropractic Lameness Examination," "Equine Chiropractic Lameness Examination"

Nov. 17, 2007 – Healing Oasis Wellness Center, Sturtevant, Wisconsin – Dr. Sivula's topic, "Basic Animal Chiropractic"

Special Guest Lecturer Tuesday, Nov. 27

Dr. Paul Mitchell from Pfizer's advisory board joins us to discuss dentistry.

1 p.m. to 5 p.m. – Wet Lab

(Veterinarians and Technicians Welcome)

7 p.m. – Roundtable Lecture for Veterinarians

For both events, meet in the conference room at Metropolitan Veterinary Hospital.

Help us Update our Mailing List

You can assist in our efforts to keep pace with the changing local veterinary population. If you are receiving copies of this newsletter for someone no longer at your practice or would like to add someone, please call Kelli Riley at 330.670.2355. Thank you!



Contact Us

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Specialist Spotlight:

Canine Melanoma Vaccine: New Treatment for an Old Problem

by Rance Gamblin, DVM Diplomate, ACVIM (Oncology)
 Oral tumors are a common problem in the dog, being the fourth most commonly reported site. Of reported oral malignancies, malignant melanoma is the most common and certainly the most devastating. Any breed can be affected, but smaller breeds seem to be more commonly reported. Males seem predisposed and the average age at presentation is 11 years.



Typical appearing oral melanoma

Oral melanoma can arise from either the gingival, buccal or labial mucosa. They can be confused with anaplastic sarcomas or even carcinomas if they are amelanotic, which occurs in approximately one-third of cases. Special immunohistochemical stains such as MelanA or S100 may be needed for definitive diagnosis.

Oral melanoma is a highly malignant tumor on multiple levels. The first problem is local tissue invasion and destruction. Bone involvement is reported in approximately six percent of cases, making aggressive resection necessary. Without adequate local tumor control, euthanasia is commonly necessary because of mechanical impairment of eating, swallowing, secondary infection, pain and other issues. The second major issue is frequent metastasis. The draining lymph nodes and lungs are the most commonly reported sites, with metastatic rates of 41 percent to 74 percent and 14 percent to 92 percent, respectively. Metastatic rate is dependent on the site, size and stage of the primary tumor. Historically, even with good local tumor control, any sizeable melanoma generally resulted in the death of the patient within nine months.

Therapy has traditionally been a two-pronged approach: local tumor control with either surgery or coarse-fractionated radiation and treatment of regional and distant microscopic metastatic disease with chemotherapy. The major problem has been that melanomas appear to be generally resistant to most common chemotherapeutics. Carboplatin is the standard of care chemotherapy drug, with response rates reported around 30 percent. However, there has been poor supportive evidence for prolongation of survival.



Dr. Gamblin and Laura Messerly administer the melanoma vaccine in the medial thigh of a patient.

Researchers have long tried to stimulate an effective immune response to aid in treatment. Numerous immunomodulators and crude vaccination protocols have been attempted, most with poor results. However, with current DNA engineering techniques, a novel vaccine product has entered the market that is revolutionizing melanoma therapy.

The Canine Melanoma Vaccine produced by Merial became commercially available earlier this summer. This product has been in limited multicenter trials for several years. It uses a DNA plasmid that encodes for human tyrosinase, a protein expressed on the surface of melanoma cells regardless of species. While human tyrosinase is very similar in composition to canine tyrosinase, there is enough difference to stimulate an immune response against the tyrosinase molecule. This immune response recognizes not only the human molecule, but the canine as well,

leading to eventual cell death.

The improvement in survival rates has been impressive. Normal median survival for dogs with stage II or stage III oral melanoma is reported to be less than 150 days. However, for dogs receiving the vaccine, median survival times are reported to be almost 400 days. The vaccine is given as an intramuscular injection using a high-speed transdermal device every 14 days for four administrations, with a booster every six months.

As with any treatment, proper case selection and adjunctive therapy is important. We have learned several things about proper use of the vaccine. First, complete local control, preferably with surgery, is very important. Local treatment failures are being reported for some patients that still had microscopic residual disease. Appropriate staging, including lymph node aspirates and chest radiographs, also is important in assessing response and effectiveness. If positive nodes are detected and are not fixed to surrounding tissues, lymphadenectomy can remove a large tumor burden, improving likelihood of response. Lastly, adequate time is needed to allow for mounting an effective immune response. Studies indicate at least six to eight weeks are required after the last induction vaccine to see maximal immune response. This is especially important in patients with advanced disease at presentation, as their life expectancy may not allow for adequate response time to the vaccine.

Though the conditional license is for oral melanoma, "off study" research of other sites has indicated similar response rates. We are offering vaccine therapy to any diagnosed pet, regardless of site.

Melanoma vaccine therapy is not inexpensive. Typical cost for the initial series is approximately \$2,300, not including any surgery or other treatment costs. However, when compared to the previous standard of care therapy, carboplatin chemotherapy, costs are essentially equal, with significantly improved results.

If you have additional questions regarding melanoma vaccine therapy or if you have a patient you would like to have evaluated, please contact Dr. Gamblin at 330.666.2976.

Practice Points

Northeast Ohio Internal Medicine Associates' Dr. Turner and Dr. Jennings include assessment of pain in their routine evaluation of internal medicine patients. Pain control medications are being used with increasing frequency and success in small animals. Tramadol, an oral opioid medication, is often a good choice to control moderate to severe discomfort in dogs and cats, including chronic degenerative joint disease, cancer-associated pain and for post-operative pain management. It is similar to morphine and works by binding to mu opioid receptors. The parent compound and its active metabolite are responsible for Tramadol's analgesic effect. It is an excellent single agent or can be used in combination with other drugs, particularly nonsteroidal anti-inflammatory drugs (NSAIDs). If you have any questions about pain management in any of your patients, please feel free to call Dr. Turner or Dr. Jennings. 330.670.2355.

Dancing Paws Animal Wellness Center is proud to announce that Dr. Sivula will be taking the American Academy of Veterinary Acupuncture's Advanced Acupuncture Certification test in October. Only six other veterinarians nationwide have attempted this examination. The test will include information on traditional Chinese veterinary medicine as well as neurologic acupuncture. Meanwhile, Dr. Sivula will be presenting a series of lectures for pet owners in September at the Mustard Seed Market in Montrose on holistic pet care. Stephanie Sivula will be presenting four lectures on animal behavior at the Mustard Seed Market in Solon later this fall. Finally, we are happy to introduce our new receptionist, Angela Desimone. We are very pleased to have Angela as a part of our staff. Dancing Dogs can be reached at 330.664.6504.

Ohio Veterinary Surgery and Neurology (OVSN), formerly Veterinary Surgery Services of Northeast Ohio, has been busy in the past few months adding doctors. Doctors Sheldon Padgett, Mark Daye and Kerri Bowman are proud to make the following announcements:

- Dr. Todd Axlund, DACVIM (Neuro) joins our practice, resulting in our name change. Dr. Axlund looks forward to neurology and neurosurgical relationships with the veterinarians of Northeast Ohio and beyond. He is now seeing appointments and performing surgery.
- Another exciting addition to our service is Dr. Amanda Conkling, as a resident in small animal surgery. Dr. Conkling completed her rotating general internship and focused surgical internship at MVH.
- Drs. Dana Gietzen and Jen Bibevski join our practice as surgical interns for one year.

To contact the practice, call 330.670.2358

Vet-Rad is pleased to announce that the radiology department at MVH has gone digital! The recent installation of an Eklin DR system improves efficiency and diagnostic accuracy. If you're in the area, please stop by and we'll demonstrate the system for you. We are happy to answer questions regarding submission of radiographs for a second opinion, ultrasonography, computed

tomography, magnetic resonance imaging, proper procedural technique for contrast studies, positioning for skull films, etc. If you have digital equipment, we are capable of receiving your images directly over the Internet, eliminating the need to send e-mail attachments or burn CDs. To contact a Vet-Rad radiologist, please call 330.670.2372.

North Coast Bird & Exotic Specialties has just returned from the Association of Avian Veterinarians and Association of Exotic Mammal Veterinarians conference in Rhode Island, where Dr. Cook presented research on the usage of hormone-blocking implants for the control of various syndromes in birds and ferrets. We have been studying the use of GnRH agonist long-acting implants (Deslorelin) as a surgical alternative to reproductive abnormalities in birds and adrenal disease in ferrets. Results have been excellent and we will continue our clinical trials. We still can enroll referrals in our implant trials. Please call if you have a case that may benefit from Deslorelin usage. We are happy to announce new North Coast appointment schedules for Dr. Riggs and Dr. Cook. We have expanded hours Monday through Saturday. Call 1.877.NC XOTIC (1.877.629.6842).

Ohio Veterinary Cardiology would like to thank all of our referring veterinarians for their patient referrals. Our schedule has been very busy recently, so special arrangements may need to be made to see emergent cardiac cases in a timely manner. For non-emergent cases, we ask that you please advise your clients that a "next available" appointment is acceptable. At this time, this may mean one to two weeks from the time the client calls. We try to reserve an appointment each day for a 48-hour booking for more urgent cases. As always, please feel free to call us at 330.670.2376 if you have any questions or concerns.

The **Akron Veterinary Internal Medicine/Oncology Practice** continues to offer service Monday through Friday (8 a.m. to 6 p.m.), Saturday (8 a.m. to 12 noon) and Sunday (emergency only). We have updated the Web site (www.metropolitanvet.com) with information about the practice and client education handouts. Check it out! Dr. Gamblin is excited about the potential of the new melanoma vaccine. If you have possible cases, please contact us to discuss this new therapy. Due to the increase in his case load, his practice is limited to oncology cases only. Drs. Carothers, Perdion and Thalhoffer are available to see all internal medicine cases. As always, feel free to call us for consultations and referrals. 330.670.2351.

Veterinary Ophthalmology Services of Northeast Ohio is pleased to announce the addition of two new technicians, Carrie Harviel, CVT, and Theora Humphrey, RVT. We also extend best wishes to Rainy Waitz, who has worked as our ophthalmology technician for the last eight years and is now beginning veterinary school. Did you know that, despite recent advertisements for several products to "melt" cataracts, surgical intervention via phacoemulsification is still the best treatment for cataracts? Please contact Dr. Belknap at 330.670.2360 for all your ophthalmology questions.