# Central Connection

**Your Connection to Valley Central - FALL 2014**

## Leaders In Specialty and Emergency Care

Dear Colleagues:

I hope you all are having a fabulous year so far. I have some exciting changes at VCVREC that I want to share with you.

First, I would like to share that at the beginning of this year, Valley Central Veterinary Referral Center and Valley Central Emergency Hospital merged to create Valley Central Veterinary Referral and Emergency Center (VCVREC). Now two leaders in veterinary care of the Lehigh Valley have united as one entity under the direction of Dr. Ronald Hodges and Dr. Carlos Hodges. VCVREC is committed to the goal of providing exceptional specialty and emergency care for your clients just as it has been since we first opened our doors in 1996 as a referral practice. While we will continue to offer expertise in the field of specialty medicine and surgery, we are pleased to include emergency veterinary medical care as a specialty discipline to help meet the needs of your clients 24 hours a day. Our team of specialists provides services in Acupuncture and Holistic Medicine, Behavioral Therapy, Cardiology, Emergency Medicine, Internal Medicine, Nuclear Medicine, Oncology, Ophthalmology, and Surgery.

As an advanced multi-specialty and emergency veterinary center, we will continue to work closely with our referring veterinarian's to ensure your client's receive all the advantages of our specialized team. Together, we share the goal of delivering a treatment plan that best meets your client's medical needs and your expectations.

In our staffing area, we have added two new emergency doctors to our emergency service. We are pleased to announce the addition of Dr. Mink and Dr. Duris. The addition of Matt and Adam fit our vision in offering the best patient care possible. Our goal is to have a criticalist in person to support our ER service- 24/7/365.

Dr. Matthew Mink graduated from the Virginia Maryland Regional College of Veterinary Medicine in 2010. He is originally from Bristol, Virginia and completed both his Bachelor's and Master's degrees at Virginia Tech. He has been working in emergency medicine almost exclusively since graduating from veterinary school. Dr Mink lives with his fiancé and german shorthaired pointer in Bucks County.

Dr. Adam Duris graduated from Louisiana State University School of Veterinary Medicine in 2013. Dr. Duris was raised in Mandeville, Louisiana and moved to Las Vegas after veterinary school to work as a general practitioner and emergency veterinarian. He currently resides with his wife and 5 dogs in Chester County.

### COMING SOON TO VALLEY!

I would like to share that this coming winter, VCVREC will offer an on-site advanced imaging center. VCVREC has partnered with Advanced Veterinary Imaging of the Lehigh Valley to provide MRI, 16-slice CT, and fluoroscopy. This partnership will allow us to provide our veterinary community with cutting-edge and pet-safe technology that will accurately diagnosis the pet's symptoms and choose the best treatment option. At AVILV we will provide unparalleled imaging capabilities and exceptional personal service all as a seamless extension for our referring veterinarians. Along with providing scheduled outpatient imaging, with a referral from our referring veterinarians, we will also offer consulting services by a board certified radiologist.

We thank you for your continued support. Please do not hesitate to contact any doctor or staff member with questions or concerns regarding any aspect of our veterinary services.

Allyson Tolliver, Hospital Administrator

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SURGERY

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# Laparoscopic Gastropexy

Gastric dilatation volvulus (GDV) is a life threatening condition that affects many animals each year, with an estimated 22-24% life-time risk in large or giant breed dogs[1]. The estimated lifetime risk in Great Danes alone is approximately 42%.[1] At risk breeds include Great Dane, Gordon Setters, Irish Setters, Weimaraners, St. Bernards, Standard Poodles, and Bassett Hounds.[2,3] It is typically considered to be a condition of dogs with an increased thoracic depth-to-width ratio. GDV has been documented to occur more commonly in dogs fed fewer, larger meals per day, dogs that eat rapidly, dogs with aggressive or fearful temperaments, or dogs fed food of smaller particle size. A significantly ($P < 0.2$) increased incidence is found in dogs who have a first degree relative who has been affected by the condition.[4] GDV has been a popular topic of recent research but we still have difficulty in precisely predicting the individuals who will become affected by this condition. Consequently, prophylactic procedures such as gastropexy have been recommended to further decrease the incidence of this life-threatening condition.

A recent article published in JAAHA investigated the efficacy of incisional gastropexy in the prevention of gastric dilatation and volvulus.[5] This retrospective study evaluated the clinical history of 27 dogs with gastropexy performed during treatment for GDV and 34 dogs with prophylactic gastropexy. Median follow up time was 717 days. None of the dogs experienced GDV after the gastropexy procedure. Simple bloat (gastric dilatation without volvulus) was observed in 3 of the 34 GDV patients (8.8%) and 3 of 27 patients with prophylactic gastropexy (11.1%). These results suggest that gastropexy is an excellent means of preventing gastric dilatation and volvulus; however these patients should still be monitored for the occurrence of simple gastric dilatation. An individual case report published in 2006 document recurrent GDV after incisional gastropexy. This dog was treated by derotation of the stomach and another pexy was performed near the initial pexy site.[6] Another study prospectively evaluated cases that underwent laparoscopic gastropexy.[7] None of the 25 dogs in that study developed gastric dilatation volvulus, and ultrasound examination two years after the procedure confirmed continued fixation of the stomach to the body wall. These results also suggest that gastropexy is an efficacious measure to help decrease the incidence of gastric dilatation and volvulus.

Multiple methods of gastropexy have been documented. The key in making a permanent attachment between the stomach and body wall is providing contact of incised muscle ends to permit muscle to muscle healing allowing adhesion of these tissues. Incisional gastropexy is most commonly performed. This technique involves direct suturing of gastric muscularis layer to the transversalis muscle of the body wall. Intercostal or belt-loop techniques use the same muscle-to-muscle attachment principle, however the pexy site is anchored to a rib or through another muscle belly respectively. Intracorporeal methods have also been documented and new intracorporeal suturing techniques are being investigated.[8] The tensile strength of multiple techniques have been studied and overall strength appears to be similar. However this data is difficult to interpret because the necessary strength to resist gastric dilatation volvulus is unknown.

At VCVREC we are proud to offer prophylactic laparoscopic-assisted gastropexy. This technique involves a 1cm instrument port along the right costal arch and a 0.5cm camera port near the umbilicus. The stomach is grasped and brought to the body wall near the costal arch. The port is removed and stay sutures are placed in the stomach. The body wall incision is widened as needed to allow incision in the seromuscularis of the stomach and suturing of the stomach to the transversalis muscle. The procedure is generally performed in 30 minutes or less and most patients can go home the same day. The external incision is generally 2 to 4 cm along the right paracostal abdominal wall. This technique can also be combined with laparoscopic ovariohysterectomy yielding combined incisions of significantly shorter length than the length of incision needed to perform both procedures through a traditional laparotomy. As with any minimally invasive procedure, laparoscopic-assisted gastropexy provides

# Laparoscopic Gastropexy (continued)

the benefits of reduced patient discomfort, decreased hospitalization, faster return to normal function, decreased incidence of incisional infection, and increased cosmesis. Gastrpexy is a potentially life-saving procedure to keep in mind for all deep chested large and giant breed dogs to help prevent gastric dilatation and volvulus. It can also be used to decrease the incidence of hiatal hernias. Feel free to contact the surgery department for more information on this procedure or other minimally invasive procedures.

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ONCOLOGY

Craig A. Clifford DVM, MS, DACVIM (Oncology)

# New Breakthrough Treatment for Canine Lymphoma

Lymphosarcoma (LSA) is one of the most common cancers in dogs and is commonly noted in middle to older aged, pure breed animals. The true etiology is unknown but a combination of inheritable and environmental factors likely play a role in its etiology. Several forms of LSA exist, namely; gastrointestinal, mediastinal, multicentric (most common) and extranodal (involving organs such as the eyes, brain, kidney, skin, etc). The majority of multicentric patients present for the presence of peripheral lymphadenopathy in the absence of clinical signs.

A workup for LSA involves the following; CBC and serum chemistry to evaluate all body systems and to ensure the cancer may not have spread to other areas of the body causing bloodwork abnormalities; Chest radiograph to look for evidence of spread to the chest cavity or lungs; In some cases an abdominal ultrasound is performed to evaluate the spleen, liver and abdominal lymph nodes for evidence of the cancer.

After knowing the results of the "staging" process, dogs are placed in a stage of disease.

**Stage I:** Cancer involving one lymph node
**Stage II:** Cancer involving more than one lymph node but on one side of the diaphragm.
**Stage III:** Generalized lymph node involvement
**Stage IV:** Spleen or liver involvement, with or without the previous stages
**Stage V:** Bone marrow involvement

Dogs are placed into a substage of either "a" and "b"; "a" is a dog who is not sick and a "b" is a sick dog.

We generally break LSA in three groups, B cell (~2/3 of the dogs), T cell (~1/3) and null cell (<2%). This can be obtained through either biopsy with immunohistochemistry (IHC), or more novel techniques that are less invasive such as Immunocytochemistry (ICC), flow cytometry, and PCR for antigen receptor gene rearrangement (PARR) which are from simple aspirates. These are "send off" test and results are back in less than a week. This is an important test as the phenotype of LSA plays a role in prognosis as B cells carry a better prognosis and in therapy as we treat B and T cell LSA with different protocols. .

For many years, the "standard of care" treatment for most canine lymphomas has been doxorubicin-based combination chemotherapy, often referred to as CHOP chemotherapy. The acronym "CHOP" denotes the four drugs thought to have the greatest activity against lymphomas: Cyclophosphamide, Hydroxydaunorubicin (Doxorubicin), Oncovin (Vincristine), and Prednisone. There are many published protocols that differ in the number of drugs they use and the timing of each drug. Protocol length is impacted by efficacy, cost, and owner convenience. Protocol lengths vary from 12-weeks to > 2 years. To date, there are no prospective, randomized studies to determine the impact of protocol length on remission duration or survival. For the average dog, remission often lasts around 7-9 months and a average survival is ~ 1year. Protocol and prognostic factors will impact whether this is greater than or less than one year.

Although advancements in understanding the genetics of this cancer and new novel diagnostics have been created, little improvement in survival has been made in the past 20 years. As such, we have looked to our human counterparts for novel therapy. One such avenue is stimulation of the immune system to recognize cancer as something foreign like a virus or bacteria. Specific proteins called monoclonal antibodies (mAb) can be used to specifically bind to target cells or proteins and elicit a response by the immune system to attack those cells and remove them from the body. It is possible to create a mAb specific to almost any extracellular/ cell surface target, and there is a large amount of research and development currently being undertaken to create monoclonals for several diseases. In human oncology, a monoclonal antibody called Rituxamab was created which binds to B cells (normal and cancerous) and allows the immune system to recognize, attack and remove them. Similarly, Alemtuzumab is a monoclonal antibody designed to target T cells. Normal B and T cell can be replenished, as stem cells within the bone marrow are not targeted. As such normal cells return to circulation but the cancerous B and T cells are not. There are three proposed mechanisms of action:

1. Antibody dependent cell cytoxicity: The binding of the monoclonal antibody to the cell helps the immune system directly target the cancer.
2. Complement Dependent Cytoxicity: Proteins of the complement system create pores within the cancer cells increasing its fragility and leading to cell death.
3. Apoptosis: Binding of the monoclonal antibody triggers death signals within the cell leading to natural cell death (apoptosis).

## New Breakthrough Treatment for Canine Lymphoma: (continued)

Rituxamab and Alemtuzumab in combination with chemotherapy has become the standard of care in human oncology and has extended survival vs. standard chemotherapy for high grade lymphoma. Interestingly, these agents have efficacy alone vs. low grade/indolent B and T cell lymphomas. Two veterinary versions have been created and the USDA has given conditional approval for both drugs and shown them to be safe and have the expectation of being effective.

Clinical trials for the B cell and T cell monoclonal antibodies are soon to begin. The importance of these studies is to assess the efficacy and safety in large number of patients along with standard chemotherapy. Our oncology service will serve as investigators in two separate studies evaluating each monoclonal antibody with an expected start date of **May 2014**. Patients will need to be screened and phenotyped (B or T cell) to determine their eligibility. Costs related to the monoclonal antibody and its administration, exams and many staging tests will be covered. Depending upon the study concurrent chemotherapy may be covered. Each monoclonal antibody is administered IV over a 15-20 minute time frame. The number of treatments will vary depending upon which antibody. Generally, most visits will be less than 1 hour. We also have the ability to treat select patients with the monoclonal antibody "off study" and this is based upon evaluation and discussion with the owner, however, owners are responsible for the cost of the agent. If these agents perform similarly to their human counterpart, they will become our new standard for therapy for dogs with high grade T and B cell lymphoma.

For more information or if you have an eligible patient, please contact our Oncology Service.

**NURSE TIP**

Beth Hart

## Discharging a Diabetic Patient

So, you lost the game of rock, paper, scissors and now you get to discharge the newly diagnosed diabetic. Yay! Before beginning, I recommend checking a quick blood glucose on yourself to make sure that you will have the stamina to get through the discharge. Remember, most of our clients have never touched a syringe, much less, drawn medication into a syringe and then have to poke a needle into their beloved squirming, sometimes irritated pet.

Before starting the discharge, gather the following materials: insulin syringes, bottle of insulin, saline, glucometer and lancets. The first thing to teach the owner about is the syringe. Show them the lines on the syringe and teach them what each line means, remember, this is second nature to us, but basically a whole new language to our clients. Then the client should be taught how to draw up the insulin, using a bottle of saline to demonstrate. Next, show them how a bottle of insulin should be mixed and explain to them that insulin is a large molecule and the bottle should be rolled between the hands. Please remeber to remind them that it is very important to refrigerate the medication.

After the owner feels somewhat comfortable handling the syringe and drawing up the proper volume of insulin, move on to them actually giving the insulin to the pet. Again, have them practice using saline. For dogs with thick coats and cats, shaving an area for the owner is very helpful to insure that they are giving their pet the insulin and not the pet's hair the insulin.

Checking a blood glucose on the pet is the next hurdle. The paw pads, elbow pads and ears are the go to areas for owners to check blood glucoses using the lancets included in the Alpha-trak kit. Owners can be very worried about poking their pets paw pad and then the pet walking in dirt and potentially getting infected, so stick with the ears and elbows, if possible.

Last, but not least, its time to discuss diet and feeding regimens. This is sometimes the most difficult part of the whole discussion. It is important that the pet is being fed a high quality diet (we generally recommend Science Diet w/d for dogs and m/d for cats) and that they stick to a twice daily feeding schedule. Stress that treats and snacks between meals can make it more difficult to regulate their pet. Baby carrots are a great treat and healthier than dog bones and jerky type treats.

VALLEY CENTRAL
VETERINARY REFERRAL AND EMERGENCY CENTER
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VCVREC has been serving the Lehigh Valley and surrounding areas since 1996. We are dedicated to providing state-of-the-art veterinary care for your patients.

## Doctors at Valley Central Veterinary Referral and Emergency Center

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