WHEAT RIDGE VETERINARY SPECIALISTS'

Newsletter

internal medicine • surgery • emergency & critical care • dermatology • oncology • radiology, ultrasound & CT scan

Hello and Happy New Year!

We completed our second survey of our referring veterinarians at the end of last year. Congratulations to Dr. Joni Edwards for winning the VISA gift card. Your feedback is very important to us so we would like to thank all of you for taking the time to participate.

Our scores have improved across the board and we are pleased that you recognize our efforts to improve communication. Never-the-less, we realize that there must be a continual effort on our part to keep an open line of communication and provide information for you. We are committed to this. As before, we would like to share some of the changes made in response to your feedback.

It was noted that you wanted greater and quicker access to our specialists for information on your patients or with a consult or question. In an effort to be more available to you, we have made it the highest priority to take your calls immediately to avoid the phone-tag problem. The only exceptions to this policy will be if we are in an exam room with a client and patient or if we are performing a procedure where taking a call would compromise the attention given to that patient. If at any time you have difficulty getting in touch please let us know.

We have tried to tailor the method that referral communications are sent to you based on your preference. The survey indicated that most of you prefer fax communication. However, if you prefer to receive communication via email that can be easily arranged, just let us know.

Our Roundtable Lunch & Learns have received great feedback, but we realize that some of you are not aware of them. Please let us know if you would like to schedule a Lunch & Learn with one of our specialists for you and your team. Contact Nadja Torling at ntorling@wrah.com or 303-996-1384. We are also planning on an evening of continuing education at the Arvada Center on Wednesday, May 9, 2012 and our symposium at Coors Field will be held on Sunday, September 16, 2012. A great way to stay informed about our continuing education offerings and any changes at Wheat Ridge Veterinary Specialists is signing up for our email updates. Visit our website to sign up, www.wheatridgeanimal.com/vets/email_updates.html.

Please feel free to let us know how we are doing anytime and thank you again for taking part in the survey.

In this issue…

Would you like to continue receiving this newsletter?

To continue receiving our newsletter and information about upcoming continuing education, new services, and clinical updates, please visit our website, www.wheatridgeanimal.com/vets/email_updates.html, to sign up. It's free and you may unsubscribe at any time.

Feline Vaccine-Associated Sarcoma
Gabriella Sfiligoi, DVM, DACVIM (Oncology)

Feline vaccine-associated sarcomas, or injection site sarcomas, are particularly devastating tumors for pet owners to deal with. It is difficult for owners to accept that such a devastating disease is caused by something they did to their pet to help keep them well. It is estimated that one cat will develop a vaccine associated sarcoma for every 1,000 to 10,000 vaccines given. The vaccine associated feline sarcoma task force (VAFSTF) was created to provide guidelines for the diagnosis and treatment of these tumors. Taskforce guidelines are summarized below. Further information can be found at http://www.avma.org/vafstf/.

First and foremost, prevention of tumor formation is key. Vaccine schedules should be tailored to meet the needs of the individual patient and over-vaccination should be avoided whenever possible. We cannot deny the improvements in feline healthcare that have resulted from vaccination against highly infectious agents such as panleukopenia. Rabies vaccination is mandatory for all cats in the state of Colorado because of its zoonotic potential and the seriousness of that disease. However, simple changes in how vaccines are given can substantially improve patient outcomes should a tumor develop. All vaccinations should be administered consistently in the recommended locations (Rabies right hind, FeLV left hind, FVRCP right forelimb). These sites should be documented in the medical

Wheat Ridge Veterinary Specialists

3695 Kipling Street • Wheat Ridge, CO 80033
Tel 303-424-3325
Fax 303-420-8360
www.wheatridgeanimal.com

Appointment Hours:
Mon - Fri: 9 am to 5 pm
Sat & Sun: 9 am to 5 pm
24-hour Emergency Hospital

Meet Our Specialists

Jennifer A. Ginn, DVM, DACVIM
Board-Certified in Internal Medicine

Dr. Jennifer Ginn earned her Doctor of Veterinary Medicine degree from Tufts University in 2005. She completed a small animal internship at Wheat Ridge Animal Hospital, and completed her residency in internal medicine at the University of Wisconsin in 2009. She earned her board-certification in 2009, and remained at the University of Wisconsin as a clinical instructor and a research fellow. Her research focused on screening dogs with lymphoma for mutations in a gene that has been associated with lymphoma in people.

Gabriella Sfiligoi, DVM, DACVIM (Oncology)
Board-Certified in Oncology

Dr. Gabriella (Gabby) Sfiligoi received her Bachelor of Science and Doctor of Veterinary Medicine degrees from Cornell University in 1998 and 2002, respectively. In 2003, she completed a one year rotating internship in Small Animal Medicine and Surgery at the University of Pennsylvania. She completed a residency in Small Animal Oncology at the University of California, Davis where she received the Gerald Ling award for resident research. She successfully completed her board-certification in 2006 becoming a Diplomate in the American College of Veterinary Internal Medicine specialty of Oncology.

Feline Vaccine-Associated Sarcoma - Continued

record for future reference. Also, all vaccines should be given as distal as possible on the limb. This maximizes the chance that, should a tumor arise, amputation may be curative. Tumors that develop dorsal to the pelvis or in the inter-scapular region are more challenging to treat due to their close proximity to the spine, lungs, or pelvis. Also, tumors that arise more proximally on a limb have a higher rate of treatment failure than distally located tumors.

Client education can play a key role in catching tumors early when successful treatment is more likely. Local vaccine reactions occur more commonly than tumors. This can make it difficult to know when to evaluate a suspicious lump. The VAFSTF recommends practitioners follow the "123 rules" for evaluating a lump further for the possible presence of underlying neoplasia. The rules recommend further evaluation of any lump that is:

- Still growing ONE month after vaccination
- Greater than TWO cm in size, or
- Still present THREE months after vaccination

Lumps that meet any one of these criteria should be evaluated with either a tru-cut or wedge biopsy to obtain a definitive diagnosis prior to the initiation of therapy. Biopsies should always be performed in a location that will be amenable to excision with the rest of the mass later if a tumor is diagnosed. Excisional biopsies are not recommended as this has been shown to increase the risk of local recurrence and decrease both disease free interval and survival time in these patients. Once a diagnosis is made, a variety of therapies may be appropriate.

Only approximately 25% of feline vaccine associated sarcomas will metastasize over time. Local control, however, is the greatest treatment challenge. Without adequate local therapy, an uncontrolled tumor can lead to the development of clinical signs such as pain, fever, or infection. These clinical signs can negatively impact patient quality of life and ultimately lead to a decision to euthanize. Studies have shown that early aggressive intervention offers the best chance for long term local control. Marginal excision should be avoided as these surgeries tend to result in dirty margins and early treatment failure. Surgical goals would be to remove the entire tumor with at least a 3 cm margin of normal tissue en bloc. This often includes removal of muscle and bone. Some surgeons even suggest a goal of obtaining 5 cm margins when possible. Ideally, CT scans would be used to determine the extent of the lesion prior to surgical intervention. CT scans help maximize the chances of obtaining clean margins with a first surgery and can also be used to plan radiation therapy if clean surgical margins are not possible.

Historically, disease free intervals for patients with vaccine associated sarcomas were poor with only 35% of patients being disease free one year after surgery. However, the combination of the use of CT planning, more aggressive initial surgeries, and the location of tumors more distally on the limbs has resulted in improved clinical outcomes. For patients where surgery alone cannot achieve local control, radiation therapy can significantly extend disease free interval and survival time.

Once local disease is adequately controlled, a subset of patients may also benefit from adjuvant chemotherapy to help slow the risk of metastatic spread to the lungs. Treatment may include doxorubicin, ifosfamide, and possibly other chemotherapy agents such as Carboplatin or Gleevac. These recommendations are often not made until after a patient has undergone definitive local therapy and final histopathology results are available.

Finally, for those patients who are not good candidates for aggressive local treatment options, cannot afford local control measures, or have failed other options, palliative chemotherapy can also be pursued to help lengthen survival time. As with any medical condition, treatment options depend on the extent of disease. However, with appropriate treatment and careful monitoring, many patients can have extended disease free survival times and excellent quality of life.

Please feel free to contact me at Wheat Ridge Veterinary Specialists at 303-424-3325 if you have any questions about a case of feline vaccine-associated sarcomas or any other oncology case.

Management of Chronic Kidney Disease — Part 1: Recommendations for Diagnosis

Jennifer A. Ginn, DVM, DACVIM

Part 1 of this clinical update reviews recommended diagnostic testing for chronic kidney disease (CKD). Parts 2 and 3 will cover staging of CKD and recommended therapy for CKD, respectively.

Chronic kidney disease (CKD) is the most common kidney disease in dogs and cats. Prevalence is estimated between 0.5-7% in dogs and between 1.6-20% in cats. CKD is an irreversible and progressive disease. Diagnosis of CKD requires a complete history, thorough physical examination, and a number of tests that help to determine 1) whether kidney disease is present, 2) whether kidney disease is acute or chronic, and 3) the extent of disease.

HISTORY

The most common clinical signs of CKD include polyuria, and polydipsia. However other signs, such as decreased appetite, weight loss, and lethargy may also be noted. With progression of the disease owners may note vomiting or diarrhea, and, in end-stage disease or acute worsening of chronic disease, decreased thirst and urination. Signs may be noted for months, however some owners may not recognize the signs when they first occur. Therefore CKD should be considered even when owners report a short duration of any of these clinical signs.

PHYSICAL EXAMINATION

Certain examination findings may support a diagnosis of CKD. A skin tent or tacky mucous membranes may indicate dehydration. Gums may be pale, secondary to anemia of chronic kidney disease. Oral ulceration may also be detected in uremic animals. Palpation of the kidneys may also be helpful; with CKD, kidneys may feel small and irregular. Patients with hypokalemia secondary to CKD, may be weak, or have cervical ventroflexion or a plantigrade stance. Other findings are non-specific and indicate chronic disease, including poor hair coat or thin body condition.

DIAGNOSTIC TESTS

The following laboratory tests are recommended for diagnosis of chronic kidney disease: complete blood count, serum chemistry profile, urinalysis, ionized calcium and parathyroid hormone (PTH) levels, urine culture, and urine protein creatinine ratio. Abdominal radiographs and ultrasound of the urinary tract are also recommended. Blood pressure and fundic examination are other important tests to perform when evaluating CKD.

Laboratory Tests:

Common findings on a complete blood count include a normocytic normochromic anemia with a normal total protein and little to no evidence of regeneration (polychromasia, anisocytosis). Evaluation of platelets and the leukogram may also reveal abnormalities due to concurrent illness.

In addition to elevated BUN and creatinine, a serum chemistry profile may also show other markers of kidney disease, including hypokalemia (especially in cats), hyper- or hypocalcemia, and hyperphosphatemia. A full chemistry profile helps to screen for concurrent illness, including any non-renal illness that might contribute to decreased concentrating ability. Along these lines, an important additional blood test in cats with polyuria, polydipsia, or weight loss is a TT4 to screen for hyperthyroidism.

Renal secondary hyperparathyroidism occurs in patients with CKD, and is due to many factors, including phosphorus retention, hyperphosphatemia, low vitamin D levels, and low ionized calcium levels. Determination of ionized calcium and parathyroid hormone (PTH) levels are useful for diagnosis of renal secondary hyperparathyroidism.

Urinalysis is a mandatory part of the minimum database for evaluation of CKD. Evidence of decreased urine concentrating ability (<1.035 for cats; <1.030 for dogs) in the face of azotemia supports the diagnosis of renal dysfunction provided that concurrent illnesses that might interfere with urine concentrating ability have been ruled out. A full urinalysis also helps to evaluate for the presence of proteinuria, as well as evidence for inflammation or infection in the urinary tract (pyuria, bacteriuria).

A urine culture is recommended in all patients undergoing evaluation for CKD. Cats are normally resistant to urinary tract infections due to their well-concentrated urine. However, cats with kidney disease have dilute urine and are more susceptible to infections, and a long-standing infection (pyelonephritis) may lead to or exacerbate CKD. A urine culture should also be performed in any patient with acute worsening of azotemia, as pyelonephritis is one of the more common causes of acute-on-chronic kidney disease.

A urine protein creatinine ratio is recommended if the urinalysis shows even trace evidence of proteinuria. It is also reasonable to perform this test at initial evaluation or staging of CKD to establish a baseline value for proteinuria for comparison with future measurements.

Diagnostic Imaging:

Abdominal radiographs provide an objective assessment of the size and shape of the kidneys. Small, irregular kidneys support a diagnosis of CKD. Radiopaque uroliths can be identified, which may contribute to worsening kidney function. Abdominal radiographs should be performed in any patients with acute worsening of CKD; similar to pyelonephritis, obstructive uroliths, in particular, ureteroliths in cats, are a common cause of acute-on-chronic kidney disease.

Ultrasound allows assessment of the parenchyma of each kidney. Chronic changes, including small size, irregular shape, and changes in echogenicity, are supportive of CKD. Ultrasound is also useful for detection of dilation of the renal pelvis (pyelectasia), which may indicate pyelonephritis, or ureteral dilation with or without hydronephrosis, which suggests obstruction of the ureter. Uroliths, including radiolucent stones, may also be visualized with ultrasound.

With renal secondary hyperparathyroidism, chronic elevation of PTH leads to leaching of mineral from the skeleton of the

patient. In cases where renal secondary hyperparathyroidism is suspected, skeletal radiographs may also be indicated to look for evidence of renal osteodystrophy.

Other Tests:
Blood pressure should be considered part of the minimum database for patients with CKD. Several measurements should be taken at one visit, with an appropriately sized cuff, and in a comfortable environment to which the patient has been acclimated. Ideally, blood pressure should be measured on at least two separate occasions and should be persistently elevated before a patient is considered to be hypertensive. Even if a patient has a normal blood pressure at initial evaluation, blood pressure should be part of follow-up monitoring for any patient with CKD.

Hypertension may lead to target organ damage, including the eyes, brain, heart, and kidneys. A fundic examination provides a means to evaluate for target organ damage. Signs of hypertensive retinopathy include tortuous retinal vessels, retinal hemorrhage, and retinal detachment. If a patient is hypertensive and has evidence of hypertensive retinopathy, immediate anti-hypertensive therapy is recommended.

Staging of CKD and appropriate monitoring and therapy will be discussed in more detail in the next few issues of our newsletter.

Wheat Ridge Animal Hospital Blood Bank

The Wheat Ridge Veterinary Blood Bank has been in existence for over 16 years, primarily supplying the needs of Wheat Ridge Animal Hospital and area veterinary hospitals. In the past year under the direction of Regina Andrews CVT, we have greatly expanded our pool of both canine and feline donors so that we are now able to provide a wide variety of blood products both locally and nationally.

Canine products that we currently have available for purchase are:

Packed red blood cells (42 days shelf life) are available in units of 300 ml. PRBCs are recommended for patients with acute or chronic hemorrhage, hemolysis (IMHA), renal disease, and bone marrow disorders.

Fresh frozen plasma contains all clotting factors and albumin. It is available in 125 and 200 ml sizes. FFP is used to treat patients that are bleeding due to anticoagulant rodenticide toxicity, liver failure, DIC, or congenital clotting deficiencies.

Frozen plasma (4 years shelf life) is plasma that is not frozen within 1 hour of collection or FFP that has been stored frozen for over 1 year. Clotting factors deteriorate rapidly if not frozen so FP contains minimal amounts of clotting factors V and VIII. It still can be used to treat rodenticide toxicity, hypoproteinemia, pancreatitis, antithrombin deficiency, or hemophelia B. It too is available in 125 and 200 ml units.

Stored whole blood is available in 450 ml units. Following collection this product has a 30 day shelf life. It is reserved to treat patients with acute and chronic hemorrhage.

Fresh whole feline blood is available on a more limited basis. As you can imagine a cat "donation" is much more difficult/stressful than with a large cooperative and happy dog. We are diligently working to build our pool of donor cats. If you have a need for feline blood products please call us and we will do everything we can to accommodate your patient's needs.

We also have available canine and feline blood typing kits for sale or are happy to provide blood typing and cross match testing for your patients in our hospital laboratory.

For pricing information please check our website www.wheatridgeanimal.com or feel free to call us with any of your blood banking questions at 303-424-3325.