Nursing Care for the Neurological Patient
Christine Clemetson, CVT

The neurological patient can be one of the most daunting patients a technician sees during their day. Diseases causing neurologic signs are varied, ranging from hepatic encephalopathy and other metabolic causes to primary CNS diseases such as epilepsy and granulomatous meningoencephalitis. For technicians caring for the neurologic patient, our main concerns include their comfort, observing and noting any changes in their condition, and ensuring that they receive their treatments in a timely fashion.

Many neurological cases seem simple, such as the three year old golden retriever with seizures or the six year old dachshund with intervertebral disc disease. They require time, patience, diligence with medications, and physical therapy. More difficult cases can come in the form of encephalitis, meningitis, head trauma, and brain tumors. Many of these patients will have altered neurological functions and will require more intensive nursing care. Here are some tips about a few of our more common neurologic patients.

Head trauma patients
- Keep their head elevated at a 30 degree angle without kinking their neck (in creases intracranial pressure if you do).

Try putting their body on a board or grate and placing towels under the cranial end of it. Keep in mind, this only works if they are not moving!
- Check bedding frequently as manitol and hypertonic saline can increase urination.

Encephalitis/meningitis/CNS neoplasia patients
- Due to their altered mentation, many circle and circle and circle. If the IV line becomes tangled try using extra extension sets and taping them to the top of the kennel or using special swivel sets. Be observant when giving medications. Some patients do not swallow well and may do better with liquid or injectable drugs.

IVDD patients
- Different degrees of paralysis or paresis require different levels of physical therapy and nursing care. A patient with complete paralysis will need gentle rotation every few hours to prevent bed sores while the more mobile patient will need to be held back to prevent him/her from causing damage to limbs themselves.

- Checking bladder size and watching for voluntary and complete urination is very important in these patients as they may seem to be urinating but it is really just overflow. Using an ultrasound to measure the bladder size after they have urinated is a good way to document complete or incomplete urination.

Seizure patients
- In the post-ictal state, these patients can be vocal, disoriented, anxious, and sometimes aggressive. Frequently, minimal handling in a quiet and darkened area is best for these patients.

Frequently observing and documenting your patient’s neurological status is vital. A basic neurological exam takes less than two minutes and can provide much needed information for your doctors.

- Mentation - do they seem suddenly aggressive or frightened, dull or sleepy
- Eyes - anisocoria, nystagmus, pupillary light responses, blink reflexes
- Head position - tilt or head pressing
- Temperature
- Heart rate
- Proprioceptive deficits - ataxia, scuffing, or crossing of the feet
- Weakness or any change in gait.

Noting small and sometimes unimportant changes can sometimes mean life or death for these patients. If an IVDD dog that was previously walking or walking with only slight difficulty, suddenly begins falling or swaying in the hind end, it could mean they need surgical intervention. If an encephalitis or meningitis dog suddenly seems sleepy and hard to rouse it could be a precursor to aseizure of even cardiac arrest. Technicians many times will see changes in a patient’s neurological status before the doctor and can ensure timely intervention.

Giving medications to a neurological patient should, in some instances, be considered an Olympic sport. For instance, the IVDD dachshund whose back legs don’t work but still has working teeth or the post ictal golden retriever who may suddenly fear you when you're trying to convince him to eat a meatball full of medications. Encephalitis and meningitis patients may even lack the ability to swallow correctly, making it even more difficult to give oral medications.

In most of these cases the medications that these patients are receiving are vital. They are keeping the dachshund out of extreme pain, the golden from seizing, and the encephalitis dog’s immune system in check. However there may come a point when trying to medicate can come at the expense and well-being of the patient. It’s reasonable to take a break and try later, or to ask for a different form of the medications, IV or liquid. However, there are some medications that either don’t come in a different form or cannot be compounded, and the we have to find the least traumatic way to medicate.

- A large muzzle can used and the medication given with a pill gun or liquid thru the opening of the muzzle.
- Wrapping a post ictal dog in a towel for less visual stimulation can help.
- Using easy to swallow foods, like baby food or even canned cheese to hide the medication.

At the end of the day neurological patients can be the most time consuming and draining patients you’ve had all week, but they can also be the most rewarding. With a thoughtful and thorough nursing care plan we can really make a difference in these patients comfort and recovery.
Kelly Sandmeier has been working in a small animal general practice for the last six years in Pullman, WA. She recently relocated to the Fox Valley area and is now a valued member of our emergency and critical care team at the Fox Valley Animal Referral Center. She has a strong surgical background and enjoys the challenge of internal medicine and dermatology cases.

Some of Kelly’s other interests include yoga, knitting, baking, reading, hiking, traveling, and motorcycle trips with her husband. Please join us in welcoming Kelly to our team!

New Research in Trauma Medicine
Dr. Lisa Peters attended the International Veterinary Emergency Critical Care Symposium (IVECCS) in Washington D.C this past fall. One of the highlighted speakers was Jonathan Sevransky, MD. His lecture discussed how resuscitation of the human trauma patient is now centered on blood products in a 1:1:1 ratio of plasma: blood: platelets over aggressive crystalloid resuscitation. This has led to decreased mortality from secondary trauma associated coagulopathies. Studies in veterinary medicine have shown that a condition called the coagulopathy of trauma does exist and that we should possibly be considering transfusions sooner in our trauma patients when it is noted. More studies will be needed.

Hemangiosarcoma Survival Times
For FVARC’s Journal Club, Dr. Teri Cole reviewed the article; “Survival time of dogs with splenic hemangiosarcoma treated by splenectomy with or without adjuvant chemotherapy: 208 cases (2001-2012)” by Kristine Wendelburg DVM et al from JAVMA, 2015. One of the discussion points was on the WHO staging system and how staging was the only thing with statistical significance for prediction of survival in this study.

-Stage I: tumor restricted to spleen – 10.6% of dogs
-Stage II: splenic HSA that had ruptured – 56.7% of dogs
-Stage III: splenic HAS with clinically detectable metastases or RA mass – 52.7% of dogs
-Most common metastasis site was liver (64.7%) and omentum (14.7%) Survival times for dogs treated with surgery only:
-MST (medium survival time) for dogs with stage I disease ~ 5.5 months, and these patients had 1- and 2-year survival rates of ~ 55.5% and 11.7%, respectively.
-MST for dogs with stage II disease was 2 months
-MST for dogs with stage III disease was 0.9 months, and no dogs with stage III disease survived > 1 year.

Survival times for dogs treated with surgery and chemotherapy were not broken down by stage which may hinder comparison of stage specific survival time with each treatment modality. The MST for all dogs treated with surgery and all types of chemotherapy was 3.4 months.

Continuing Education Opportunities
North American Veterinary Conference
Place: Orlando, Florida
Date: January 16 - 20, 2016
More information: www.navc.com

Lunch ‘n Learns
Contact Lyn Schuh to schedule one for your clinic: lschuh@horizondvm.com or 920-882-4304.
The CPR talk is RACE approved. This is a great way to stay up to date on current CPR recommendations.

Community Events
Fox Valley Animal Referral Center and Green Bay Animal Emergency Center have been partnering to raise awareness about household and holiday pet toxins:
-Bart Starr Tailgate Parties were sponsored and we had a booth at each to provide information about household pet toxins.
-Scout Night and Military Night at the Green Bay Gamblers Games were sponsored with similar information provided.

A segment of “Living with Amy” on WLUK that aired the day before Thanksgiving featured Lyn Schuh, CVT discussing household and holiday toxins. http://fox11online.com/living/featured-segments/household-toxins-to-watch-for-this-holiday-season.

Congratulations and Announcements
Congratulations New Certified Veterinary Technicians!
A special shout out of congratulations to the members of our team who became Certified Veterinary Technicians this year. Jess Behling, Emily Williams, Molly Phillips, Emily Stogbauer, and Deanna Zielke.

Green Bay Animal Emergency Center’s New Home for 2016
The Green Bay Animal Emergency Center is excited to announce that we will be moving to a new location in early summer of 2016. The former North East Wisconsin MRI Center on Lime Kiln Rd. was purchased this fall and is currently undergoing renovations. The new facility will provide enough space for future 24 hour emergency and specialty services. Our new hospital will have more exam rooms, a surgical wing that will include two surgical suites, procedure rooms for ultrasound, scoping procedures and chemotherapy and an isolation ward with direct access to an isolated outdoor walking area. Also, the two rooms that housed the MRI machines will be left in tact so that they will be ready for the future addition of an MRI unit and/or CT.

We look forward to serving you and your clients from our new home. We will keep you informed as construction progresses.