Feline E-Tubes and Nutrition

Victoria Vorathavorn, DVM, DACVIM and Michelle Cieplucha, DVM
Advanced Veterinary Internal Medicine

Indications
Hyporexia or anorexia
Disorders of the oral cavity or pharynx

Contraindications
Primary or secondary esophageal disorder (e.g., esophageal stricture, esophagitis, megaesophagus)
Vomiting

Advantages
Ease of tube placement
Well tolerated by the patient
Large-bore feeding tubes can be used allowing use of blenderized diets and medications
Tube care and feeding is easily performed by the client
Patients can eat and drink around the tube
Easy to remove tube

Disadvantage
General anesthesia for placement
Patient can vomit tube

Placement
General anesthesia

Right-lateral recumbency with the left side up (esophagus lies on the left side making this side more desirable)

Midcervical region
Aseptically, prepare the lateral midcervical area from the angle of the mandible to the thoracic inlet.
Slightly extend the neck and hold the mouth open with a mouth speculum

Premeasure and mark a 14- to 16-French, red-rubber feeding tube from the level of the midcervical region (i.e., exit point of feeding tube) to the level of the 7th or 8th intercostal space (mid-to-caudal esophageal placement)

NOTE: Avoid LES this will cause sphincteric incompetence, gastric reflux of acid, esophagitis and subsequent vomiting or regurgitation.

TIP: Enlarge the two lateral openings of the feeding tube to encourage smoother flow of blended diets.

Place the curved Carmalt tip of the instrument shaft through the oral cavity and into the esophagus to the level of the midcervical region
Palpate the tip as it bulges the cervical skin and make a small skin incision with a #15 blade over the device tip until it penetrates through the skin.

Place sterile, water-soluble lubricant on the tube and instrument shaft. Retract the instrument and pull the feeding tube into the oral cavity to its predetermined measurement.

Turn the distal end of the tube into the mouth and continue to push with either your finger or a forceps until the proximal portion of the tube flips rostrally.

Secure the tube to the cervical skin with a Chinese finger-trap using #1 nonabsorbable monofilament suture. Place kitty collar.

Can be used immediately and removed immediately.

Can be left in place for several weeks to months.

**Removal**

Cut suture and pull tube. No further wound care is necessary; the hole seals in one or two days and heals by 7–10 days.

References available upon request.
Guidewire inserted chest tube placement in cats.

Peter Sebestyen, DVM,
Diplomate American College of Veterinary Surgeons

Diseases of the pleural space are relatively common disorders in feline clinical practice. The abnormal presence of air, fluid, or tissue within the pleural cavity may represent a disorder of the airways, lung parenchyma or development of a primary, systemic illness.

Pleural fluid may be classified as blood (hemothorax), transudate, modified transudate, exudate and chylous effusion based on protein content, cell count and triglyceride levels.

Pneumothorax is characterized by their accumulation in the pleural space usually caused by traumatic injury to the airways, the lung tissue or the thoracic wall.

Cats with loss of pleural negative pressure (pleural effusion, mass effect or pneumothorax) often have severe respiratory compromised at presentation. Careful handling and prompt stabilization, incorporating supplemental oxygen and therapeutic thoracocentesis is essential to avoid respiratory failure without the luxury of information gained from a full history and physical examination. If fluid or air accumulation is rapidly progressing, thoracostomy tube placement will be necessary.

Indications for chest drain placement include pneumothorax, particularly if tension pneumo-thorax is present or there is persistent or recurrent pneumothorax, malignant pleural effusions, pyothorax, penetrating thoracic injuries and in postoperative situations.

Several techniques for chest tube placement using different commercially available thoracostomy tubes have been described in veterinary medicine. The classic, large bore, trocar-type drains are typically inserted using pressure to place them within the pleural space. The use of trocar-type drains is discouraged in cats and small dogs because of their high thoracic wall compliance and associated increased risk of complications. Other methods include a “mini-thoracotomy” method in which blunt dissection performed using a pair of hemostats places a non-styletted chest drain grasped in the jaws of the hemostats into the pleural space. Anesthesia or heavy sedation is required for these techniques in most instances, which may be undesirable in cardiovascular unstable or dyspneic animal.

In veterinary medicine, use of large-bore chest drains has been linked to insertional and mechanical complications in up to 58 per cent of cases. Reported complications include pneumo-thorax, lung trauma, arrhythmias, hemorrhage from laceration of intercostal vessels, misplacement, failure to drain and fluid leakage around the catheter.

The use of small-bore catheters (10 to 14 French) inserted using a modified Seldinger technique (guidewire inserted) is recommended in human medicine for the treatment of pneumothorax and malignant effusions as they are associated with fewer insertional and infectious complications and they are considered more comfortable for the patients. Guidewire inserted chest tube is currently available for veterinary use (Mila International, Inc.). Clinical study, evaluating the efficacy of a small bore, guidewire inserted chest tube placement for managing pleural disease and small animals,
concluded that these drains are safe to insert, and guidewire insertion offers a low rate of complications, requiring no or only minimal sedation.

**Small bore, guidewire inserted chest tube placement technique:**

**Indications:** Continuous or repeated drainage of fluid or air within pleural space

**Material Needed**
- Clippers
- 3-step surgical scrub
- MILA Chest tube (eg. Guidewire, Silicone or with trocar)
- MILA automatic 3-way centesis adaptor
- 2% lidocaine for local block
- Sterile syringe and needle
- Scalpel blade, mayo scissors and curve hemostats
- 60 cc syringe
- Extension set
- Sterile drape(s)

**Placement:**
- Place patient in lateral recumbency and provide flow-by oxygen and sedation if necessary. General anesthesia required for blunt dissection or silicone tubes.
- Clip and aseptically prepare from the 4th to 12th rib to ensure a strict aseptic technique is maintained during placement
- Wash your hands
- Open sterile gloves and prior to gloving, open and place appropriate MILA chest tube, syringe, extension set and MILA automatic 3-way centesis adaptor onto your sterile surface. Glove up and assemble materials aseptically
- Using either an eye drape or 4 quadrant drapes isolate a sterile field.
- Palpate the cranial aspect of the 7th or 8th rib near the upper 1/3 quadrant. Perform a local block at the desired insertion site. Infuse down to the pleural lining on the cranial aspect of the rib to avoid the neurovascular bundle
- MILA guidewire insertion:
  - Slowly insert the over-the-needle catheter into the pleural space
  - Remove the stylet and insert the guidewire into the pleural space
  - Without removing the guidewire slide the catheter off the guidewire
  - Slide the 14g chest tube over the guidewire into the pleural space
  - Once fully inserted remove the guidewire and cap with one-way valve adapter to prevent further air entry
  - Aspirate fluid or air from pleural space prior to securing the catheter if the patient is unstable
- Secure the catheter to the skin using both suture wings provided
- Cover the insertion site with a sterile bioclusive dressing (eg. Ioban)
- MILA silicone or trocar insertion:
  - Have an assistant pull the skin forward (fluid) or backwards (air) two ICS
  - Make a small stab incision through the skin at the insertion site
  - Bluntly dissect down to the pleural space with a pair of Mayo scissors
  - Grasp the end of the silicone tube with the curved hemostats and penetrate the pleural space. Once into the pleural space feed the silicone catheter into the desired location
  - Silicone tubes with a trocar can be inserted into the pleural space after the stab incision is made
  - Release the skin to create a tunnel to reduce fluid and air leakage
  - Aspirate fluid or air from pleural space prior to securing the catheter if the patient is unstable
  - Secure the catheter to the skin using a purse-string and finger trap method. Blindly place a 2nd suture around the tube closer to the insertion site into the chest
- Cover the insertion site with a sterile bioclusive dressing (eg. Ioban)

Feline-specific Dental X-ray Views Practice

*Dr. Eric Van Nice, Animal Dental Services*

The feline patient presents some specific dental x-ray imaging challenges. Today we will practice taking dental x-rays in feline specimens with a digital dental x-ray system.

**Indications for dental x-rays include:**

- Fractured teeth
- Missing teeth
- Discolored teeth
- Abnormalities on perio probing including pockets, furcation involvement, mobility, gingival enlargement and bleeding.
- Cavities
- Tooth resorption
- Oral masses
- Maxillofacial trauma
- Sinus films
- Pre- and post-extractions
- Follow-up treatment films including perio surgery, trauma healing and endodontic procedures

**Selected survey views for today:**

Each table group will position a digital x-ray sensor and a specimen and then step back to take an x-ray. We will work through the selected views together, and there will be a clinical photo on the large monitor above to help you see how it is supposed to look.

**Oblique view for the mandibular 3rd premolar region**

The problem here is that you can’t get the film or plate behind the entire mandibular 3rd premolar using the usual parallel technique, so you will miss the mesial portion of the tooth and root. Patient is positioned in dorsal recumbancy with a towel under the neck to make the mandibles level. Sensor is placed in the mouth parallel to the table surface with the imaging side resting against the dorsal surface of the tongue. The x-ray tube is angled laterally approximately 45 degrees from vertical. This is a bisecting angle technique, but don’t worry about visualizing all those angles. Instead, visualize casting a shadow of the tooth crown and root onto the surface of the sensor.

**Maxillary cheek teeth, cat, extraoral view**

Helps avoid superimposition of the zygoma over the tooth roots. The sensor is placed flat on the table top with patient’s head laying on top of it. Put the patient in lateral recumbancy and prop the mouth half way open with a syringe case tube cut to fit (no metal and no springs please). Rotate the patient’s head 15 degrees laterally and angle the x-ray tube 15 degrees laterally from vertical. Again, visualize casting a shadow of the teeth onto the sensor. (There will be a photo on the big monitor to help you see how this works).
Nasal sinus films
You can get really great images of the cat’s nasal sinuses quickly and easily with your dental x-ray system. Position the patient in sternal recumbancy, towel under the head so it’s not tipping to one side or the other and the nose pointing straight forward. The film goes horizontally on top of the tongue with the imaging surface resting against the crown tips of the maxillary canines and carnassials. Push it back in the mouth as far as possible without hurting anything. X-ray beam is directed straight downwards.
• Groups will be divided into 3 or 4 teams depending on group size
• The team member who hits the buzzer first will be able to select the category and dollar amount to be revealed.
• There will be 5 categories
  o Toxicities
  o CPR
  o Shock
  o The Cardiovascular System
  o Paw-Pourri
• The team that has control will attempt to answer as many questions as possible until they are unable to give a correct answer. This will allow the other teams to steal control.

The team with the most points will be declared the winner and will receive prizes!
Veterinary Cancer Group
FELINE-FOCUSED FAMILY FEUD
Sara Fiocchi, DVM, DACVIM (oncology)
Susie Kang, DVM, DACVIM (oncology)

Join Veterinary Cancer Group for a fun, friendly game of Feline, cancer-focused, Family Feud!

- Groups will be divided into two teams
- Each team will select one of it’s members to face off with the other team and to answer a question.
- The team member who hits the buzzer first will get to answer the question.
- If the team answers correctly, they can either play (provide more answers to the question) or pass control to the other team.
- The team that has control tries to reveal all of the correct answers to the question. Each incorrect answer receives a “strike.” If the team receives three strikes without providing all the correct answers, control is passed to the other team.
- The team that now has control can provide one answer in hopes that it is on the board. If it is, that team wins the points. If not, the other team gets the points.
- Points are added for each correct answer.

The team with the most points will be declared the winner and will receive prizes!
When to Pee and When to PU

Andrea McDooling BVSc, MS, DACVIM (SAIM), Ashley Cruse DVM, DACVIM (SAIM)
Zachery Smith DVM, DACVS, Leyla Fatourechi DVM, DACVECC, Deb Liu DVM, DACVECC
Heidi Schulze DVM, DACVECC

Feline patients presenting with urethral obstruction for the first time, are almost always young-to-middle aged (2-8 year old) male cats. There are outliers to this age range (i.e., occasionally you may see a kitten or a geriatric patient presenting with its first episode). Sometimes these cats have shown non-obstructive FLUTD signs (stranguria, hematuria, pollakiuria, periuria) in the past, but often this is the first time that owners have noted clinical signs of urethral obstruction. Other signs may include excessive licking of the prepuce, and more non-specific signs such as lethargy, hiding, and anorexia. Vomiting and weakness are also seen as the clinical signs extend beyond one day.

There has been long debate over the cause of urethral obstruction in cats. Most recent literature suggests that an idiopathic or inflammatory cause is the most common cause, accounting for ~53% of cases. Other common causes include Urolithiasis(29%), urethral plugs(18%) or neoplasia. Aside from neoplasia, cystic calculi is the most common underlying cause for urethral obstruction on the very rare occasion that you see this condition in a female cat. Imaging for calculi may be performed by radiograph or ultrasound. Triple phosphate (struvite) calculi, calcium oxalate calculi, and calculi containing different layers of mineral content where the outer shell contains one of these mineral types (or the outer shell of lucent minerals is very thin) can easily be seen on plain radiographs of the abdomen. Due to the small size of cats, we are easily able to radiograph the entire urinary tract (from kidneys to the tip of the penis) on one set of films (lateral and V/D views). However, urate and silica calculi are generally not seen on plain radiographs, due to their lucency (again, unless they are calculi containing mixed mineral content including radio-dense minerals as listed above). In this latter case, imaging may be accomplished with abdominal/pelvic ultrasound. In addition, while rare, patients can develop a uroabdomen secondary to prolonged urethral obstruction. An abdominal ultrasound may be of benefit to assess for abdominal effusion.

Hyperkalemia and urinary obstruction
In experimentally induced urinary obstruction, hyperkalemia occurs within 48 hours of complete obstruction. This might vary in the clinical setting based on the patient. The proposed mechanisms include decreased GFR (and therefore decreased urinary K+ excretion), increased reabsorption of potassium from damaged bladder mucosa as well as metabolic acidosis.

Hyperkalemia can affect cardiac function and the cardiac action potential. Potassium is the main determinant of the resting membrane potential. The interior of the cell is normally negative relative to the exterior and an action potential occurs when a positive inward current causes the cell’s threshold potential to be reached. The propagation of the action potential depends on the relationship between the resting membrane potential and the threshold potential. Hypokalemia increases the resting membrane potential and makes the cell more negative. Therefore the cell is hyperpolized (less excitable). Hyperkalemia decreases the resting membrane potential, and therefore hypopolarizes the cell, making it initially hyperexcitable. If the resting potential decreases to less than the threshold potential, depolarization results but repolarization cannot occur (the cell is no longer excitable).

Expected ECG changes resulting from hyperkalemia included “tented T wave”, prolonged PR interval, prolonged QRS interval and in severe cases absent P waves, SA/AV blocks, and “sine waves” (QRS fused with T waves). ECG changes are not always present even in cases of severe hyperkalemia.
Hypocalcemia and acidemia can worsen hyperkalemic cardiotoxicity whereas other alterations can blunt the expected ECG changes. Therapy for hyperkalemia should always include intravenous fluid therapy. IVF improve renal blood flow (hence increase K excretion), dilute K in blood and improve dehydration/hypovolemia. Conventional wisdom would suggest that potassium free fluids (i.e. 0.9% NaCl) should be used. However, the small amount of potassium contained in balanced electrolyte solutions such as Norm R and LRS is very low (4 or 5 meq/L) and will not contribute to the hyperkalemia. Furthermore, these fluids are superior to 0.9% saline, because they help more quickly improve metabolic acidosis.

Specific treatments for hyperkalemic cardiotoxicity include intravenous Calcium administration, intravenous Dextrose alone, insulin with Dextrose, bicarbonate administration and potentially Beta 2 agonists (inhaled albuterol or IV epinephrine). Calcium does not alter the extracellular concentration of K+ but does increase the cell’s threshold potential and therefore restores membrane excitability. In severe cases it is indicated for emergency stabilization in conjunction with other methods to reduce extracellular K+ concentrations. Dextrose, insulin, bicarbonate and Beta 2 agonists help drive potassium back into the cells and therefore reduce the extracellular potassium concentration. Sodium bicarbonate can exacerbate hypocalcemia and can lead to hypernatremia and should be used with caution. Insulin and Dextrose are the preferred method for emergency reduction of extracellular K+ and sodium bicarbonate is rarely used. Relief of the urethral obstruction is the necessary step to lower the potassium level. But the above steps will help to stabilize the patient and lower life-threatening potassium levels.

**Dosing suggestions for hyperkalemia:**
- 25% dextrose: 2-4 mls./kg of 25% dextrose IV stimulates endogenous insulin secretion to drive the K+ intracellularly.
- Regular insulin: 0.5 units/kg IV + 2 grams of dextrose/unit of insulin administered. Be sure to add dextrose (usually 5% initially) to the IVF and monitor BG levels to be sure supplementing long enough to outlive effects of insulin injection.
- 10% calcium gluconate (0.5 – 1.5 mls./kg IV. In general can use 2-3 mls./cat IV over 10-20 minutes while monitoring ECG): protects the myocardium (increases threshold voltage needed for discharge) BUT DOES NOT LOWER K+ LEVELS, so IVF diuresis and dextrose/insulin still indicated, as above, to reduce the serum potassium levels.

**Urethral catherization** -- We will review a few different catheter options during the laboratory session.

In order to achieve urinary catheter placement to relieve urethral obstruction, adequate relaxation of the patient and urethra is crucial. Pain management is also essential. This is a clinical challenge because cats with urethral obstruction often present with severe electrolyte and acid-base derangements. Anesthetic and sedative agents with the least cardiorespiratory side effects are desired with opiates and benzodiazepines being common first line agents. Together, opiates and benzodiazepines provide analgesic and anxiolytic effects. Benzodiazepines additionally aid in relaxation of the urethral sphincter mechanism. A local coccygeal epidural block can provide additional anesthetic effects as well. Deep sedation or general anesthetic depth should be titrated cautiously with close monitoring of vital signs, electrocardiographs, pulse oximetry and blood pressure during the procedure. We will discuss anesthetic and sedation options during the laboratory session.
**Perineal Urethrostomy**

Perineal urethrostomy is a good option for cats who are unable to be de-obstructed, have recurrent obstruction or have a past history of urethral obstruction. Perineal urethrostomy (PU) carries a good long term prognosis for improved and sustained comfort and function. A PU does not address the underlying cause of feline lower urinary tract disease (FLUTD) and thus recurrent signs of mild discomfort is not uncommon. Re-obstruction or severe FLUTD signs are rare. Complications with PU surgery are low with Bleeding, stricture formation, cystitis, wound dehiscence and incontinence reported. Long term complications include a reported increase in urinary tract infections, but reported rates vary depending on study designs.
Feline Entropion
Sara Calvarese, DVM, DACVO
Eye Care for Animals

Presentation
Entropion describes a condition of the eyelids in which the eyelid margin(s) are inverted towards the globe(s). Although a relatively uncommon disease in cats, entropion, especially of the lower eyelids, does occur. The condition is most commonly bilateral, however unilateral entropion may occur.

Primary entropion arises due to a conformational eyelid abnormality and may additionally involve excessive eyelid length. Primary entropion may affect both juvenile and adult animals and is seen more commonly in brachycephalic breeds and Maine Coon cats. Spastic entropion arises as a result of ocular discomfort and subsequent chronic blepharospasm. Spastic entropion may be differentiated from primary conformational entropion by the application of a topical anesthetic, which alleviates discomfort and results in resolution of blepharospasm and entropion.

Secondary entropion may also result from abnormalities of globe positioning (most commonly enophthalmos due to orbital fat and/or muscle atrophy in older cats) or globe size (most commonly due to microphthalmia in kittens).

Cicatricial entropion may arise secondary to post-inflammatory contracture and eyelid scarring.

Regardless of the etiology of entropion, corneal pathology generally arises as a result of chronic trichiasis, and sequestrum formation is common.

Diagnosis & Treatment
The corneas of patients affected by entropion may be temporarily protected by the liberal application of an artificial tear ointment.

Spastic entropion may be initially treated by temporarily evertting the eyelids using either non-absorbable mattress sutures or surgical staples. Sutures or staples may be left in place (and/or replaced) for weeks to months as appropriate.

Multiple surgical techniques have been described for the permanent correction of either persistent or primary conformational entropion, including the basic “Hotz-Celsus” procedure and its variations. These techniques are also appropriate for the management of entropion arising secondary to abnormalities of globe position or size as well as cictricial entropion. Those patients that develop a corneal sequestrum should be referred to a veterinary...
ophthalmologist when possible for eyelid correction as well as superficial keratectomy for removal of the sequestrum.

Postoperative care comprises routine systemic antimicrobial (if indicated), anti-inflammatory and analgesic care. An Elizabethan collar should be placed in order to prevent self-trauma and corneal health should be frequently monitored until eyelid healing is complete.

Extreme caution is advised when considering the permanent correction of entropion using techniques such as electrocautery, high wavelength laser energy and/or the injection of subcutaneous materials since the potential for inadequate correction as well as surgical complication associated with these procedures is high.

Clinicians
Drs. Esson and Calvarese are both board-certified diplomates of the American College of Veterinary Ophthalmology. They are highly skilled in the blepharoplastic techniques required to correct entropion of all types in all species. Additionally, they are both trained in advanced microsurgery and can perform keratectomies and corneal grafting when necessary.

Selected References


Avoiding a CATastrophe: Feline Neurological Assessment

Veterinary Neurology Center
Stephen Hanson, DVM, MS, Dip. ACVIM (Neurology), Stacy Dillard, DVM, Dip. ACVIM (Neurology),
Phil Schissler, DVM, Dip. ACVIM (Neurology)

The assessment of a feline neurological case presents some unique challenges. First of all, it is often difficult to know the full history of the neurological signs, due to the reclusive nature or outdoor life of some cats. More significant, though, is the difficulty of performing a comprehensive neurological exam. Unlike most dogs, cats frequently do not cooperate with some of the simplest neurological exam tests. Here are some examples:

Menace response: oftentimes absent or inconsistent in cats with normal neurological function; sometimes, tapping medial to the eye, then making the menace gesture elicits a blink

Postural reactions: sometimes cats withdraw the limb when CP testing is attempted – this is not a positive indicator of CP; cats may or may not participate in testing of placing and hopping; repeating the testing several times may provide helpful information (or may result in you being scratched)

Gait: many cats, placed on an exam room floor, will either freeze or scurry off with a crouched gait; sometimes they are more inclined to walk normally on carpet in a quiet area

Panniculus reflex: often absent in normal cats; testing generally elicits an aversive response, so it is not wrong to forego this test in most cases

Elevated Nictitating Membrane: Bilateral protruding 3rd eyelids in cats is often a sign of systemic illness and not of CNS disease. If no other neurological deficits are appreciated, then bilateral elevated 3rd eyelids is less likely to be of CNS origin. Unilateral elevation of the 3rd eyelid, however, can be a CNS sign such as with Horner’s Syndrome or ophthalmoplegia. In addition, the cat’s unique ability to raise the 3rd eyelid can make evaluating the eyes for PLR, position and nystagmus difficult in some instances.

Generally, it is best to glean as much information as you can by distant observation before doing the hands-on portion of the exam. Also, most cats seem to tolerate the neurological exam better when cranial nerve testing is performed last, so it is usually helpful to start with postural reactions, then check reflexes, then examine the cranial nerves. Moving through the exam in an expedient fashion is also helpful, since the length of the window of opportunity, where the feline patient cooperates, is unpredictable. When all else fails, owners’ home videos of the cat walking, jumping, etc. may have to be relied on.

Common Feline Neurological Conditions

Cryptococcosis: This fungal infection commonly occurs in outdoor cats, but is also often diagnosed in cats kept strictly indoors. The neurological signs associated with Cryptococcosis are diverse, and depend on the area of the neurological system affected. Screening for this infection with a serum Cryptococcus antigen titer is easy and has a strong positive predictive value. Unlike antibody titers, the positive antigen titer can generally be interpreted as a current infection. Finding the organism in CSF or having a positive CSF antigen titer are other ways of making the diagnosis of Cryptococcosis. Oral treatment with fluconazole usually results in resolution of the neurological signs, although prolonged and sometimes indefinite therapy is necessary to keep the signs at bay.
Feline Infectious Peritonitis (FIP): The dry form of FIP affects the CNS via immune-mediated pyogranulomatous inflammation in the brain, spinal cord or meninges. Definitive antemortem diagnosis is difficult, but MRI and CSF findings are helpful, as are consideration of signalment and historical factors. The MRI finding of subependymal contrast enhancement around the ventricles is fairly common with FIP and uncommon with other conditions. CSF may or may not show mixed inflammation. PCR testing on CSF is of equivocal value.

Meningioma: This is the most common brain tumor of cats. Meningiomas usually grow very slowly, and thus are typically large by the time neurological signs become evident. Occasionally, meningiomas occur in multiples. Surgical removal of solitary tumors is usually quite beneficial, although regional recurrence is common. This may not occur until years after tumor resection, and sometimes repeat surgical resection is feasible. Radiation therapy after surgical resection does not seem to affect the recurrence rate.

Lymphoma: Lymphoma is the most common spinal cord tumor in cats. Lymphoma masses usually occur as solitary extradural masses. Chemotherapy and radiation therapy have roles in treatment, although the long-term prognosis is usually poor.

Intervertebral disc disease: While this does occur in cats, it is not nearly as common a condition as it is in dogs. Diagnosis is best obtained with MRI. Type I disc extrusions and type II protrusions may be treated surgically, while Type III (non-compressive) extrusions do not require surgery. The prognosis hinges on the severity of neurological signs. [Reminder: always check femoral pulses and pad color when evaluating a cat with acute paraparesis.]

Vestibular disease: Vestibular disturbances are common in cats and efforts to localize the lesion (central vs. peripheral) will help in the development of a reasonable list of differentials. While many of the differentials described in this handout can cause central vestibular disease (e.g. lymphoma, cryptococcosis, meningiomas, and FIP), diseases that are commonly encountered and can lead to distinctly peripheral localizations include otitis media-interna, inflammatory polyps, and even idiopathic disease. Remember, in cats the tympanic bullae is separated into two compartments, an important consideration when planning procedures such as myringotomies and bulla osteotomies.

Cervical ventroflexion: While not a specific disease entity, cervical ventroflexion is commonly encountered in clinical practice and is most often associated with hypokalemia. However, it is important to more broadly associate passive cervical ventroflexion with neuromuscular weakness and to remember other key differentials including myasthenia graves, polymyositis, polyneuropathy, and thiamine deficiency. Emprosthotonos, with active cervical ventroflexion is seen frequently in severe feline CNS cases.
Taming the Ferocious Feline, Making Your Practice Feline Friendly

Melissa Tompkins, CVPM – Advanced Veterinary Internal Medicine

What is the benefit of becoming cat friendly practice (CFP)?
- It will make your practice more welcoming to cats and owners, while also helping you provide the highest quality care.
  - 60% of your cat clients know that their cat hates going to the veterinarian & this affects their decision to bring them in (Bayer Veterinary Care Usage Study).
  - 39% admit they only go when their cat is sick.
- 80% of hospital growth potential is in cats
  - Cats represent 55% of the animal population, yet only 39% of our patients (Bayer Veterinary Care Usage Study).

Goal of becoming a CFP
- Create a more calming environment for cats.
- Increase staff member’s comfort in handling cats – minimize injury.
- Elevate your hospital’s ability to provide the highest standard of feline care.
- Minimize stress during procedures or hospitalization.
- Helping improve communication with clients.
- Educate consumers about the need for routine and proper feline care.

What is needed to qualify?
- To qualify as a CFP you must have an AAFP member in your practice.
- Next step
  - www.catvets.com
  - Watch video and other program details.
  - Once you are a member click on “apply now” and follow the prompts.
  - After reviewing educational material in 10 feline care topics you will self-asses your practice with standard checklist criteria.
  - You will need to upload a few photos of your practice.

Status levels within the program
- The Silver Standard status is for practices that meet the essential standard criteria for a Cat Friendly Practice.
- The Gold Standard status is for practices that have incorporated the optimum level of Cat Friendly Criteria.

Waiting area
- While the ideal is to have a separate cat-only waiting room, simply creating a physical separation in the waiting room so it creates two separate spaces for dogs and cats in one room will be helpful.
- Examples:
  - Create seating back to back with tall plants in-between, so dogs and cats face opposite walls.
  - Bookshelves, half walls, room dividers/shoji screens, aquariums, or counters can be used to separate the spaces to avoid visual contact.
  - Display clear notices asking clients with dogs to keep them away from the cat areas. Instruct clients to cover the carrier with a large towel to avoid visual contact.

What do staff members need to do?
The practice will need to designate one to three ‘Cat Advocates’, but everyone on the veterinary healthcare team should understand normal cat behavior and feline handling, as well as be willing to work together to continually improve on the ways they provide care for cats.

- Cat Advocates are usually chosen for their experience, empathetic manner, and willingness to help answer cat owner questions.
- They will help train the team on the “Feline Friendly Behavior Guidelines.”

Tips for doctors working with upset kitties in the exam room

- Wash your hands before every patient.
  - Spray lab coat with Feliway spray.
- Do everything in exam room whenever possible.
  - Ask client to step out if needed.
- Perform exam wherever the cat is most comfortable, be flexible.
  - Use their bed, or towel on the counter.
  - If cat is on the floor try to do the exam while on floor.
    - Put yourself at their level and don’t force them to conform to your needs.
  - If worried they may nip, instead of muzzling or scruffing try using a towel as a neck wrap. This will allow you to control the cats head slightly and put a buffer between your hands and their mouth.
- If an older cat is too stressed and sedation not recommended, ask them to come back another day. This builds a caring relationship with the client.

Different sedation techniques

- Mild sedation
  - Feline practitioners recommend Gabapentin to use as a mild sedative in an upset kitty (direct source, Amanda Page, DVM).
    - Dosage 100 mg for a healthy cat 7.5# or greater.
    - Younger, fatter healthy cats can get up to 150 mg.
    - Older cat or on that has mild kidney disease 50-75 mg.
    - Not recommended for a cat with severe kidney disease and already on Gabapentin 50 mg.
    - Have owner give 90 min before they leave the house.
  - Butorphanol 0.5 mg/kg given IM 20 15-20 minutes before handling.
    - Works well to calm wiggly cats.
- Complete sedation
  - Dexdomitor, Ketamine, Butorphanol
  - Gas if have an older kitty and want a quicker recovery.