## Veterinary - -Medicine for exemplary patient care





#### Tackle the *other* f-word

Environmental enrichment to help fish flourish 298

## Soothe those irritated ears

A few expert pointers for treating otitis 288

#### **Ease the obstruction**

A how-to guide to performing feline urethrostomy 292

#### Idea Exchange

- Customizing client sympathy cards 306
- Making sure vaccines stay chilled out 306

# Frazzled? Fractious?

Cleaning up your language

when it comes to cats can help fix your feline fellowship p300



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## Veterinary reprint and the second sec

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## **Canine otitis:** Treatment advice from the **ear tip** to the **tympanic membrane**

How to achieve an optimal outcome in veterinary patients with ear infections or allergic conditions. By Craig Griffin, DVM, DACVD

fter treating countless canine patients with otitis externa over the years, I've arrived at a few fundamentals that all practitioners can benefit from. Review these quick pointers before your next otitis case.

## 1. First, do a hearing evaluation

I always establish whether a dog with chronic otitis can hear since this may change my approach to a case. If hearing loss seems permanent and nonreversible, then total ear canal ablation and bulla osteotomy become better treatment options. Hearing loss is the main side effect of these procedures, so if hearing loss were not an issue I would spend less time and expense trying medical therapy. In addition, hearing needs to be





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assessed before ear flushing and administering topical medications when otitis media is likely.

It surprises me how often dogs have fairly apparent hearing loss or deafness, yet the owners are not aware of it. This is especially common in a multi-pet household. It is important to ask the owner about the pet's response to doors, cars pulling up, and being called when outside and its ability to localize the sound, as well as whether the pet sleeps soundly.

When assessing hearing in the examination room, make sounds when the dog is not paying attention to you. It is important to not just see the dog respond to the sound but to determine whether it almost immediately localizes where the sound comes from.

A client communication or perception problem may occur if a near deaf or deaf dog is not recognized in the examination room and then the owner is warned about deafness as a side effect to the deep ear flush and the treatment prescribed for use at home. After the procedure or treatment, the client pays closer attention and recognizes the dog does not hear well and blames the treatment when in fact the dog had been deaf before the treatment.

Brainstem auditory evoked response (BAER) testing is a more accurate way of assessing a patient's hearing. This test allows one to assess hearing threshold, the level of sound that each ear detects. Unfortunately, it is not readily available.

## 2. Dilate the ear for cleaning

In patients with proliferative, end-stage otitis, it is difficult to impossible to get cleansers deep into the ear canal. To achieve this when a dog is anesthetized, use a 3-mm otoscope cone to dilate the ear and place the cone as far into the canal as possible. You can pass an ear loop down the canal just past the tip of the cone and then fill the cone with cleanser and slowly pull the cone out. This allows a layer of cleanser to be deposited on many canal folds as they fall back in place as the cone is removed.

#### 3. Use topical glucocorticoids

Topical glucocorticoids are the most common prescription drug used in treating ear disease, which makes sense because the most common causes of chronic otitis are allergic diseases (e.g. atopy, adverse food reaction). Even ear mites can stimulate an allergic reaction.

In addition, many patients with otitis have secondary bacterial or *Malassezia* species infections, and topical glucocorticoids may improve the response to topical antimicrobials. This has been shown in dogs with *Malassezia* species otitis<sup>1</sup> and is supported by the fact that most topical antibiotics labeled for the treatment of otitis in veterinary patients contain a glucocorticoid.

Eliminating or decreasing inflammation in the ear canal is an essential component of treating secondary infections and helps control the primary allergic disease as well. Thus, the real question is when you should *avoid* using them. I do not use glucocorticoids in patients with otitis when:

- 1. Cleaning the ears alone is effective
- 2. Infections are not responding to treatment
- 3. Ulcers are not healing even though infection appears to be controlled.

Glucocorticoids available for topical use in veterinary patients are-from generally the least to most potent-1% hydrocortisone, 0.015% triamcinolone, 0.1% triamcinolone, 0.1% betamethasone, 0.1% dexamethasone, 0.1% fluocinolone acetonide and 0.1% mometasone furoate. During initial therapy for or acute exacerbations of otitis, a potent topical glucocorticoid may be required, but once the inflammation or allergic reaction is controlled, use the least potent topical glucocorticoid possible that is still effective prophylactically or long-term. In cases of atopy or food allergy-induced

otitis externa, the pinna is frequently affected and should also be treated.

## 4. Try combination therapy

Combinations of medications may be helpful in eliminating resistant bacteria. Three different topical agents—antiseptics, synergistic agents and topical antibiotics—may be used to kill the resistant bacteria. The ear can be since the ears were cleaned and antiseptic and the synergistic agent Tris-EDTA were used as well as because of the high antibiotic concentration achieved at the site of infection with topical formulations.

**Antiseptics.** Topical antiseptics include such ingredients as certain acids (acetic, boric, citric, lactic), alcohols, aluminum hydroxide, chlorhexidine

Microbial resistance to antiseptics is generally not a problem, though this may be changing, which is another reason to use combination therapy.

cleaned with an antiseptic, and then the topical treatment may contain both a synergist (such as Tris-EDTA or miconazole) along with an antibiotic.

**Antibiotics.** In one study of 16 dogs with *Pseudomonas* species otitis externa that were treated empirically, 90% of the dogs with a resistant bacterial infection responded to a topical antibiotic that the organism was reported as resistant to, and 83% of the dogs responded when the empiric treatment involved an antibiotic that that bacteria was reported as being sensitive to.<sup>2</sup> The favorable response may have been due to the combination approach (0.25% or lower concentration), povidone-iodine, silver sulfadiazine and sodium chlorite. Micronized silver is a newer addition to veterinary topical antibacterial solutions.

Antiseptics kill organisms by methods other than antibiotics, generally are inexpensive and can work in conjunction with antibiotics. Microbial resistance to antiseptics is generally not a problem, though this may be changing, which is another reason to use combination therapy. Some ingredients that look promising for destroying biofilms are chlorhexidine, acetic acid, and Tris-EDTA, N-acetyl-L-cysteine, silver and sulfhydryl compounds.<sup>3-6</sup>

In cases resistant to all antibiotics, antiseptics may be the treatment of choice. The drawback to using antiseptics is they often need to have contact time in clean ears and be used multiple times a day. Some are also irritating, which limits their use. The antiseptic should be left in the ear canal for five minutes. In difficult cases in which the ears are being cleaned under sedation or anesthesia, I may leave acetic or boric acid in the ear canal for five minutes and then follow with a five-minute soak with Tris-EDTA and chlorhexidine. When antiseptics are the only topical antibacterial used, then they often should be applied four to six times a day.

**Synergist agents.** Synergistic agents enhance the bactericidal effect of the agent they are mixed with to a greater extent than the additive effect of the two ingredients. Tris-EDTA is the synergist used the most in veterinary patients with otitis. It enhances the effects of antibiotics as well as the low, safe concentration (0.15%) antiseptic chlorhexidine.<sup>7.8</sup>

Polymyxin is not only an antibiotic but also a synergistic agent. Polymyxin has a cationic detergent effect and, similar to Tris-EDTA, disrupts the outer membrane of bacteria, particularly gram-negative bacteria. It is synergistic with some other antibiotics and, when mixed



Find the references for this article at dvm360.com/ OtitisTips.

#### **OTITIS** treatment tips

with miconazole, is synergistic for killing *Malassezia* species but also highly synergistic for killing *Pseudomonas* species.<sup>9</sup> Miconazole may also have the synergistic effects as it appears to by synergistic with chlorhexidine.<sup>10,11</sup> By combining synergistic agents with antibiotics, even resistant strains of *Pseudomonas* species are killed.

### 5. Use a few precautions for repetitive ear flushes

Since many patients with chronic endstage otitis will require multiple ear flushes in the clinic, clients are often reluctant to allow repeated general anesthetic episodes. Instead, it is common to use sedatives and analgesics. In these cases, even though a patient's laryngeal reflex may be present, it can be suppressed, so take precautions to prevent inhalation pneumonia and avoid spreading resistant *Pseudomonas* species and methicillin-resistant *Staphylococcus* species to the lungs.

So remember—any time you flush an ear with access into the middle ear (a ruptured tympanic membrane) in a sedated dog and an endotracheal tube is not in place, the dog's head should be angled down to prevent the flush from going through the auditory tube to the back of the throat and being aspirated. For example, we raise the racks on the wet table at one end and the dog is positioned in lateral recumbency with its nose at the low end of the rack.

#### 6. Battle resistant *Malassezia* species infections

In patients with possible resistant *Malassezia* species, posaconazole

is reported to be more effective than other antifungals, though the increased potency has varied.<sup>12,13</sup> Miconazole is most often found at 1%, but when treating difficult cases, higher concentrations-2.3% (Surolan-Elanco) or 1.5% (Easotic—Virbac)—would achieve higher concentrations in the ear and may be more effective. Also as stated above, polymyxin is synergistic with miconazole for killing Malassezia species. The newest addition to the active agents for *Malassezia* species infections is 1% terbinafine in the new combination weekly product, Osurnia (Elanco).

## 7. Be sure to perform follow-up cytology

Do not discontinue antiseptic, antibiotic or antifungal topical therapy until cytologic examination shows no inflammatory cells or DNA strands. It is common for practitioners or clients to discontinue therapy too early, especially if the ear looks reasonably good and there is no obvious odor or discharge. I see many cases when I think it is time to discontinue treatment, but because of the results of cytologic examination, I continue. Be sure to caution owners to expect that based on cytology, treatment may need to continue despite the ear looking better, and if all is clear they will be pleased and think you-or theydid a better job than expected. VM

Craig Griffin, DVM, DACVD Animal Dermatology Clinic San Diego, California

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Adverse Reactions: The most common adverse reactions reported during the course of a US field study for treatment of otitis externa in dogs treated with OSUFINIA with 1 tube per affected ear(s) and repeated after 7 days were Elevated Alkaline Phosphatase, Vomiting, and Elevated AST, ALT, ALP\* "Aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP). Two dogs with pre-existing elevations in ALP were reported to have an increase in liver enzymes (ALF) ALT and/or AST) at study exit. Subsequent clinical chemistries returned to pre-treatment levels in one dog, while no follow up was performed for the second dog.

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#### Effectiveness:

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U NOVARTIS

# How to *perform* a feline **perineal urethrostomy**

A step-by-step surgical guide, tips to optimize results, and revision techniques, just in case. By Christopher Adin, DVM, DACVS







erineal urethrostomy is a surgical method for alleviating urethral obstruction in cats with complicated or recurrent obstructive feline lower urinary tract disease. While long-term quality of life after perineal urethrostomy in cats with obstructive feline lower urinary tract disease is good (as assessed by owners) and the recurrence rate is low, there are several potential intraoperative and postoperative complications. The good news is that with proper technique and equipment, these can be avoided.

#### Traditional technique for perineal urethrostomy

**Step 1.** Position the cat in perineal position, with padding under the cranial thighs to prevent neurovascular injury during restraint. Aseptically prepare the perineal area, which usually requires removing the urinary catheter if one was placed before surgery. **Step 2.** After draping, place and secure a urinary catheter. I prefer to use a 5-Fr red rubber catheter, securing it with either a finger trap suture or by clamping the catheter in the penis using Allis tissue forceps. The latter technique allows you to manipulate the penis and provide tension during dissection. It is helpful to use a sterile marker to plan the incision location, tracing a fusiform-shaped incision that includes the penis and scrotum, but terminates at least 1 cm ventral to the anus (Figure 1).

**Step 3.** After making an incision with a scalpel blade, incise the subcutaneous tissue until the penis is isolated (*Figure 2*). Begin dissection around the penis on the lateral side, pulling the penis to the opposite side to create tension on the site of dissection and to improve exposure in that region. I prefer to use tenotomy scissors to perform this dissection because the delicate, blunt tips are well-suited for this area.

#### SURGICAL how-to

Step 4. If you are performing this procedure on your own, after initial dissection it helps to place a self-retaining retractor by using either a Lone Star retractor or several pediatric Gelpi retractors. With proper retraction, the paired ischiourethralis muscles can be palpated, inserting on the ischium on either side of the penis (Figure 3). Isolate these muscles and either elevate them off the bone by using a periosteal elevator or scalpel blade or simply transect them with electrocautery to minimize hemorrhage.

You'll know you've achieved complete transection if you can pass a finger lateral to the penis and into the pelvic canal without resistance. Repeat this on the contralateral side.

**Step 5.** Next, pull the penis dorsally to apply tension on the penis' ventral ligament, and transect this ligament by using tenotomy scissors (*Figure 4*). Continue ventral dissection until you can pass a finger without resistance into the pelvic canal in this region as well (*Figure 5*). Perform final dissection dorsally, but do so with more caution as this is where the urethral blood supply and innervation are located.

**Step 6.** When the penis is completely mobilized, locate the bulbourethral glands (poorly

developed in castrated males). Dissect the retractor penis muscle from the dorsal aspect of the penis, transect it proximally and remove it to expose the urethra on the dorsal surface of the penis.

Step 7. Next, carefully incise the urethra at a distal location with a scalpel blade to make a small stab incision over the red rubber catheter (Figure 6). The tissue is thicker than you may initially expect, and a firm incision is required to penetrate the urethral lumen, exposing the catheter. Extend the urethral incision by inserting the fine tenotomy scissors into the incision and moving proximally to the level of the bulbourethral glands. The incision may be extended about 1 cm cranial to the bulbourethral glands to maximize urethral diameter, but incision beyond this point will place excessive tension on the stoma when suturing the perineal skin. When a mosquito hemostat can be passed up to the hinge, the urethral diameter is sufficient and suturing can begin (Figure 7).

**Step 8.** At this point, remove the retractors and place initial sutures beginning at the apex of the urethrostomy (dorsally). I place the sutures from inside to out (urethral mucosa to skin), placing one interrupted suture in the center of the urethra









#### SURGICAL how-to





and the proximal aspect of the incision, followed by two more interrupted sutures 45 degrees to the initial suture, spacing about 1 to 2 mm between sutures (*Figure 8*). It is helpful to preplace all three of these sutures to maximize exposure of the mucosa and achieve perfect placement. Successful apposition of mucosa to skin is crucial at this point, so use of magnification is encouraged. If you are in doubt, take the sutures out and replace them.

**Step 9.** After placement of these three key sutures at the dorsal aspect of the urethrostomy, complete the stoma by placing interrupted

sutures spaced 1 to 2 mm apart, creating a drain board of urethral mucosa. Then lightly ligate the penis and transect it distally before completing the stoma (*Figure 9*).

#### Technique modifications

A few modifications have been developed to achieve optimal results.

### Continuous pattern with absorbable suture. In one

study, a minor modification of the technique was described that involves applying two continuous suture patterns with absorbable suture material (polydioxanone).1 This modification allows for decreased operative time, minimizes the volume of suture material in the wound and obviates the need for suture removal, which can often require sedation. No strictures or dehiscences were noted in the 18 cases that were reported, and the overall complication rate was similar to previous reports.

#### Positioning and approach.

Perineal urethrostomy can also be performed with the cat positioned in dorsal recumbency. This is a major advantage in cats with bladder stones, allowing simultaneous cystotomy and perineal urethrostomy without repositioning. To facilitate exposure of the perineum, the pelvic limbs are pulled forward and secured to the table. Although this technique is no more difficult than a perineal approach, it does require a bit of practice before you are comfortable with it.

## Postoperative care pointers

- > An Elizabethan collar must be placed *before* recovery from anesthesia, as immediate self-trauma is a common cause of immediate incisional dehiscence.
- > Analgesia with a long-acting opioid such as buprenorphine can be combined with a single perioperative dose of a nonsteroidal anti-inflammatory drug in cats that show no evidence of renal dysfunction due to obstructive uropathy.
- > Cover the wound with petroleum jelly to minimize urine scald. Removing clots that form on the incision is discouraged as this will cause additional trauma to both the cat and the incision.
- > Maintenance of a urinary catheter can be considered to bridge the incisions until a fibrin seal is achieved. Some surgeons avoid using urinary catheters because of concerns that the catheter may cause trauma to the incision line and increase the risk of stricture formation.
- > Intravenous antibiotics (cefazolin) are administered at the time of induction but are

typically discontinued after surgery unless indicated by specific culture and sensitivity results.

> Recheck urine cultures are indicated every six to 12 months because of an increased risk for ascending urinary tract infections.

#### **Complications**

Despite the widespread success of perineal urethrostomy in accomplishing patent urinary diversion in cats, a number of complications have been reported, including stricture of the urethrostomy, subcutaneous urine leakage in the perineal region, hemorrhage, urinary tract infection and incontinence.<sup>2</sup> Although some of these complications can be managed conservatively, many require surgical revision to restore urinary function. Thus, almost since the inception of the perineal urethrostomy procedure, there has been a need for revision methods.

#### **Revision techniques**

#### Prepubic urethrostomy.

One of the original methods for salvage of failed perineal urethrostomy surgery is prepubic urethrostomy, which involves transecting the urethra and transposing the stoma to a caudal abdominal location, cranial to the pubis. Unfortunately, subsequent experience with this technique showed a high rate of postoperative complications, including urinary incontinence (six of 16 cats) and urine scalding (seven of 16 cats).<sup>3</sup> Six cats were euthanized within six months of surgery, and mean survival was only 13 months.

#### Subpubic urethrostomy. A

simple extension of the antepubic urethrostomy technique involves preserving the pelvic urethra and then transposing it to a subpubic position.<sup>4</sup> This technique avoids

the urine scald associated with prepubic urethrostomy in cats by placing the stoma caudal to the abdominal fat pad. Preservation of more urethral length may also contribute to improved continence with this technique and improved resistance to urinary tract infection, although no large studies have been published to date.

#### Primary revision. A 2006

study described the results of primary revision of the perineal urethrostomy by revised dissec-

## **Tips** for surgical *success*

- > Use of magnification will ensure correct identification of tissue layers. I recommend 3.5x, wide field.
- > Use of delicate suture and proper instrumentation will improve the success rate in urethrostomies.
- Sentle tissue handling is necessary, as trauma to the mucosa will cause necrosis and dehiscence.
- The most common cause of stricture after perineal urethrostomy is failure to adequately dissect the ischiourethralis muscles from the pelvis and failure to correctly appose mucosa-to-skin. Tension-free anastomosis must be achieved.
- > Place sutures from inside to out.
- Stents may be used to encourage healing of partial defects or to prevent urine from contacting the incision during initial healing.
- > Primary revision of the original stoma is the treatment of choice for failed perineal urethrostomy.

tion and mucosa to skin apposition.<sup>5</sup> In this study, eight of 11 cats had inadequate dissection to the level of the bulbourethral glands and three had poor apposition of skin to mucosa during initial surgery. Primary revision of the stoma was effective in eight of nine cats available for long-term follow-up.

#### Transpelvic urethrostomy.

Another recent study described transpelvic urethrostomy as an alternative salvage procedure for cats with distal Conservative therapy with urethral catheterization or urinary diversion can provide an acceptable long-term solution in selected animals.

urethral trauma or failed perineal urethrostomy surgery.<sup>6</sup> The caudal aspect of the ischium is removed through a ventral approach, and the urethral stoma is translocated to a subpubic position. The advantage of this technique is that it avoids the high rate of incontinence and urine scalding that is seen in prepubic urethrostomy by preserving the intrapelvic urethra and urethral sphincter. Only one cat developed temporary incontinence, which resolved by four weeks after surgery.

**Conservative therapy.** As many clinicians have learned, conservative therapy with urethral catheterization or urinary diversion can provide an acceptable long-term solution in selected animals with urethral tears and urine leakage. A recent clinical retrospective study evaluated prognostic factors for animals with urethral trauma in 20 dogs and 29 cats.7 Urethral rupture was more common in males of both species, with etiology being most commonly related to vehicular trauma in dogs and iatrogenic injury during catheterization in cats. The presence of multiple traumatic injuries served as the

only negative prognostic indicator in this series, with location of rupture, clinicopathologic findings, treatment method (surgery versus catheterization) and etiology having no significant effect on outcome.

**Tube cystostomy.** Tube cystostomy is an accepted method for short- or long-term urinary diversion. A landmark study performed in an experimental model of intrapelvic urethral transection and primary repair in normal dogs showed that there was no difference in healing of urethral wounds when tube cystostomy was compared to transurethral catheters or both techniques combined.<sup>8</sup>

A recent follow-up study on tube cystostomy in 76 animals showed that complications were common (49%), although most were treatable through nonsurgical intervention.9 Urinary tract infection was nearly universal (16 of 17 animals that had urine culture checked after tube implantation had positive) results. Inadvertent tube removal was the most common major complication (occurred in 12 of the 76 animals) but was typically handled conservatively (n=8) or by tube replacement

(n=4). Only one animal required surgical revision due to uroperitoneum after tube removal. The most common minor complication was irritation around the tube site (n=7) or urine leakage around the tube (n=7). Complication rate was not associated with species, tube type or duration of tube retention. VM

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## **Helping fish flourish:** Environmental *enrichment* for aquatic species

ecent research has dispelled the myth that fish and other aquatic species do not feel pain or experience stress. Not only do they demonstrate physiologic and behavioral responses to fear and stress, we now know that they are even capable of forming long-term memories.<sup>1-4</sup>

Given this information, the authors of this article discuss methods of providing environmental enrichment for aquatic species to alleviate stress in various settings including home hobby aquariums, backyard ponds and public educational aquariums. They discuss application of the five freedoms of welfare that are used in design-



#### JOURNAL SCAN

ing programs for terrestrial animals and how these can be applied to aquatic species in captivity as well. These freedoms include:

- 1. Freedom from hunger and thirst
- 2. Freedom from discomfort
- 3. Freedom from pain, injury or disease
- 4. Freedom to express normal behavior
- 5. Freedom from fear and distress

In general, the authors note that integration of these freedoms into aquatic animal care will involve good husbandry practices including special attention to nutrition, housing, temperature, lighting and water quality. The needs of these species in all of these aspects vary greatly; there is no "one size fits all" approach to their care.

#### **Fish fare**

Not only is there great variation in what aquatic species eat, but the way that they eat it (e.g. scavenging vs. foraging vs. hunting) varies among species and needs to be considered when designing the ideal captive environment. Some animals will benefit from the use of puzzle feeders or sinking feeders, while others will require live prey.

## New aquatic acquaintances

Acquiring new animals poses a unique housing challenge

because of the need for a quarantine period, according to the authors. They discuss several tips for alleviating the stress of quarantine such as allowing for an acclimatization period before initiating prophylactic medications, providing PVC pipe for hiding, as well as maintaining strict water quality and temperature.

The authors also recommend that newborns be separated immediately from adults since infanticide is common among many aquatic species in captivity. In addition, newborns will benefit from being provided live food as the mortality rate is higher among newborns that are fed dry food alone.

#### **Piscine premises**

Natural lighting is also a critical aspect to any environmental enrichment scheme and will need to be determined based on the tank size and the species on display. Varying intensity and wavelength should be considered and, if possible, programmed to reflect seasonal changes. Furnishings may also need to be varied based on seasonal changes to provide the animals new places to hide, hunt, mate and explore.

#### **Marine drills**

To decrease the stressful effects of medical procedures, the authors recommend "target training" aquatic species. This entails training the animal to come to a specific colored object, light or panel that is not routinely kept in the enclosure and then offering a food reward when contact with the target is made. The training allows for less stress for medical interventions, weight checks or transport.

#### Conclusion

The overall goal of any environmental enrichment practices is to encourage natural behavior. While this has to be balanced against the logistics of living in a captive environment, every effort should be made to fulfill the requirements of each specific species. By applying the basic tenets of animal welfare to aquatic species, "enrichment programs are designed to decrease stress, increase natural behaviors, and by decreasing stress, decrease injury and disease." VM

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This "Journal Scan" summary was contributed by Jennifer L. Garcia, DVM, DACVIM, a veterinary internal medicine specialist at Sugar Land Veterinary Specialists & Emergency Care in Houston, Texas.

#### **LEADERSHIP** challenge

## lip your script to fix relationships with cats

Go beyond what meets the eye and see that these "fractious" and "frazzled" felines are actually trying to tell you something different with their body language.

By Elizabeth Colleran, DVM, MS, DABVP (feline practice)

ats don't have an opinion about how you describe them. What matters to them is how this experience, in this moment, compares with similar remembered events. How we describe a cat's emotional state, however, does have a tremendous impact on the people around us. First, we need to be right about our interpretation of facial expression and body postures. Next, we need to accurately reflect cats' emotions to people who will be interacting with our patients. We need to use the words that are descriptive without imposing a negative interpretation.

#### Sticks and stones ...

Words not only affect us temporarily—they change us. Attitudes are infectious and can affect people that are near a cat exhibiting a given attitude, which can, in turn, influence their behavior. For example, if a friend describes someone you've never met as bossy or domineering, when you meet that individual, your tone and body language may be quite different than if that person had been described to you in advance as charming and considerate. In the same way, our description of a cat's attitude will influence how support staff and other doctors will choose to interact with that patient.

In recorded interviews conducted by *Veterinary Medicine*, the cat pictured on the next page was described as "ticked off," "mad," "dangerous" and other similar but unprintable descriptors. In fact, this cat is terrified.

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Fear is a response that enables avoidance of perceived danger. Anxiety results from the anticipation of an adverse event based on a previously negative, fearful or painful experience. Previous experiences in the veterinary setting can predispose patients to reacting fearfully from a remembered event or react

fearfully to a change in circumstances.

Because the ears are very sensitive, a cat that is frightened will fold them back, presumably to protect them from anticipated harm. Because the words used to describe the cat to the right have very negative connotations, it is quite possible that this cat might have been handled more aggressively or roughly than it should have been. How we describe our patients can have a powerful impact on their experience with us. It is true that this cat's facial expression indicates that care must be taken when handling it, but not that it is a bad cat.

#### A cat with a past

We also must be careful to be correct in our interpretation of a feline patient's emotional state. When we ask support staff to interact closely with a patient, they need to know what



to expect. That is often the function of our historical experience with a patient as well as our observation of behavior in the present moment.



While several people recognized the tense expression, dilated pupils, forward whiskers and intent gaze of the cat pictured above, this cat was also described by others as "comfortable," "in a good spot" and "happy."

If orders had been given for him to have blood samples drawn or radiographs or another form of therapy performed while using the latter descriptors, support staff members might have been very relaxed in their approach to him. That would have been a dangerous mistake. Historically, this patient needed to be sedated in order to be examined. After observing him entering the building in his owner's arms, we learned that we could interact safely with him—as long as she held him. Knowing our patients and recording our observations in neutral language can help ensure that we make a balanced yet informed plan for interacting with challenging patients.

#### A long history of clandestine behavior

Cats draw conclusions about the relative safety of an experience based on previous, similar experiences. A fearful cat will make itself look as small as possible by crouching and then slink away, or if the cat judges that running away may provoke a chase, it will make itself look as large as possible by arching and raising the fur on its back. The choice will be influenced by what happened the last time the cat was in similar circumstances. It is no wonder then that early veterinary experiences have powerful impact.

Cats still have three out of four feet firmly planted in their wild origins. They are undemonstrative; they keep feelings to themselves and rarely tell us what they need, beyond asking for food when they're hungry. Cats carry the legacy of their primal pasts, and much of their behavior still reflects their wildest instincts. To understand why a cat behaves a certain way under any circumstances, we must understand where they came from and the influences that have molded them into who they are today.

The way they experience the world around us is far different from the way we do. Armed with this knowledge, we can learn to interact with them in ways that reduce stress and minimize arousal. For a solitary, territorial, hunter suddenly removed from his home range and faced with a variety of strangers, new odors, loud noises and unwanted attention, it is no surprise that they react fearfully.

#### The more cats, not necessarily the merrier

Opinions differed on the cat pictured below. He was alternatively described as "happy," "a little fearful," "perturbed," "relaxed" and "comfortable." Knowing



how cats sleep may help doctors and support staff recognize problems at home in situations where cats have not formed social groups. Just because two cats have the same owner does not mean they are going to get along. Owners often ignore the cardinal rule of cat society: Proceed with caution when meeting any cat that has not been part of your (cat) family for as long as you can remember.

Many cat owners, oblivious to this principle, blithely assume that when they obtain a second cat, the two will quickly become friends. One sign of social unrest and stress is seen in this cat: defensive sleep. While he is curled up, with his tail wrapped around his body, he seems rather relaxed. However, his ears are pointed forward and



#### You're a wild one!

Listen in as feline specialist Dr. Ilona Rodan discusses the wild origins of domestic cats and how ancient instincts come into play in your clients' households at **dvm360.com** /feralfelines. Negative words in the interviews included **dangerous**, **mad**, **likely to attack**, **bad** and **ticked off**. These are words that can change attitudes from respectful to antagonistic.

tense, and one eye is partially opened but not staring intently. He is actually in a boarding area that he has grown quite accustomed to. He was sleeping comfortably until he heard the door open. While he is aware of a change in his environment, he hasn't changed his body posture to prepare to flee or fight.

Similarly, cats that don't trust their cat housemates much may exhibit this type of sleep behavior and other problems related to household stress may develop. Counseling clients to provide

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ample resources including separate spaces to eat, sleep, rest, escape and eliminate is crucial for reducing stress in these homes. Understanding subtle behavior cues and how to interpret them is key.

#### **Final thoughts**

We need to describe cats' emotional states in terms that invite the appropriate attitude on the part of the entire team. Negative words in the interviews *Veterinary Medicine* held included "dangerous," "mad," "likely to attack," "bad" and "ticked off." These are words that can change attitudes from respectful to antagonistic. They can change behavior from appropriate caution and gentle restraint to forceful even painful choices. VM

Dr. Elizabeth Colleran is the owner and hospital director of two exclusively feline practices and is an ABVP Diplomate in feline practice. She participated in the 2013 Bayer Veterinary Care and Usage Study 3 – Feline Findings. Prior to veterinary school, she worked in Sales and Marketing Management for IBM where she worked with Fortune 500 companies to streamline internal networks. Her passions are her crazy husband, two equally crazy Burmese cats, bicycling and Indian cuisine.

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