Medical Causes of Behavior Problems in Dogs and Cats

Amy L. Pike, DVM, DACVB

What is the confound?
A behavior change may be the first thing that an owner notices with primary medical disorders. It seems fairly obvious when presented with increased drinking that we need to search for an underlying medical component. However, what about something like aggression? Some owners may not even mention such a behavior to their veterinarian, instead employing a trainer to assist with the behavior problem. However, if the aggression is due to underlying osteoarthritis pain, this obviously is a medical etiology that needs to be addressed by a medical professional. Even with a primary medical disorder, there may be behavior problems that persist after resolution, needing a qualified veterinary behaviorist to address.

Common medical issues
Medical disorders affecting all organ systems can cause changes in behavior. Anxiety disorders are a threshold phenomenon in which anything that increases arousal levels can push the patient over threshold, allowing the behavior to manifest. In this lecture we will discuss the most common medical issues which either cause behavior, manifest as behavior, or increase behavior problems:

- Dermatologic
- Endocrine
- Urinary
- Gastrointestinal
- Neurologic
- Pain

Screening
You don’t know that which you fail to ask about. Without screening, many clients are not going to voluntarily offer information about behavior unless it is causing damage to their property or to people. Some owners may not feel that their veterinarian is the most qualified to handle questions about behavior (although they may still ask the dog groomer, their neighbor, their cousin’s brother’s friend, etc.). Dog trainers tend to be really good at marketing their services for behavior (and even calling themselves “behaviorists”) so some owners may pursue that route instead. In addition to the typical questions of eating/drinking/urinating/defecating and coughing/sneezing/vomiting/diarrhea, add in questions about behavior as well. You can simply ask “are there any behaviors which your pet is exhibiting that you are curious about” or use a standard questionnaire. Remember to not use charged words such as “problem” or “concern” in your question as these may be off-putting to some owners who may feel they will be judged as being to blame for causing the behavior, or judged for thinking it’s even a problem to deal with.

One of the things we ask in behavior practice is the “why now?” question. Why all of a sudden is the owner pursuing a behavioral consult- is it because the behavior is truly acutely present, or has
the behavior been present to a low level for awhile and now all of a sudden is acutely worse, or is it now all of a sudden an issue for the owner (getting new carpet perhaps?). Its important that we figure out the answer to the “why now” in order to determine the best diagnostics, the best course of treatment and the prognosis for resolution.

Behavior is a diagnosis of exclusion. A minimum database for behavior is a thorough physical exam (sedate if needed), orthopedic evaluation, basic neurologic exam, CBC, Chemistry panel, urinalysis and thyroid panel (minimum total T4 and free T4 by ED). This is imperative to rule out medical disorders that cause behavior but also needed if you are even considering using psychotropic medications. There may be additional diagnostics warranted depending on the body system affected.

**Dermatologic**

Overgrooming is the most common dermatologic disorder you may be presented with in feline practice. Cats normally spend a large portion their day grooming. However, they do not bite or pull the fur out, as much as using their normally cornified taste buds to naturally pull the loose hair out. Additional diagnostics for overgrooming cats include cytologic examination of skin scrapings, fungal culture of hairs, trial treatment with topical parasiticides, dietary exclusion trial, assessment for atopy, testing for endocrinopathies, histologic exam of biopsy samples, and trial treatment with prednisolone to rule out pruritis. Medical etiologies for overgrooming include allergic dermatitis (food or environmental), flea allergic dermatitis, other parasitic dermatoses, and hyperthyroidism. In one study of cats with presumptive psychogenic alopecia (Waisglass, et al, 2006) a medical diagnosis with pruritis was diagnosed in 16 of those 21 cats enrolled (11 of 16 had multiple conditions). Only 2 were found to solely have psychogenic alopecia and 3 had a combination of behavior and medical.

Undergrooming is seen in cats with osteoarthritis (its too painful to accomplish it), cats that are too obese to be able to reach the caudal aspect of their body, and in cats with anxiety disorders who are too stressed to relax and groom. The diagnostics include a nutritional assessment and weight reduction plan; orthopedic exam, neurologic evaluation and radiographs to evaluate for osteoarthritis, and environmental and behavioral history.

Acral lick dermatitis is seen most commonly in dogs. It occurs typically on the dorsal aspect of the carpi and tarsi, but can potentially occur at any location the dog is able to reach. Medical rule outs include primary dermatologic disease, joint pain, and primary behavioral disorders. ALD can cause secondary dermatologic disease that needs treatment however treatment may not resolve the underlying reason for the licking, causing a recurrence of disease after treatment is discontinued. ALD is considered a compulsive disorder in which large breed dogs are predisposed to.

**Endocrine**

Endocrinopathies may manifest as a sudden change in behavior or an exacerbation of behavior already present due to a heightened state of arousal. Common disorders that present as primary behavior include diabetes, hyperadrenocorticism, hypo and hyperthyroidism, and tumors of endocrine origin. Again, it seems fairly obvious that when presented with a dog who is drinking
in excess, we pursue diagnostics. However, some owners, and veterinarians, when presented with a cat who urinates outside of the litter box may automatically default to a primary behavioral disorder. However, if a cat is drinking more (unbeknownst to its owner) due to hyperthyroidism, they may be urinating more often, and therefore making the litter box more soiled, and therefore may urinate outside of the box because of a dirty box as a result of the polydipsia. A dirtier box from a cat who is hyperthyroid and PU/PD may also cause a housemate to urinate outside the litter box which is why it is so important to understand the entire household when working up behavior problems.

**Urinary**
Inappropriate elimination is a common concern among owners. It still compromises the #1 reason for relinquishment of cats to shelters. The minimum diagnostic plan should include the CBC, Chemistry panel, thyroid panel and urinalysis. With this minimum database, a veterinarian should be able to determine the best plan of action for treatment. Additional diagnostics, including abdominal radiographs or urinary ultrasound may be warranted depending on the presenting complaint or results of preliminary diagnostics. It is important to take a full environmental and behavioral history, and it may be necessary to video tape the culprit to determine the trigger.

Anything that causes increased frequency and urgency can cause inappropriate urination for both dogs and cats. Our primary medical differentials include infectious, primary renal disease, urinary calculi, and incontinence. Once medical has been ruled out, a thorough behavioral history should elucidate the cause. In dogs, the most common behavioral differentials include separation anxiety, marking, storm phobia, and lack of house training (or potentially a combination thereof). In cats, inappropriate elimination falls into the categories of substrate preference, substrate aversion, location preference, or location aversion. We will cover feline inappropriate urination in depth in another lecture during this seminar.

**Gastrointestinal**
Common behavioral problems in this category include excessive licking of surfaces (ELS), pica, fecal house soiling, and polyphagia. Research out of the University of Montreal (Becuwe-Bonnet et al, 2012) found that 14 of 19 dogs that presented for ELS had primary gastrointestinal disorders and the ELS dogs were not more anxious than control dogs upon comparison. As yet unpublished research will show that a large percentage of cats with pica have primary gastrointestinal disorders as well (Personal communication with Dr. Isabelle Demontigny-Bedard, DACVB). Fecal house soiling in dogs and cats have similar behavioral etiologies as urinary house soiling. Medical differentials include osteoarthritis, neurologic disease, colorectal or anorectal disease, and structural diseases. In an effort to determine the culprit of fecal house soiling, the shavings of non-toxic crayons of different colors can be fed to each household member to see whose feces are whose. Although no robust research has been performed to date, veterinary behaviorists and internists seem to agree that middening in cats is very rare and most cases of fecal house soiling in cats are due to a primary medical etiology. Fecal house soiling may not resolve after resolution of the medical disorder due to a negative association with the litter box. Additional diagnostics for ELS, pica, house soiling and polyphagia would include
fecal float, fecal smear for cytology and culture, upper GI endoscopic evaluation and biopsies, and lower GI colonoscopic evaluation and biopsies. Polyphagia would also need additional evaluation for endocrinopathies including thyroid panel and ACTH stimulation testing. Inter-dog and inter-cat conflict are among the most common behavioral reasons for polyphagia.

**Neurologic**
The neurologic system and behavior go hand in hand and it may be difficult in some cases to tease out medical versus behavior. In addition to the standard diagnostics, a full cranial nerve and neurologic exam is imperative. Some owners may be financially willing to also allow an EEG and MRI, but in my experience, without the almost unequivocal possibility of a tumor/lesion, most will not. Central brain lesions can manifest as altered mentation, loss of learned behaviors (training), house soiling, disorientation, confusion, altered activity levels, loss of temporal orientation, vocalization, and a sudden change in temperament (fear, anxiety, or aggression). Seizure disorders may manifest as repetitive or compulsive behaviors or transitory alterations in temperament (ex- being suddenly aggressive upon waking). Compulsive disorders such as fly biting and tail chasing may also have an attention seeking component that must be ruled out. In addition, tail chasing may be due to pelvic, lumbar or sacral pain; fly biting may be due to ocular abnormalities such as vitreal “floaters”. Sometimes trial therapy with phenobarb, which has a shorter half-life than many of our psychotropic medications, may lead us to a seizure diagnosis simply by response to therapy. The compulsive disorder often seen in mini schnauzers of hind-end checking could be due to anal gland pathology or lumbo-sacral pain. Hyperesthesia syndrome may be due to dermatologic disease or underlying neuropathology such as a partial focal seizure. Cognitive dysfunction is a diagnosis of exclusion of other medical and behavioral disorders. We will be covering CDS in depth in another lecture in the seminar.

**Pain**
In the last 20 years in veterinary medicine, there has been a big push for appropriate pain control, especially for acute pain from veterinary procedures. However, daily chronic pain can be difficult at best to diagnose and often relies on the owner’s ability to notice a change in mobility and/or activity in their pet. The stress of being examined in the veterinary hospital setting may over-ride the pet’s pain, making the clinicians assessment inaccurate. In some cases, a sudden change in behavior or exacerbation of behavior already present, may be due solely to pain. This is commonly seen with aggression towards housemates, children in the home, or to owners when the dog or cat does not want to be approached or handled due to underlying pain (osteoarthritis or otherwise). In addition to the standard diagnostics, an orthopedic evaluation and radiographs may be necessary to rule out pain as a factor. A pain control trial including NSAIDs, opioids, and/or alpha-2-delta-ligands (Gabapentin) can rule in or out pain as a contribution to behavior.

**References**
