Differences and similarities between behavioral and internal medicine

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The field of behavioral medicine is relatively new and has become a prevalent part of veterinary medicine only within the last 20 years. Although the study of animal behavior is not new (ethologists had been studying animals in the wild for quite some time) it was the melding of the disciplines of psychology and ethology that resulted in the use of applied animal behavior. The field of applied animal behavior was pioneered by practitioners who used knowledge of animal behavior combined with the principles of learning, behavior modification techniques, and early understanding of motivation. The field continues to evolve, and change in our knowledge and techniques is occurring rapidly. In addition, the necessity of incorporating behavioral medicine into the practice of veterinary medicine has become almost irrefutable, because studies of pet relinquishment have correlated behavioral problems with the increasing numbers of animals relinquished to animal shelters yearly.

Overview of Behavioral Medicine

Presently, practitioners of veterinary behavioral medicine in the United States generally use diagnostic categories to classify behavioral problems, although some practitioners use functional categories and some practitioners use both. Because the discipline is continually developing, there are neither accepted methods nor accepted terminology to designate behavioral disease states.

When owners have problems with their pet, it becomes necessary to determine whether the pet’s behavior is normal for that species, normal but problematic for the owner, or abnormal for the species. At times, the distinction between normal and abnormal behavior may not be clear. Generally, behavioral problems have owner-driven and pet-driven factors. Contrary to popular opinion, owners of pets with behavioral problems may not be first-time pet owners. Because of current demographics (more urban dwellers with less exposure to farm and countryside environments), many people are unfamiliar with normal animal behavior and often ascribe human emotions and motivations to their pet’s behavior. Often, the problem is partially attributable to a misunderstanding of species-typical behaviors, on both sides. A difference in species-typical communication patterns, methods, and interpretations also leads to problem encounters between owners and their pets. Owners often seek help because they can no longer live comfortably with their pet and may even be in danger because of the problem behavior. Regrettably, problem behaviors in the United States account for large numbers of animals being surrendered to humane shelters for subsequent euthanasia.

In dogs, the most common behavioral problems (broad diagnostic categories and subcategories) include:

- Aggression: Dominance (status)-related, possessive, protective and territorial, predatory, fear-induced, pain-induced, parental, redirected, play, intermale, interfemale, and pathophysiologic (medical) in origin.
- Anxiety disorders: Separation anxiety, generalized anxiety, fears, phobias (noise, thunderstorm, etc).
- Destructive behaviors.
- Housesoiling and marking.
- Unruly and disobedient behaviors.
- Compulsive disorders: Acral lick dermatitis, flank sucking, pacing, circling, incessant or rhythmic barking, fly snapping or chasing unseen objects, freezing and staring, polydypsia, sucking, licking or chewing on objects (or owners), tonguing or licking the air, and other forms of self mutilation.
- Cognitive dysfunction syndrome.

In referral behavioral practices, the most common problems seen in dogs are aggression, housesoiling, and unruly behaviors. Separation anxiety is probably the most common anxiety state, and underlying anxieties are often seen in conjunction with aggression-related problems and compulsive disorders.

In cats, the most common behavioral problems (broad diagnostic categories and subcategories) include:

- Feline inappropriate elimination: Substrate preferences, location aversions, litter aversions, and location preferences.
- Marking behaviors: Marking with urine or claws.
- Destructive behaviors.
- Aggression: Intraspecies, social or dominance, fear or defensive, territorial, play, intolerance of petting, sexual, redirected.
- Compulsive disorders: Excessive sucking and chewing, hunting and pouncing at unseen prey, running and chasing, paw shaking, freezing, excessive vocalization, self-directed aggression such as tail chasing or foot chewing, overgrooming or barbering of hair.

In referral practices, most common behavioral problems seen in cats are associated with housesoiling and include spraying, aggression, and compulsive disorders. Diagnosis of behavioral disorders is usually based on results of complete and comprehensive behavioral history, physical examination, and observation of the animal, as well as any indicated laboratory or imaging studies. Behavioral historical information includes pet-owner interactions, early pet history, and features of the current behavioral problem(s). Every attempt is made to obtain information in a nonjudgmental way and obtain a good description of the behavioral sequences involved in the problem behavior. Emphasis
is placed on what the animal did, how the animal looked, how the animal responded to intervention, and the situational context.

Treatment modalities often used include:

- **Behavior modification:** Classical conditioning, operant conditioning, extinction, habituation, counterconditioning, desensitization, positive reinforcement, negative reinforcement, punishment, retraining, shaping.

- **Environmental manipulations:** Gates, fencing, removal of stimulus, changing ability to encounter the stimulus, removing the pet from the home.

- **Behavior products:** Headcollars, motion sensors, remote punishment devices, muzzles, leashes.

- **Pharmacologic treatments:** Tricyclic antidepressants, selective serotonin reuptake inhibitors, tranquilizers, anxiolytic drugs, mood stabilizers, monoamine oxidase inhibitors, anticonvulsants, antihistamines, progestins, stimulants.

Owner education plays a major role in the treatment of any behavioral problem in companion animals. Often treatment revolves around changing the context of the problem behavior, avoiding the problem behavior, teaching the animal and owner new methods and types of responses in the problem situations, and changing the pet-owner relationship. Explanations of why pets do certain things and what their behavior means within the context of their behavioral repertoire is extremely helpful for pet owners. This enables them to understand the behavior and see it in less anthropomorphic terms. For many pet owners, this allows them to proceed with treatment and subsequent improvement in problem behaviors.

Pharmacologic intervention is most helpful in anxiety disorders (including separation anxiety), compulsive disorders, some animals with aggression, marking behaviors, and cognitive dysfunction syndrome in dogs. Pheromones are also useful in marking behaviors in cats and sometimes in feline aggression.

**Differences Between Behavioral Medicine and Internal Medicine Regarding Diagnosis**

**Obtaining a history**—Behavioral medicine relies heavily on verbal behavioral histories and, for certain cases, video and audio tapings. Taking a behavioral history can be time consuming and may require 1 to 2 hours in difficult or complex cases. Careful, in-depth questioning is necessary to obtain the proper information. Owners usually are unaware of which pieces of information are pertinent to diagnosis. The skill of the interviewing practitioner often determines how much information is obtained and how easily it is obtained. In contrast, the practice of internal medicine relies to some degree on information supplied by the owner, but the diagnostic skills of the veterinary practitioner come into play more directly through physical examination, laboratory testing, and imaging studies; in some instances, the owner’s contribution to the final diagnosis may be negligible. In behavioral medicine, there are few if any confirmatory tests available to corroborate diagnosis. Additionally, medical and behavioral disease states may coexist, further confounding diagnosis and treatment.

**Differential diagnosis**—Differential diagnosis in behavioral medicine may be based solely on subtle signs that include body posture, facial expression, and context for the behavior, as well as genetic history and early life history. The owner usually provides this information but often does not have access to the entire early life history; may have poor observational skills, or may not have been present when the problem behavior occurred. Although it is often possible to classify the problem behavior into broad symptomatic categories (eg, aggression, housesoiling, destruction), establishing a definitive diagnosis that permits formulation of an accurate treatment plan may be difficult for some practitioners. In contrast, the practitioner of internal medicine can often isolate the body system responsible for the clinical signs and target the appropriate tests to finalize a diagnosis.

**Confirmation of diagnosis**—Differences between behavioral and internal medicine regarding confirmation of diagnosis may be profound. Confirmation of medical problems is often obtained through diagnostic testing; for example, to determine whether a dog is diabetic, determination of blood and urine glucose concentrations is helpful. In contrast, determination of a specific type of aggression requires careful evaluation of the pet’s actions, body postures, facial expressions, pupillary size, movement, target, context of the aggression, responses to intervention, and much more. Once this information has been obtained, subtle changes in pet actions or body language may require an alternate diagnosis or even multiple diagnoses and treatment plans. Another example of how confirmation of diagnosis may be difficult is cognitive dysfunction syndrome in older dogs; although primarily manifested by behavioral signs, this is a medical problem. However, cognitive dysfunction syndrome is often a diagnosis of exclusion and confirmation can only be obtained by postmortem examination of brain sections to identify amyloid plaque. In addition, the practitioner of internal medicine may identify an underlying pathophysiologic abnormality on the basis of the body system responsible for the clinical signs. In many behavioral disorders, the underlying pathophysiologic abnormalities have not been established or agreed upon, which confounds the diagnosis.

**Crisis intervention**—Owners of pets with behavioral problems often don’t seek intervention until the problem becomes critical, and the risk of pet relinquishment is high. In addition, behavioral problems may wax and wane, thus lulling owners into believing the problem will not reoccur. When problems do return, owners may be quite distressed and desire an immediate cure. This expectation may be unrealistic, difficult to provide, and pressure the veterinarian to make an answer available immediately. Some owners do not seek intervention for behavioral problems, because they are unaware that treatment is available. In addition, although veterinarians often train clients to be better at seeking medical help at early signs of disease, they do not train clients similarly for behavioral problems, possibly because the veterinary staff may be unaware that behavioral problems exist.
**Differences Between Behavioral and Internal Medicine Treatments**

Seeing the behavioral problem as a disease—Many veterinarians and owners confronted with a problem behavior in a companion animal see only a “bad” dog or cat. They may label the behavior a training or dominance problem, suggest that the pet is spoiled, or offer some other inappropriate explanation. The prevailing opinion may be that if the animal was better trained or if the owner was a better owner the problem would not exist. A fact that often confounds the situation is that the animal’s behavior may be typical for that species (growling, urination marking, scratching, or barking) but create problems for the owner and require intervention and treatment. However, in other situations, the animal may not be behaviorally healthy; early influences, genetics, and environment may all contribute to problem behavior. Labeling all behavior problems as training problems and not evaluating underlying diseases such as fears and anxieties may preclude effective treatment. It may also be difficult for owners to accept that their pets are behaviorally unhealthy, rather than simply bad. In contrast, pets with internal medical problems may have clinical signs (eg, diarrhea and vomiting) that the owner considers abnormal and possibly indicative of an underlying disease state. Veterinarians should realize that health of companion animals comprises medical and behavioral health, both of which contribute to the overall welfare of the animal. Any behavior that affects the owner-pet relationship and may result in relinquishment probably should be considered a disease state, including common problems such as jumping, barking, and digging, as well as serious problems such as aggression and inappropriate elimination.

Veterinary training in treatment modalities—Veterinarians receive substantial information in veterinary school regarding methods of treatment for various diseases. They learn how to use anesthetics, pain medications, antimicrobials, chemotherapeutics, and nutriceuticals. The techniques used in the treatment of various behavioral disorders are not included in most veterinary curricula and, therefore, are unfamiliar to most veterinarians. Furthermore, many veterinary schools do not even provide information regarding normal behavior for various species, which further hampers identification of problem behaviors. Although textbooks are now available, as well as continuing education seminars and other learning tools, many veterinarians have difficulty understanding and using the treatment modalities necessary for behavioral medicine.

Treatments—In the practice of internal medicine, treatment is usually centered around pharmaceuticals that will alter the disease state. In order to prescribe the correct medication, the veterinarian needs to make the diagnosis (usually by use of confirmatory testing) and dispense the appropriate medication. In behavioral medicine, the veterinarian must not only make the diagnosis, which can be difficult, but also be able to design, explain, and demonstrate a treatment plan to the owner. Usually it is not as simple as telling the owner to give a medication. Typically, a good understanding of learning and behavior modification techniques and how to combine various techniques to alter the problem behavior is required. Client handouts, videos, books, and products are often necessary to assist owners in understanding and implementing treatment plans.

Family involvement—The family unit is usually intimately involved in the development and continuance of the problem behavior. Therefore, in behavioral medicine, history-taking and treatment techniques must take family dynamics into account.25 In the practice of internal medicine, this is usually not necessary. Owners are seldom required to change interactions and relationships with their pets in order to facilitate treatment of medical problems, whereas this is usually essential in behavioral medicine (eg, separation anxiety, human-directed aggression, compulsive disorders).

Time involved in designing treatment plans—For many practitioners, the time spent in diagnostic procedures for a case involving internal medicine, although sometimes substantial, is a service for which they charge. The time spent creating the treatment plan may be short. In behavioral medicine, the time involved in diagnostic procedures is substantial, and the time involved in creating a treatment plan is also substantial; this may be prohibitive for many veterinarians.

Mixing types of behavioral intervention—Treatment of behavioral disorders may require mixing 2 types of intervention. First, there is always a need for behavior modification and environmental changes to facilitate behavioral change. Second, with the advent of FDA-approved drugs for separation anxiety (clomipramine hydrochloride) and cognitive dysfunction syndrome (selegiline hydrochloride), there are also pharmacologic interventions that are quite useful. However, unlike internal medicine, in which drug treatment alone is often curative, in behavioral medicine, drug treatment alone is rarely curative.26-28 This situation taxes the patience and understanding of veterinarians and owners. Because many veterinarians and their clients are accustomed to the finding that medication changes or cures medical problems, they are often unwilling to use additional treatment in the form of behavior modification, and treatment fails. In addition, veterinarians often prescribe psychotropic medications without an appropriate diagnosis and find that the medication does not alter the unwanted behavior; as a result, the veterinarian and the client become discouraged.

Rate of treatment response—in the practice of internal medicine, it is not uncommon for a therapeutic response to develop quickly (within 1 to 2 weeks) for many medical problems. Conversely, lack of response may also be evident soon after treatment has been initiated and alternate treatments may be attempted. In the practice of behavioral medicine, response to treatment may not be evident for prolonged periods (eg, up to 6 weeks for separation anxiety). In addition, the response may not be cessation of the problem behavior, but instead, a decrease in frequency or change in clinical signs (eg, cognitive dysfunction, compulsive disorders). Because intervention is usually sought later for behavioral diseases, compared with medical diseases, the disease is usually established at
the time of diagnosis, and if not counseled properly, owners often become frustrated before a positive response to treatment is seen. This may result in termination of appropriate treatments.

Owner responsibility—In internal medicine, the owner is often responsible for administering medication. In some instances this can be cumbersome and time consuming, but is usually manageable. In behavioral medicine, the owner is responsible for implementing the treatment plan, but the time commitment and involvement is generally much greater. For some behavioral problems, such as aggression, there is also a degree of risk involved in treatment. Behavioral treatment plans may be difficult, time consuming, and response to treatment may be slow; therefore, owner compliance, although critical, may be difficult to obtain.

Response-guided treatment—In behavioral medicine, it is often necessary to use a response to treatment to aid in determination of the next step. Treatment protocols may begin with evaluation of problem behaviors and start owners with simple plans that give them direction and control. As a behavioral response is seen, new treatment modalities are added or substituted, which requires constant monitoring of the problem behavior. This approach is also often used for dermatologic problems, which are also often chronic.

Differences Between Behavioral and Internal Medicine Regarding Prognosis

Cure versus control—In internal medicine, many chronic diseases respond to treatment but are not completely cured; endocrine disorders are common examples. However, many other diseases do respond to treatment, are cured, and do not return. In behavioral medicine, many diseases are chronic and may be controlled but are not cured (eg, aggression); this can be frustrating for owners. The difficulty or danger in managing some behavioral diseases may cause owners to relinquish their pets.

Lack of data—In behavioral medicine, there is a paucity of available data regarding response rates to various treatment interventions. Few double-blinded placebo-controlled studies exist for either drug treatments or behavior modification techniques, making it difficult to establish a prognosis. Often, prognosis is based on anecdotal evidence and practitioner experience. In internal medicine, because treatment is often based on pharmaceuticals that have undergone extensive testing and review, prognosis is easier to establish.

Owner expectation—Because of previous experience with veterinary treatment, owner expectation is that the pet will be cured of its problem behavior. This expectation, coupled with misunderstanding of what behavioral medicine entails, may cause owner dissatisfaction regarding the amount of time, commitment, and effort expended. Although this situation also occurs in internal medicine, it is more common in behavioral medicine.

Veterinarian expectation—Veterinarians are trained to diagnose, treat, and cure internal medical problems. Insurmountable obstacles to treatment are rarely encountered on a daily basis. Veterinarians have also been trained to use established, step-by-step procedures that simplify diagnosis, treatment, and prognosis, and they have access to many diagnostic tools. They may not feel comfortable with response-guided treatment or the need for prolonged client coaching and feedback. Step-by-step procedures, diagnostic tools, and prognostic tools have not been established in most areas of behavioral medicine and may increase veterinarians’ reluctance to tackle behavioral problems.

Differences Between Behavioral Medicine and Internal Medicine Regarding Follow-up

The need for continued owner feedback—If treatment is response-guided, frequent owner contact is needed to ensure that treatment is progressing appropriately. This requires the time and expertise of a veterinarian, yet many veterinarians do not have enough time for telephoned follow-up for behavioral problems.

Continued client training and clinic support—Because behavioral plans can be difficult to implement and treatment responses slow, owners may need coaching and encouragement to continue with planned treatments. Journals, charts, and good telephone follow-up are often needed to alert owners to subtle behavioral changes that signal progress in resolution of the behavioral problem. In contrast, in internal medicine it is often possible to use laboratory testing to determine treatment responses.

Where Do We Go From Here?

As mentioned, veterinary behavioral medicine, although new, is also evolving rapidly. The challenges to be faced are great but not insurmountable. Veterinarians have the basic tools to begin implementing behavioral medicine in their practices. At the same time, they can make use of a referral system for more difficult and complex cases. There are some problems that still need to be overcome.

Accreditation—In the United States, board certification (the American College of Veterinary Behaviorists) is available, as are residency programs at several veterinary colleges. Applied Animal Behaviorists are certified by the Animal Behavior Society, which awards this designation to persons with advanced degrees in psychology, biology, or animal behavior, as well as some veterinarians. Nevertheless, in many regions it may be difficult to find a qualified behavioral specialist. Some veterinary colleges provide telephone consultations to help veterinarians treat behavioral diseases.

Training for veterinarians—Presently, there are not enough training opportunities for veterinary behaviorists, although there are some training programs in the United States and Europe and they are increasing in number. The best locations for training programs, logically, are in veterinary schools. Although some schools have veterinary behaviorists among their faculty, others do not. A limited number of veterinary school curricula include courses in normal behavior, and few include courses in the diagnosis and treatment of behavioral disorders. This situation needs to be rectified.
addition, practicing veterinarians need good training materials that help explain the principles and techniques needed to successfully practice behavioral medicine.

Using current skills—Often, the first sign of disease is a change in behavior (eg, limping, polydypsia, polyuria); thus, veterinarians already use behavior as a diagnostic tool in certain cases that fall under the category of normal medicine. Veterinary training focuses on diagnosis and treatment of disease. The basic framework to diagnose and treat behavioral problems is present but needs to be expanded in various ways that allow veterinarians to add behavioral medicine to their practices; these include:

- Asking behavioral questions at all veterinary visits.
- Promoting early intervention and prevention of behavioral problems (puppy classes, information on normal behavior, referrals to humane dog training, appropriate litter box maintenance, etc).
- When behavioral issues are raised by clients, seeing them as opportunities for intervention.
- Designating a staff member as a behavioral coordinator.
- Locating and obtaining handouts, brochures, books, videos, and behavioral products to aid in getting good behavioral information to clients.
- Obtaining follow-up on behavioral cases.
- Finding referral sources that will handle difficult and complex cases.
- Attending continuing education programs on behavior and behavioral diseases.

With early intervention in behavioral issues using questions posed to owners at veterinary visits, veterinarians can be helpful to pet owners. Veterinarians may begin by emphasizing good puppy training and behavioral health, early intervention for adolescent dogs, and senior care. Asking about litter box use and social behaviors will help owners identify problems earlier in their cats.

Finally, veterinarians also bring a strong understanding and belief in the human-animal bond and their unique perspective on client-pet interaction to the practice of behavioral medicine; this is a strength that they may build upon. By realizing how important the human-animal bond is, that owners want to keep their pets, and that no one wants a problem pet, veterinarians who use behavioral medicine will be able to provide better health care for their patients.

References