

Animal Behavior Case of the Month

This feature is sponsored by the American College of Veterinary Behaviorists. Readers of the *JAVMA* are invited to submit reports, which should include a brief description of a behavioral problem, the evaluation and treatment, and a succinct discussion of the case.

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Statement of the Problem

A dog was examined because of house soiling, urination during greetings, and generally fearful behavior.

Signalment

The dog was an 8-month-old spayed female mixed-breed dog that weighed 16 kg (35 lb).

History

The owners of the dog were a couple who did not have any previous experience owning a dog but did own cats that lived strictly indoors. The dog was a stray that the owners adopted from a shelter and had been spayed the day before adoption. After 3 weeks, the dog was still not moving around the home and stayed huddled in 1 of 3 places: on a sofa that was not located by any windows, in an open crate in the garage, or under a bedside table. When the dog did move, it appeared afraid, crouching and crawling. Initially the dog made no attempt to follow the owners but later would follow to the closest of its 3 preferred spots. The dog trembled and moved away when the owners reached for or tried to place a collar or leash on it but did not cry or whimper and did not tremble all the time. The dog did not appear to be afraid of the cats. When visitors arrived, the dog ran upstairs and hid. The dog was reluctant to go outside and, if left alone, did not explore but curled into a ball against the wall, even in the owners' relatively quiet fenced backyard. In the front yard, the dog kept a crouched, fearful body posture and tried to flee when a vehicle or person passed by. No other specific stimuli were identified. The dog was interested in other dogs and would stand up, untuck her tail, and approach with what seemed to be normal strength and gait.

Urine and feces were deposited on a variety of surfaces and in a variety of locations in the house and garage, regardless of whether the owners were or were not home; the dog did not eliminate outside. Feces were typically deposited twice daily and were normal in appearance. Urine was deposited 3 or 4 times a day and was normal in color and volume. The dog postured normally when voiding and defecating and did not appear fearful. No urination occurred while the dog

rested or slept in 1 of its 3 preferred spots, and the dog was observed briefly leaving a spot to eliminate.

The dog was left alone in the house 6 to 8 hours a day. When either owner returned, the dog would look and slightly wag its tail. When 1 of the owners approached, the dog would roll on its side, present its inguinal area, and urinate; its ears were flattened and lips pulled back. This occurred on the sofa where the dog mainly stayed. A mild verbal reprimand given the first time resulted in the dog running upstairs; no further attempts at punishment had been made. The owners were unaware of how their body language could be interpreted as threatening. Dry food was available ad libitum; food and water intake were normal. No reactivity to household noises or aggressive behavior was observed.

Physical Examination Findings and Laboratory Results

The dog had been examined by the referring veterinarian the day before the behavior consultation. Results of a physical examination were unremarkable, as were results of a urinalysis, other than a slightly high RBC count attributed to collection of the urine by means of cystocentesis. A CBC and serum biochemical testing were declined for financial reasons. The dog appeared fearful both outdoors and indoors and on a variety of surfaces, including pavement, gravel, tile, and carpet, and alternately crawled and tried to escape on the way to the examination room. No additional people or dogs were present. The dog cowered with its face turned toward the wall for 2 hours and did not respond to calls of its owners or outside noises. In the last hour, while the owners were seated on the ground and luring with food, the dog did approach. Any movement by the owners, however, caused the dog to return to the wall, and the dog completely avoided eye contact. No abnormalities were noticed, although auscultation and palpation were not repeated because of the dog's fear. Orientation to a clicker noise held out of view and visual tracking of a tossed object were normal.

Diagnosis

The dog's trembling, crouched body posture and frequent visual scanning were attributed to fearful behavior. Signs also included avoidance, attempted escape, and withdrawal or lack of exploratory behavior in a wide variety of circumstances (eg, with people, when hearing cars, when outside or inside, and when shown the leash). Differential diagnoses included pain, neuromuscular weakness, other systemic illnesses, and attention-seeking behavior. Signs of pain were not detected during physical examination, and no vocalization, guarded movement, or orientation to a body part was observed. The dog's spay incision had healed. No weakness was seen when the dog attempted to escape or during a sustained crawling gait. The dog did not

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tremble at all times at home. Results of the physical examination and urinalysis and the dog's clinical signs did not provide any evidence of systemic illness, although a CBC, serum biochemical profile (including determination of electrolyte concentrations), thyroid function testing, and, if indicated, testing to rule out endocrine disturbances known to cause weakness or trembling¹ would have been helpful. An attention-seeking motivation for trembling did not explain the coherent display of signs typically associated with fearful arousal, the display of these signs when the dog was not with people, and the dog's repeated attempts at escape.

The house soiling was diagnosed as inappropriate elimination. It was considered to primarily be a consequence of fear creating a lack of opportunity to eliminate outdoors (the dog was too afraid to eliminate when taken outside) but also was considered to be a lack of housetraining resulting from owner inexperience. The dog's previous housetraining was unknown, and the time the dog spent in the shelter may have exacerbated the problem by limiting access to previously used substrates. Differential diagnoses included fear-inducing situations, separation anxiety, various underlying medical conditions, and a location or surface preference. Fear-inducing situations were unlikely, as the dog did not have any signs of fear while urinating and defecating in the house in the owners' presence. Separation anxiety was unlikely, as elimination occurred regardless of whether the owners were or were not present, although videotaping the dog while the owners were gone might have revealed any fear-eliciting stimuli or anxiety associated with the owners' absence. Medical conditions that could account for both urination and defecation were considered unlikely.² Character, frequency, and quantity of feces were normal. There was no polydipsia, results of a urinalysis were normal (including specific gravity, indicating normal concentrating ability), no dribbling was noted, and there was appropriate posture and volume when voiding. A CBC and serum biochemical testing would again have been useful to further rule out medical causes. There was no evidence for a seizure disorder in that no seizure activity had been observed, and there was no coat soiling or physical disturbance of the urine and feces. Cognitive decline or other cortical disease was not considered in view of the dog's age and normal mentation. A location or substrate preference was not evident from the wide variety of locations soiled.

Urination on the sofa was diagnosed as submissive urination. The dog consistently rolled on its side, flattened its ears, and exposed its inguinal area prior to urinating, and the dog urinated on the sofa only in the context of greeting and when awake. The dog was usually on the sofa when 1 or both owners were gone, so greeting occurred there. Differential diagnoses included excitement urination, location or substrate preference, urinary tract infection, incontinence, and other underlying medical causes. Excitement urination was considered unlikely on the basis of the dog's submissive body postures and lack of exuberant behavior. The unlikely contribution of a location or substrate preference, urinary tract infection, incontinence, or other underlying medical cause was discussed previously.

Treatment

Treatment for fear included limiting exposure to all identified fear-eliciting stimuli and gradually exposing the dog to them in a controlled way. In view of the wide range of situations in which the dog was fearful, the principles of **desensitization and counterconditioning (DS-CC)** were explained. Briefly, these include establishing a gradient for the stimulus and providing it in an increasing level but stopping at a level below which a fearful response is elicited. Food treats are paired with calm, relaxed behavior in the presence of the stimulus.

The owners were instructed to identify specific fear-eliciting stimuli, such as traffic noise and strangers, and apply the principles of DS-CC. For fear associated with putting on the leash, the owners were initially instructed to leave a collar on with a leash attached to avoid having to place a leash and collar on. During DS-CC sessions, the owners would reproduce the steps involved in applying a collar and leash. First, they would reach for the dog's collar in as unthreatening a way as possible, pairing this with treats when the dog was calm and relaxed. Eventually they would progress to touching the dog, buckling the collar, and, finally, putting on the leash. For fear of the outside, the owners were instructed to avoid forcing the dog with the leash and collar but rather to allow the dog to follow them into the fenced yard. Feeding the dog progressively closer to the open outside door and leaving some windows open to expose the dog to outside sounds were suggested. A simple behavior (a sit followed by a food reward) was to serve as a positive interaction with people and as a tool during DS-CC sessions. A headcollar^a to be slowly introduced was recommended for safety during escape attempts and DS-CC sessions. Adoption of a second dog was not recommended initially, but a home visit was scheduled to assess the dog's progress and its reaction to another dog.

Treatment for inappropriate elimination included confining the dog to the garage when the owners were not home and leaving open access to the outdoor elimination area when the owners were home. The owners were instructed to go outside frequently, allowing the dog to follow them, and to act neutrally, except for providing gentle praise and a food reward for eliminating. Cleaning to reduce odor^b and meal feeding to increase predictability were also recommended.

Treatment for submissive urination included greeting the dog in the garage, avoiding reaching or leaning towards the dog, and allowing the dog to approach first. Having the dog sit for a food reward when greeting also reinforced an alternative, nonsubmissive deferential behavior.³ For all problems, the owners were instructed to avoid all physical and verbal punishment and inadvertently reinforcing unwanted behaviors by attempting to reassure the dog.

Follow-up

The owners returned 2 days later to practice the handling techniques on a less fearful dog. At this time, they reported that maintaining nonthreatening body postures and allowing the dog frequent opportunities to follow them outside were helping, and that the dog had

urinated and defecated outside. During a home visit 3 weeks later, the owners reported that submissive urination was no longer a problem because of avoidance and that the inappropriate elimination was improving, but the dog was still fearful when it saw visitors or its leash or when taken outside. The principles of DS-CC were reviewed. The dog followed a test dog outside and sat and took treats when the test dog did (otherwise it would not have). Problems in adopting another dog, as well as the difficulties involved in obtaining a confident, friendly, adult dog without major behavior problems, were discussed. Sertraline (1.5 mg/kg [0.7 mg/lb], PO, q 24 h) was prescribed to augment the behavior modification by reducing the dog's reactivity. Medication has been recommended when fear-eliciting stimuli cannot be avoided,⁴ and sertraline has been used in the treatment of anxiety conditions in dogs⁵ and people.⁶ Sertraline was also chosen because of its reportedly low incidence of adverse effects, a low likelihood of disinhibiting aggression, and a low cost for a mid-sized dog, compared with other selective serotonin reuptake inhibitors. Extralabel use and potential adverse effects were discussed. A CBC and serum biochemical testing to ensure adequate hepatic and renal function were again recommended but declined. A second dog was adopted more quickly than anticipated, 1 week after treatment with sertraline was begun, and a rapid improvement in the first dog's demeanor was noticed. At the owner's request, the medication was continued for 3 months, and the dosage was then slowly tapered over a 3-week period. The contribution of the drug, compared with social facilitation or local enhancement⁷ from the second dog, could not be determined. The lack of observable effects of the medication during the first week of treatment and the lack of any apparent change

in behavior during and after the withdrawal of the medication, along with the fact that a full response in people requires 3 to 5 weeks, suggests that drug effects were likely less important.⁵ At 5 months, the dog was excited about its leash, went outside readily to walk or eliminate, moved freely inside and out, and entered the clinic without fear. The dog had urinated inside once when left alone 11 hours and had not defecated inside. The dog occasionally assumed a submissive posture when greeted but did not urinate. It was friendly toward people, and its reaction to cars was much diminished. Telephone follow-up at 9 months indicated that progress continued.

^aGentle Leader, Premier Pet Products Inc, Richmond, Va.

^bAnti-Icky-Poo, MisterMax Quality Products, Lakeside, Calif.

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