

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.

Send contributions to Dr. Katherine A. Houpt, Department of Biomedical Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY 14853-6401.

Statement of the Problem

A dog was examined because of aggression toward household members.

Signalment

The dog was a 3-year-old castrated male dog of mixed breeding (Border Collie and Siberian Husky). The dog had been castrated at 6 to 7 months of age.

History

The owners were a young couple with a daughter who was 17 days old at the time of the initial consultation. The owners had obtained the dog at 8 weeks of age from a private home through a newspaper advertisement. Both owners worked full time, and during the day, the dog was confined to the basement of the house. The owners had moved to their current residence 5 months prior to the initial consultation; before the owners had moved to their current residence, the dog was confined to a crate when left alone. At night, the dog had the run of the house. He used to sleep on an armchair, but ever since this chair had been removed, he slept on the floor. The owners took the dog on 2 half-hour walks daily. At about 9 months of age, the dog was enrolled in an obedience class. Up to then, the dog wore a head halter, but the owners switched to a choke chain after enrolling the dog in the obedience class. The dog's training included on- and off-leash work and the sit-stay and down-stay commands. The dog performed well when on leash, but his off-leash obedience was rated poor by the owners. The dog was fed a dry diet twice a day. He used to eat poorly, and thus, there was food left in his bowl most of the time. About 3 weeks prior to the initial consultation, the owners started to remove the food bowl after 30 minutes, which resulted in the dog eating more eagerly.

As a puppy, the dog would pull hard on its leash; the owners corrected this by using a head halter. From 3 to 4 months of age, the dog would start to growl at the owners when they approached the dog when he was eating. This aggression got worse over time. At that age, the puppy also growled and snapped at the owner over a beef bone. Aggression was only associat-

ed with food items, not with other possessions such as nonedible toys. During aggressive episodes, the dog would exhibit an ambivalent body language with ears and tail down and head lowered but would stare at the owner.

The owners brought the problem to the attention of the obedience instructor. The instructor advised them to set up confrontations over food items and then perform an alpha-rollover maneuver. This consisted of forcing the dog on its side on the floor, pressing one's knees against the dog's spine, holding its neck down with the elbow, and grabbing its paws with the hands and lifting them slightly off the floor. The owners were also instructed to knee the dog in the chest to correct the dog for jumping up on them.

These techniques appeared to result in an escalation of the aggression problem. In addition, the dog became very fearful of the husband, who performed the rollover maneuver. When the husband set up a confrontation, the dog would urinate, escape, and hide behind the wife. When the husband entered the room where the dog was eating, the dog would become very anxious and stop eating. When approached, the dog would growl. The dog would now also growl if he was disturbed when he was tired and lying in his favorite armchair. The dog often slept at the owners' feet, and when they moved their feet, the dog would growl.

By the time the dog was about 1.5 years old, the situation had become intolerable, and the clients contacted their veterinarian. They were advised to feed the dog by hand from the food bowl and to not leave any food or other edible items where the dog could reach them. They were also told to ignore the dog as much as possible, particularly when it demanded attention, and not to let the dog up on furniture. The owners followed these instructions. They only provided toys that were not edible (ie, no bones, rawhide toys, or pig ears). They fed the dog by hand for some time and removed the food when the dog stopped eating. They removed the dog's armchair. They stopped doing the rollover maneuver and instead punished the dog with a verbal reprimand. These measures improved the dog's behavior considerably but did not address some of the situations. The dog no longer growled at someone approaching him while he was eating, as long as the person approached from the front. The problem with the armchair was eliminated. However, the dog would still growl at the owners when he was lying near them and they moved their feet. Aggressive incidents occurred less than once a week.

When the owners had a baby daughter, they felt they could no longer tolerate the situation and requested a referral to the behavior clinic at the Ontario Veterinary College. The owners may also have requested referral to the behavior clinic, in part, out of a feeling of guilt, because they suspected that they had contributed to the problem by using the rollover maneuver and punishment.

Contributed by Andrew U. Luescher, DVM, PhD, DACVB; from the Department of Veterinary Clinical Sciences, School of Veterinary Medicine, Purdue University, West Lafayette, IN 47907-1248.

Physical Examination Findings

The dog's medical history and results of physical examination were unremarkable.

Diagnosis

A preliminary diagnosis of dominance aggression with a strong fear component was made. In view of the dog's submissive behavior in most situations and its conflicting body language (crouching with lips retracted but lunging forward) during aggressive episodes, the diagnosis was revised to conflict-related aggression. Because the problem had improved substantially in response to the treatment implemented prior to the behavioral consult, a good prognosis was given.

Aggression toward household members is a heterogeneous problem. It should not automatically be assumed that the behavior is attributable to dominance. Many dogs that are aggressive toward their owners in situations considered typical for dominance aggression (eg, over food, when disciplined, when restrained, and when petted on top of the head) frequently also show behaviors incompatible with dominance. They often act submissively or fearfully right after an attack (they seem remorseful), they act submissively or fearfully in many other situations, they often show ambivalent body language during an attack, and they often show signs of extremely high arousal during and after an attack, such as trembling. These apparently contradictory or ambivalent behaviors and the high arousal levels are probably best explained as resulting from conflict. These dogs appear uncomfortable interacting with family members, at least those family members who are threatening to them. Conflict can occur whenever the dog feels threatened or when one of its important resources is threatened. For instance, the dog may want to eat but is also afraid of the anticipated aggressive competition over food associated with an approaching human.

In other cases of aggression toward household members, it appears from the history and temperament profile that the dogs were originally fearful dogs, showing clear signs of defensive aggression, but that over time, the aggression becomes more offensive because of avoidance conditioning. The dogs learn that aggression works to get them out of situations that they perceive as threatening or fear-inducing. Although the basic motivation is still fear, these dogs may show signs of offensive aggression (standing tall and leaning forward with ears and tail up and corners of mouth forward). Unfortunately, avoidance conditioning produces very persistent behavior.

An analysis of the caseload at the Ontario Veterinary College revealed that in more than 50% of cases of aggression toward household members, aggressive episodes start when the dogs are < 1 year old and often when the dogs are young puppies.¹ Recent research^{2a} suggests that most dogs that are aggressive toward household members are more fearful and more excitable and have a different disease history, compared with dogs that are not aggressive toward household members. This is not consistent with the concept of dominance aggression.³

There were several important considerations that

led to the diagnosis of conflict-related aggression in the dog described in the present report. The dog did not have a dominant personality, and in most situations it acted submissively or fearfully. Thus, the offensive aspect of the dog's aggression was likely not a result of dominance but more likely a result of avoidance conditioning. Although fear was one of the dog's motivations, the aggression was not purely fear aggression. Dogs with fear aggression will leave a frightening situation, if possible, and only show aggression when cornered or otherwise prevented from leaving. The body language of the dog described in the present report, during an aggressive episode, appeared to be an expression of an approach-withdrawal conflict.

Treatment

Because the dog's aggression appeared to be conflict-related aggression, a treatment protocol similar to that described for treatment of conflict behavior and compulsive disorders⁴ was used. The goal was to make interactions between the dog and household members as unambiguous, predictable, and stress-free as possible so that the dog would become more confident in its interactions with household members. Furthermore, the dog was rewarded for appropriate behavior in situations in which he previously showed aggression.

To achieve this, the following recommendations were made. Casual interactions with the dog, which are always inconsistent, were to be avoided. The owners were, therefore, advised to completely ignore the dog most of the time. The owners were allowed, however, to have interactions of the command-response-reward format; all these interactions were to be initiated by the owner. Regular obedience sessions were instituted as well. Highly structured training sessions such as proposed by Overall⁵ can be extremely useful. They provide for highly consistent predictable interactions between dog and owner and help make the owner's behavior towards the dog more consistent in the long term. They also condition the dog to show acceptable behavior in the owner's presence.

Owner-applied punishment is a particularly inconsistent form of interaction, because, in practice, it is impossible to make the punishment truly contingent on an unacceptable behavior, apply the punishment every time the behavior is exhibited, apply punishment immediately following the unacceptable behavior, and apply punishment at the right intensity.⁶ Any form of positive punishment, including use of a choke chain, was therefore discouraged. The owners were informed that response-substitution (ie, rewarding the dog for an alternative behavior) could be used instead of punishment, if necessary. They were also advised that any form of confrontation should be avoided. Therefore, they were advised to avoid any situations in which the dog used to be aggressive until the dog had been desensitized to these situations.

In severe cases of conflict-related aggression, particularly if the owners are afraid of the dog or unable to ignore it, it is recommended that the dog be confined to a crate, exercise pen, or single room at all times for the initial 4 weeks of the treatment period, except during scheduled training sessions or when the dog is fed

or walked. In the present case, this recommendation was not made. In less severe cases, it is recommended that the owners place an adjustable head halter on the dog with a drag leash attached. This way, the owner can always easily gain control over the dog and diffuse a situation by picking up the leash, issuing a command, making the dog do the behavior, and reinforcing the behavior with a food treat or praise. In the present case, it was recommended that the owners place a head halter with a drag leash on the dog.

Specific recommendations were made to train the dog to tolerate the owners' presence while eating. The owners were instructed to feed the dog in a different place and use a different food bowl, preferably an old saucepan with a long handle, so that the dog would not associate feeding with past confrontations. The dog was to be tied when fed. The usual amount of food was to be measured out, but only 3 kibbles were to be placed into the food bowl (saucepan) at once. The dog was then asked to sit, and the food bowl was lowered so the dog could eat the kibbles. The dog was asked to sit again, the bowl was raised, and the procedure was repeated until all the food was consumed. The owners were instructed to take the food bowl away and leave the dog alone for 10 minutes if it showed any signs of aggression at any time during feeding and then resume feeding as before. Once the owners and dog were comfortable with this procedure, the owners were advised to gradually place more food into the bowl and to let go of the bowl's handle for increasingly longer periods. The goal was to have the owners place a third of the ration into the bowl and add more food as the dog was eating and, eventually, to place all the food into the bowl at once and add strong-smelling treats such as cheese to the bowl while the dog was eating. With this procedure, most dogs learn to accept the owners' presence while eating. However, progress has to be monitored carefully, and with some dogs, it may be unsafe to proceed to the last stage of the procedure. Owners should not try to touch the dog while it is eating; however, if desired, a desensitization procedure could be used to achieve this.

Follow-up

One month after the initial consultation, the owners reported that there had not been any more problems with aggression toward household members in any situation. The only remaining concern was that the dog startled (without showing aggression) when someone got up nearby. The owners were instructed to ignore the behavior and praise the dog when it did not startle. The dog was still only fed small amounts at a time; therefore, it was recommended that the amount of food given at once be increased. Owner compliance

was rated as excellent, except for the continued use of a choke chain. The problem was considered resolved at this time.

The owners were contacted again 10 months after the initial consultation. The dog had not shown any further aggression toward household members. In particular, the dog was never aggressive to the daughter, who was now 10.5 months old. The owners could even set the daughter on the dog's back without a problem. If the daughter played too rough with the dog, the dog simply left. However, when the daughter was quiet, the dog would elect to lie down beside her. The owners kept the daughter away from the dog while the dog ate.

There had not been any further episodes of food-related aggression toward the owners. Although the dog was still a little nervous when the male owner entered while the dog was eating, the male owner could now pick up the water dish that was right beside the food dish and even pat the dog's back while the dog was eating without triggering any aggression.

Discussion

This case represents one of the various scenarios of canine aggression toward owners. It emphasizes the need to take a detailed history that considers not only the behavior displayed by the dog at the time of the consultation but also the details of the development of the problem, specific incidents that triggered aggression, the body language of the dog, the dog's individual life history, and the disposition of the dog. This case also underscores the importance of understanding the principles of learning and how they can affect the expression of a behavior problem.

^aGuy NC. *Canine household aggression in the caseload of general veterinary practitioners in maritime Canada*. MSc thesis, Department of Anatomy and Physiology, Atlantic Veterinary College, Charlottetown, PEI, Canada, 1999.

References

1. Luescher UA. Analysis of canine behavioral caseload, in *Proceedings*. 134th Annu Conv Am Vet Med Assoc, 1997.
2. Serpell J, Jagoe JA. Early experience and the development of behavior. In: Serpell J, ed. *The domestic dog: its evolution, behaviour and interactions with people*. Cambridge, England: Cambridge University Press, 1995;79-102.
3. Voith VL, Borchelt PL. Dominance aggression in dogs. *Compend Contin Educ Pract Vet* 1986;8:36-44.
4. Hewson CJ, Luescher UA. Compulsive disorder in dogs. In: Voith VL, Borchelt PL, eds. *Readings in companion animal behavior*. Trenton, NJ: Veterinary Learning Systems, 1996;153-158.
5. Overall KL. *Clinical behavioral medicine for small animals*. St Louis, Mo: Mosby Year Book Inc, 1997.
6. Mazur JE. *Learning and behavior*. Upper Saddle River, NJ: Prentice Hall, 1998.