Animal Behavior Case of the Month

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

Send contributions to Dr. Bonnie Beaver, Department of Small Animal Medicine and Surgery, College of Veterinary Medicine, Texas A&M University, College Station, TX 77843-4474.

Statement of the Problem

A cat was referred to the behavior service because of several aggressive attacks against the owner. The attacks appeared to the owner to be unprovoked, happening when the owner interfered during an apparently stressful event.

Signalment

The cat was an 8-year-old spayed domestic shorthair.

History

The cat had been obtained at 3 months of age by an owner who lived alone. The cat was alone most of the day and followed the owner constantly when she was at home. Sometimes the owner’s boyfriend would visit and seemed to be accepted by the cat. Approximately 18 months before referral, the owner moved in with her boyfriend, leaving the cat at home alone all day. The owner eventually took the cat to live at the boyfriend’s house, which he had been sharing with his adult daughter. The cat was confined to the couple’s bedroom and master bathroom, slept with the couple at night, and got along well with the boyfriend. After several weeks, however, the cat hissed at the boyfriend when he tossed a magazine to the owner while the couple was sitting on their bed. The boyfriend hissed back at the cat, who then proceeded to stalk the boyfriend. The couple, being frightened by this display, slept downstairs on the floor for 3 nights. They continued to confine the cat to the master bedroom and bathroom until the daughter moved out; the cat was then allowed into the rest of the house when the couple was at home.

One year after the move and at 7 years of age, the cat had an ovariohysterectomy. After recovering from surgery, the cat returned to sitting in the owner’s lap in the morning while she applied her makeup, something the cat had not done since moving to this house. A month later, the boyfriend’s daughter moved back into the house. The daughter played loud rock music during the day and would go in and out the front door to smoke cigarettes as often at 5 times an hour. The cat would hiss at the daughter whenever she was near.

Two months after surgery, the cat began scratching on a newly reupholstered couch and was yelled at by the boyfriend. The owner tried to call the cat over to sit next to her, but the cat walked away. Thirty minutes later, the cat approached and hissed at the owner, who was in the kitchen cleaning the oven. When the owner spoke to the cat, the cat attacked her legs with biting and scratching. The owner was able to get away and calm the cat, which followed her upstairs to the master bedroom. She then put food down for the cat and was attacked again as she attempted to leave the bedroom and close the door. The owner had to call a mobile veterinary clinic to cage the cat and take it to a veterinary hospital.

The cat remained at the hospital for a month and was visited by the owner every other day. While there, the cat was treated with various drugs including megestrol acetate, diazepam, and phenobarbital (doses and duration of treatment unknown). Major aggressive events or obvious responses to medication during hospitalization were not observed. The cat eventually was treated at home with phenobarbital, and drug treatment was gradually discontinued.

One month after the cat returned home, the owner lightly stepped on the cat’s paw and it attacked her boots. The cat seemed nervous for the next 2 days, and was treated first with diazepam, then with phenobarbital because the cat remained awake at night. While being treated with phenobarbital, the cat acted more normal, going downstairs with the family and accepting food and petting from the boyfriend. After another month of phenobarbital treatment when the boyfriend tried to play “chase the ribbon” with the cat, the cat tried to attack him. The owner intervened and was scratched and bitten by the cat. The cat eventually calmed down.

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after being held to the floor by the owner. After this incident, the cat was kept alone in a spare bedroom and remained there until the behavioral consultation.

At referral, the problem had progressed such that the owner was frightened of the cat and was considering euthanasia. The owner had noticed that many stimuli appeared to upset the cat to the point of being uneasy or attacking a nearby person, including canned cat food having a strong odor, any type of play that involved chasing, and loud voices.

**Physical Examination Findings and Laboratory Results**
Abnormalities were not found on physical examination. The CBC, biochemical and electrolyte profile, and results of thyroid function screening were within reference limits. A urine sample could not be obtained for urinalysis. The cat was seronegative for FeLV and feline immunodeficiency virus.

**Diagnosis**
The cat's attacks were considered to be redirected aggression. By definition, redirected aggression is that which occurs when an animal redirects its emotional state toward an innocent bystander.¹ In this case, the cat appeared to be disturbed by any event that disrupted its familiar, peaceful environment. After becoming aroused by an environmental stimulus, the cat redirected its arousal as aggression toward the owner. In addition to the various types of aggression,² the list of differential diagnoses included rabies, hepaticencephalopathy, lead poisoning, psychomotor seizures, feline hyperesthesia syndrome, hyperthyroidism, and intracranial lesions. The other diagnoses were ruled out on the basis of lack of abnormal findings on physical examination and laboratory tests, as well as on the descriptions of the behavior before, during, and after the attacks. The prolonged arousal is consistent with redirected aggression, particularly in cats.

**Treatment**
Deciding whether to keep a cat that has displayed redirected aggression requires careful consideration of the risks involved. Factors to be considered include the frequency and severity of the attacks, the age and mobility of the potential victims, and the ability to accurately identify and avoid or eliminate arousing stimuli. Even when the circumstances of the aggression are well-defined and the owner is careful, there is no guarantee that incidents will not recur.³

Because of the number of different stimuli involved and the owner’s inability to control all of them, desensitizing the cat to specific arousing stimuli was not possible. Several options were presented to the owner to let her determine which alternative(s) would work, based on the home environment and her attachment to the cat.

The first option was to do nothing. This presented the greatest danger to human beings and was not acceptable as a long-term option.

The second option was confining the cat away from people unless they could be assured that it was not aggressive. One way to accomplish this would be to gradually accustom the cat to living outdoors. The owner was also reluctant to choose this option because the cat had always lived indoors. In addition, the house was located in a busy neighborhood with a large population of cats. Some cats may remain aroused for several hours after the initiating stimuli has gone, however, and this cat could still direct aggression toward people near it during this susceptible period. Similar results could be obtained by confining the cat to a single room in the home, but confinement was not considered desirable by the owner.

Finding another home for this cat was a third option. Possible suitable owners would include someone living a quiet life alone or someone who lived where the cat could be outdoors. We were concerned, however, about giving the cat to someone else, because it could show the same type of aggression toward the new owner, particularly if it remained an indoor cat.

Drug treatment, a fourth option, was not favored by the owner. In theory, the use of drugs with an antianxiety effect, including the benzodiazepines, tricyclic antidepressants, and progestins, could be tried. Even if they did work to calm the cat in most situations, their effectiveness would not be ensured in situations of high arousal or over a prolonged therapeutic course. In addition, the cat had attacked while being treated with phenobarbital, so the owner was convinced that continued drug treatment would not be useful.

The last option, euthanasia, could be chosen if other options did not work or if the owner felt that she could no longer accept living with an aggressive or potentially aggressive cat. At the conclusion of the consultation, the owner wanted to temporarily confine the cat in a room in her home while considering all the options.

**Follow-up**
The owner was not able to find someone who lived where the cat could be outdoors to take the cat, so while she tried to make a decision, she had the cat declawed and boarded at the referring veterinary hospital. Eventually, the owner developed her own variation of the second option, which fit her need to keep the cat, but provided protection against aggression. She bought a spacious cage with several carpeted shelves and placed the cage in a room where the cat could view the top of the stairs and anyone coming or going from the house. With the cat being confined in a cage, the owner could come and go and was able to spend time in the room without fear of being attacked. The owner reported that the cat seemed well-adjusted to its environment and did not actively try to escape. It had only hissed once, when the daughter knocked a pot off a shelf.

After 8 months, the cat and owner had developed daily routines, including short play sessions through the cage. When the door to the cage was accidentally...
left open, the cat was found sniffing around the hall and was returned to the cage without incident. After 9 months, the owner reported a single incident, lasting 3 days, of the cat trembling, growling, and trying to get out of the cage. Careful questioning revealed that the boyfriend had bought the cat a new toy and engaged the cat in a prolonged and active play period before the owner had returned home. The owner was careful not to touch or arouse the cat during this time and additional incidents have not been observed. The treatment selected in this case, although not conventional, provides an alternative that some clients are willing to accept to keep a pet.

References