Animal Behavior Case of the Month

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Statement of the Problem

A bird was examined because of frequent, intense vocalizations (described as screaming behavior).

Signalment

The patient was a 0.7-kg (1.5-lb) 19-year-old sexually intact female umbrella cockatoo (*Cacatua alba*).

History

The bird had been given to the owners because the previous owner could not care for it. Six months after adoption, the bird started screaming in the evening. This behavior typically started between 8 PM and 10 PM and had persisted for 2 years prior to the behavioral consultation. The owners initially ignored the behavior, but the bird would continue vocalizing for ≥ 30 minutes. The male owner gave verbal reprimands that were ignored by the bird. When the female owner walked into the room, the screaming behavior ceased. Sometimes the bird would be quiet for the rest of the evening, even when the female owner left the room. At other times, the bird continued to scream until the female owner removed it from its cage. The female owner would then bring the bird to the living room, where the bird remained quiet until placed back in the cage. The screaming behavior did not seem to be affected by seasons and occurred throughout the year.

The bird was kept in a cage (1.2 × 1 × 1.6 m) in the middle of a spare bedroom. Various textured perches and toys were provided. The bottom of the cage was lined with newspapers. No hiding place had been provided. The owners spent 10 to 12 hours away from the home 5 to 6 days each week. The female owner spent 30 minutes each evening interacting with the bird. The only time the bird left the cage was when the owners interacted with it. The owners did not allow the bird outside the home because the bird did not stay on a perch. The bird was exposed to 12 to 14 hours of light each day. During the winter, the owners provided full-spectrum lighting for the patient. During the summer, it was exposed to a natural photoperiod (with sunlight through a large window). A water bowl was provided for bathing, and the owners occasionally misted the bird with water. A pelleted diet was provided and was supplemented with fresh fruits and vegetables every other day.

The owners lived in a 1,000–square foot house. Additional animals in the household included 5 cats, 3 dogs, and 4 turtles. The bird never interacted with the male owner. The owners did not smoke or use aerosol products. One of the dogs slept at night in a crate located underneath the bird cage. The cats also spent a substantial amount of time playing and exploring underneath the bird cage.

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Physical Examination Findings and Laboratory Results

A medical examination and clinicopathologic testing were performed by one of the owners, who was an exotic animal veterinarian. Results of plasma biochemical analysis, a CBC, cytologic examination of a choanal swab sample, and cytologic and parasitological analysis of a fecal sample were unremarkable; values for all variables were within reference ranges, and no parasites were detected. Radiographic evaluation did not reveal evidence of injury or trauma. Results of a physical examination were unremarkable.

Diagnosis

Differential diagnoses for the frequent, intense vocalization or screaming behavior included fear-induced behavior (alarm call), seasonally induced mating behavior, contact calling, boredom or lack of stimulation, and attention-seeking behavior. In response to a perceived threat, parrots commonly emit alarm calls. The alarm call is a fear response to the presence of predators (including dogs and cats) or an object in the room that could be perceived as a threat.[1] This was not a likely diagnosis because the behavior persisted when cats or dogs were not present in the room with the patient. The owners could not identify any objects in the room that appeared to distress the bird. An alarm call could have been induced by the owners if the bird was fearful of them. However, the bird lowered its head for the female owner to stroke and seemed to seek attention from that owner.

The owner administered leuprolide acetate (200 µg/kg [91 µg/kg], IM, once every 4 weeks, for 2 treatments) to rule out a hormonal cause of the behavior problem. Leuprolide acetate is a gonadotropin-releasing hormone agonist that provides negative feedback for pituitary gland gonadotropin receptors.[2] Exposure to increasing amounts of daylight triggers mating behavior in various species of birds. Seasonally induced changes in circulating hormone concentrations can increase vocalization.[3] The patient's screaming behavior did not decrease after treatment with leuprolide acetate; however, some species of birds may not respond to this treatment.[4] The owner declined to pursue additional diagnostic tests, such as endoscopy for evaluation of gonad size or analysis of circulating hormone concentrations.[5] Multiple factors may induce mating behavior in birds, such as a prolonged photoperiod or abundant food resources.[3,6] The bird of the present report had screaming behavior during the entire year. Therefore, hormonal causes were not considered a likely contributing factor to the behavior problem.

Contact calling is a normal behavior in psittacines. Psittacines live in large flocks that separate into smaller flocks for foraging. Contact calls are used to determine

the location of flock members and strengthen the bonds among such birds. In the wild, contact calling can last 15 to 20 minutes.[6] However, incessant screaming is behaviorally abnormal. On the basis of the behavioral and medical history, the most likely diagnosis was attention-seeking behavior. The screaming behavior could initially have been a normal contact calling activity; the owners initially gave a vocal response to that behavior. However, when the bird continued to vocalize, the female owner removed it from the cage and interacted with it, thereby providing positive reinforcement of the behavior.

Treatment

The treatment plan included behavioral and environmental management. Recommendations were made regarding environmental stimuli that could contribute to the screaming behavior. The bird's daily light exposure was limited to 8 to 12 hours. The owners did not have another room in the house in which to place the cage at night. Therefore, the bird cage was covered, all the lights in the room were turned off, and the door to the room was closed at night. The cage was placed against a wall and a hide was offered to provide privacy and security for the bird.[6,7] Additional recommendations included relocation of the dog crate that was kept beneath the cage and restriction of access of the dogs and cats to the bird's room at night.

In the wild, parrots naturally have periods of time during which they engage in certain activities, such as vocalization, foraging, and social interactions. The owners were instructed to maintain a set schedule each day to provide consistency and predictability for the bird. Command training was recommended, such as teaching the bird to step up and stay on a perch. The training exercises were performed for 5 to 10 minutes each day. These commands were used to redirect inappropriate behaviors. This also provided an opportunity for the bird to come out of the cage for exercise and interaction with the owners.[7] The owners rewarded the bird with praise or treats when it engaged in acceptable vocalizations or played with toys on its own.[8] The bird was also taught a comfort cue, which was a particular song or tune. When the bird appeared to be relaxed or engaged in a desirable activity, the owners used the comfort cue. The comfort cue had a calming effect and was used to induce relaxation in the bird.

The use of interactive toys was recommended to provide the bird with mental stimulation.[9] Parrots may have preferences for specific toys.[10] Therefore, a variety of toys that differed in size, shape, and materials was offered, and availability was rotated regularly. Parrots in the wild spend several hours each day foraging for food.[11] Food and foraging toys were distributed throughout the patient's cage to encourage the bird to look for food; this was intended to provide an activity period similar to that used by noncaptive birds.

The screaming behavior could be stopped by having the owner ignore the bird when it engaged in this activity.[1,8] The female owner began to greet the bird when she returned home and to provide a foraging toy or engage the bird in a training session before the screaming behavior started.[1,12] If the bird vocalized once, the owner waited for a quiet moment before responding, in case the bird was performing a contact call.[6] After subsequent calls, the owner waited for longer periods before responding. If the screaming behavior became persistent, the owner covered the bird cage.[1,8] A bridging stimulus (eg, a particular word, phrase, or song) was used when the owner entered the room to cover the cage and provide the bird with a brief time-out. The bridging stimulus was used so that the owner's presence in the room did not reinforce the undesirable behavior and to provide a cue to help the bird anticipate covering of the cage.

Follow-up

At the time of follow-up behavioral consultation 1 month after the initial visit, the bird's screaming behavior was reported to persist for shorter periods of time. The bird spent more time playing with the new interactive toys. The dog crate had been removed from the bird's room, and the bird cage had been placed against a wall. A predictable daily schedule of light exposure and activity was maintained for the bird. At night, the cage was covered.

Two months after the initial behavioral consultation, the screaming behavior had decreased in frequency, occurring only 2 to 3 times each week. The bird was responding to the comfort cue with calm behaviors. The owners were able to distract and redirect the bird when its behavior was inappropriate.

One year after the initial behavioral consultation, the owner reported that the bird's screaming behavior had substantially improved, only occurring rarely. The bird spent more time playing with its toys than it had at the times of earlier consultations. The bird's daily training exercises were being continued.

References

1. Bergman L, Reinisch US. Parrot vocalization. In: Luescher AU, ed. *Manual of parrot behavior.* Ames, Iowa: Blackwell Publishing, 2006;219–223.
2. Martin KM. Psittacine behavioral pharmacotherapy. In: Luescher AU, ed. *Manual of parrot behavior*. Ames, Iowa: Blackwell Publishing, 2006;267–279.
3. Van Sant F. Problem sexual behaviors of companion parrots. In: Luescher AU. *Manual of parrot behavior.* Ames, Iowa: Blackwell Publishing, 2006;233–245.
4. DeWitt M, Westerhof I, Penfold LM. Effects of leuprolide acetate on avian reproduction, in *Proceedings*. 25th Annu Conf Assoc Avian Vet 2004;73–74.
5. Orosz SE. Diagnostic workup of suspected behavioral problems. In: Luescher AU, ed. *Manual of parrot behavior*. Ames, Iowa: Blackwell Publishing, 2006;195–210.
6. Wilson L, Lightfoot TL. Concepts in behavior: section III. Pubescent and adult psittacine behavior. In: Harrison GJ, Lightfoot TL, eds. *Clinical avian medicine*. Vol I. Palm Beach, Fla: Spix Publishing, 2006;73–84.
7. Seibert LM. Husbandry considerations for better behavioral health in psittacine species. *Compend Contin Educ Vet* 2007;29:303–306.
8. Seibert LM, Sung W. Psittacines. In: Tynes VV, ed. *Behavior of exotic pets*. Ames, Iowa: Blackwell Publishing, 2010;1–11.
9. van Hoek CS, ten Cate C. Abnormal behavior in caged birds kept as pets. *J Appl Anim Welf Sci* 1998;1:51–64.
10. Kim LC, Garner JP, Millam JR. Preferences of orange-winged Amazon parrots (*Amazona amazonica*) for cage enrichment devices. *Appl Anim Behav Sci* 2009;120:216–223.
11. Meehan CL, Millam JR, Mench JA. Foraging opportunity and increased physical complexity both prevent and reduce psychogenic feather picking by young Amazon parrots. *Appl Anim Behav Sci* 2003;80:71–85.
12. Harrison GJ. Perspective on parrot behavior. In: Ritchie BW, Harrison GJ, Harrison LR, eds. *Avian medicine: principles and application*. Lake Worth, Fla: Wingers Publishing Inc, 1994;96–108.