


CONSULT THE EXPERT

FELINE COMPULSIVE DISORDER

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Feline compulsive disorder (CD) involves abnormal, repetitive behavior that occurs without an apparent trigger when other physical or behavioral causes have been excluded. The behavior can result from frustration, anxiety, and/or stress and presents significant concerns for patient welfare and the human–animal bond.^{1,2}

Approximately 3.5% to 7% of cats seen by veterinary behaviorists are diagnosed with CD.³⁻⁵ Feline CD encompasses a variety of behavioral presentations that can be categorized as self-directed, oral, locomotor, vocal, or visual/hallucinatory (*Table*, pages 34-35). Self-directed behavior (eg, overgrooming) is most common, followed by oral behavior (eg, pica).^{3,5,6}

Background & Pathophysiology

The pathophysiology of feline CD is likely multifactorial due to the wide variety of clinical presentations. Altered function in cortico-striatal-thalamo-cortical pathways, including the basal ganglia, has been implicated in human and animal models of CD.^{7,8} Varying neurotransmitter (eg, serotonin, dopamine, glutamate, acetylcholine) levels at different locations along this pathway can influence the category of CD behavior expressed.⁸ Psychopharmaceuticals to modify these neurotransmitter levels have successfully been used to treat CD in some cats.⁹⁻¹¹

Physical and environmental stressors have been implicated in some types of feline CD. In a study of 11 cats with psychogenic alopecia, 9 cats experienced an environmental change or stressful event (eg, separation from owner, death of an animal companion, moving to a new home) around the time of alopecia onset.⁹ Wool-sucking has also been shown to be triggered by stressful events, including being left alone for extended durations.¹² Early weaning (<7 weeks of age) has been found to increase the risk for wool-sucking and overgrooming but has not been associated with an increased risk for pica.¹²⁻¹⁴ In another study, medical issues (eg, cardiovascular disease, neoplasia, allergies) were more prevalent in wool-sucking cats as compared with non-wool-sucking cats.¹²

History & Clinical Signs

Several breed predispositions have been identified for various CD behaviors, suggesting genetic factors

CD = compulsive disorder

may play a role (*Table*, pages 34-35). Overgrooming and self-directed behavior are more commonly observed in Siamese, Burmese, and Oriental cats,^{5,9,15} and wool-sucking appears to be more prevalent in Siamese, Birman, and crossbreed house cats.^{6,12,15} Analysis of the genealogies of wool-sucking Siamese and Birman cats has indicated a dominant mode of inheritance, with possible incomplete penetrance.¹⁶ Some studies have concluded that Bengal, Burmese-type, and Siamese cats may be more likely than other breeds to exhibit pica and oral behavior,^{4,5} although one study did not identify breed associations for these behaviors.¹⁴

The mean age of onset of CD is ≈2 years,⁶ although breeds that are predisposed to CD may exhibit signs at a younger age. For example, in one study, the mean age of onset of fabric-sucking in Siamese and Birman cats was 41.6 and 67.6 weeks, respectively.¹² In the previously mentioned study of 11 cats with psychogenic alopecia, 4 cats (2 Oriental and 2 domestic shorthair) exhibited fabric-sucking prior to 1 year of age.⁹

Overgrooming tends to be directed at the abdomen, flanks, back, thorax,⁹ and medial aspects of the thoracic limbs and thighs.¹⁷ However, overgrooming in these areas is not pathognomonic for psychogenic alopecia, as physical causes of overgrooming (eg, pruritus, pain) can result in the same pattern.¹⁷ In some cases, excoriation of the underlying skin may be present.

Pica may be directed at one or several objects, with shoelaces or threads, plastic, fabric, rubber, paper or cardboard, and wood being the most common.¹⁴ Cats exhibiting pica may chew on, suck on, or ingest various objects.¹⁴ In a study, cats that sucked on fabric were likely to also ingest fabric.¹⁴

Diagnosis

Feline CD is a diagnosis of exclusion; numerous medical differential diagnoses (*Table*, pages 34-35) must be ruled out before CD can be diagnosed. In a

study of 21 cats referred to a veterinary behaviorist for psychogenic alopecia, medical (ie, nonbehavioral) causes of repetitive behavior were identified in 76% of the cases¹⁷; only 2 cases were identified to have behavioral causes, and 3 exhibited a combination of psychogenic alopecia and pruritus. After presumptive medical causes have been identified and treated, the repetitive behavior may persist to the same or a lesser degree, which can indicate that the physical ailment was either not the primary inciting factor or that medical and behavioral comorbidities were present.

A diagnosis of CD can be supported when physical and behavioral causes of an abnormal, repetitive behavior that interferes with a cat's quality of life have been ruled out. To make this determination, a thorough behavior history—including but not limited to a description (ideally including a video) of the behavior, initiating factors, situations in which the behavior is likely to occur, pet owner's response, and previous treatment attempts and their degree of success—should be obtained. Behavior history forms are available from several resources (see *Suggested Reading*, page 37).

Obtaining an accurate verbal history may be difficult, as pet owners may mislabel or not have witnessed their cat's behavior. For example, cats with psychogenic alopecia are likely to be presented for hair loss rather than overgrooming because owners may not witness overgrooming. Similarly, a pet owner may not realize that the cat exhibits pica until it vomits or foreign bodies are detected on imaging or during exploratory surgery. Some CD behavior may be difficult for pet owners to describe and are subject to misinterpretation. Skin rippling associated with feline hyperesthesia may be described as itching, twitching, or a seizure by the pet owner. When possible, owners should be encouraged to record a video of their cat's behavior. A trichogram exhibiting barbered hairs with sharp, broken ends can help differentiate between overgrooming and hair loss or poor regrowth.¹⁸

Treatment & Management

Treatment of feline CD includes educating owners, minimizing the repetitive behavior, reinforcing alternative behavior, and alleviating stress through environmental enrichment and anxiolytics.

Verbal or physical punishment (eg, yelling, swatting, scruffing) should not be used to treat CD. Because repetitive behavior often originates from stress or frustration, use of harsh verbal or physical punishment that increases the cat's anxiety may exacerbate the disease. Moreover, cats may avoid punishment by learning to engage in the CD behavior out of the pet owner's sight. If the cat engages in CD behavior and must be interrupted, it is best to use remote punishment not associated with the owner's presence (eg, dropping a book to make a noise out of the cat's sight, tossing a pillow across the cat's line of sight to break its concentration).

Minimizing the practice of the CD behavior reduces opportunities for reinforcement of the behavior and may be necessary for the health and welfare of the cat, particularly if the behavior is self-injurious. If overgrooming or hyperesthesia results in wounds, an Elizabethan collar may be required. Similarly, cats exhibiting pica may need to be confined to a single room or cage where the environment and access to objects can be strictly

A trichogram exhibiting barbered hairs with sharp, broken ends can help differentiate between overgrooming and hair loss or poor regrowth.¹⁸

TABLE

BREED PREDISPOSITIONS, PHYSICAL EXAMINATION FINDINGS, & MEDICAL DIFFERENTIALS FOR FELINE COMPULSIVE DISORDER

Category	Repetitive Behavior	Breed Predispositions
SELF-DIRECTED; SELF-INJURIOUS	Overgrooming Psychogenic alopecia	Siamese ^{5,9} Burmese ^{9,15} Oriental ^{9,15} Bengal ²
	Hyperesthesia syndrome	Siamese ²¹ Burmese ²¹ Persian ²¹ Abyssinian ²¹
	Feline behavioral ulcerative dermatitis	No breed predispositions have been identified.
	Self-sucking	No breed predispositions have been identified.
	Chewing feet/claws	No breed predispositions have been identified.
	Feline orofacial pain syndrome	Burmese ²²
ORAL	Pica Wool-sucking	Siamese ^{2,4,6,12} Birman ⁸ Bengal/Burmese ⁵ Crossbreed house cat ¹⁵
	LOCOMOTOR	Pacing Tail-chasing
Hyperesthesia syndrome		Siamese ²¹ Burmese ²¹ Persian ²¹ Abyssinian ²¹
VOCAL	Excessive vocalization	Siamese
VISUAL; HALLUCINATORY	Chasing unseen prey	No breed predispositions have been identified.

*Pain and neurologic disorders (eg, seizures) are physical differential diagnoses for all repetitive behaviors.



Possible Concurrent Physical Examination Findings

Medical Differential Diagnoses*

Alopecia of the abdomen, flanks, back, thorax, and medial thoracic limbs and/or thighs
Blunt or broken hairs on trichogram
Self-inflicted excoriation or injury

Dermatologic disease
Endocrine disease
Pain

Rippling or twitching skin (similar to panniculus reflex)
Tail-twitching; patient may attack tail before running away

Neurologic/neuromuscular disease
Dermatologic disease

Ulcerative excoriations along dorsolateral neck secondary to scratching

Dermatologic disease
Neurologic disease

Self-sucking, often directed at tail tip

Dermatologic disease
Neurologic disease

Short claws
Claw bed infection

Dermatologic disease
Neurologic disease

Repetitive licking, chewing, pawing at the mouth
Oral ulcerations

Dental disease
Oral pain

GI disease
GI obstruction secondary to foreign body ingestion

Polyphagia
Iron deficiency
GI disease
Endocrinopathy

Muscular, orthopedic, or neurologic repetitive stress injury
Difficulty maintaining weight
Self-injury from tail-biting

Endocrine disease (eg, hyperthyroidism)
Lumbosacral or other neurologic disease
Orthopedic disease

Rippling or twitching skin (similar to panniculus reflex)
Tail-twitching; patient may attack tail before running away

Neurologic/neuromuscular disease
Dermatologic disease

Normal or reinforced behavior
Endocrinopathy
Neurologic disease and/or loss of hearing
Feline cognitive dysfunction

Ocular disease
Neurologic disease

Continues ►

controlled. Although necessary, these measures may increase the cat's stress, which may perpetuate the CD behavior.

Preventing situations that trigger the repetitive behavior or preemptively engaging the cat in another activity before the CD behavior occurs is ideal. For example, childproof locks may help prevent a cat with pica from breaking into closets to chew on clothing or shoelaces. If bouts of overgrooming coincide with environmental stressors (eg, owner's departure), owners can engage cats in play with a new toy before leaving. Attempts to distract the cat with food, toys, or attention while it is engaged in the repetitive behavior may inadvertently reinforce the behavior.

Positive reinforcement training should be used to teach alternative behavior and create pleasurable associations with previously stressful situations. For example, for cats that exhibit CD behavior associated with the owner's departure, a positive emotional response may be elicited if the owner's departure is consistently paired with a treat before the cat engages in the behavior. Cats that repetitively pace or vocalize can be taught to go to a specific spot (eg, a chair) on command to await a reward (eg, treat, play time, brushing). Directing the cat to a quiet, convenient location teaches an alternative coping strategy to mitigate the CD behavior.

Positive reinforcement training should be used to teach alternative behavior and create pleasurable associations with previously stressful situations.

In most cases, owners are unaware of the specific triggers of the behavior or the behavior occurs unexpectedly or not in the owner's presence. In such cases, the goal of treatment should be to reduce the cat's global anxiety and frustration through environmental enrichment and anxiolytics. Feline environmental enrichment provides a means to avoid stressful situations (eg, abundance and wide distribution of resources, including hidden or elevated spaces), mental and physical stimulation (eg, foraging toys, active play; see *Suggested Reading*), and opportunities to engage in normal, species-typical behavior (eg, provision of scratching posts and litter boxes). In a study of cats diagnosed with feline behavioral ulcerative dermatitis (ie, nonhealing ulcerations secondary to psychogenic pruritus), implementation of an environmental enrichment plan resulted in cessation of pruritus within 2 days and complete healing over several days depending on lesion severity; none of the cats that improved relapsed during the 12- to 24-month follow-up period.¹⁹

Treatment options to decrease anxiety include pheromones (eg, feline facial and appeasing pheromones), supplements (eg, α -casozepine, L-theanine), and pharmaceuticals (eg, tricyclic antidepressants, selective serotonin reuptake inhibitors; see *Suggested Reading*).

The relatively few anxiolytic efficacy studies that have been conducted for feline CD have produced varying results. For example, in a retrospective study, 5 cats exhibiting psychogenic alopecia groomed less frequently and experienced hair regrowth when treated with clomipramine (1.25-2.5 mg/cat PO every 24 hours)⁹; 3 of the 5 cats also received environmental modification to reduce stress. However, in a different prospective, double-blind, placebo-controlled study of 25 cats with psychogenic alopecia, 11 cats treated with clomipramine (0.5 mg/kg PO every 24 hours) for 56 days did not experience a significantly decreased number of grooming bouts or hair regrowth as compared with placebo-treated cats.¹¹ Mixed success has also been reported following treatment with

other behavior medications (eg, amitriptyline).^{9,20} These studies indicate that the response to psychopharmaceutical treatment is highly variable. Furthermore, because no medications are currently licensed by the US FDA for the treatment of feline CD, it is important to review possible adverse effects and obtain informed consent from the owner prior to use.

Prognosis

Prognosis for reduction in the frequency or intensity of CD behavior is fair but poor for complete resolution or cure. Owners should be informed that the goal of treatment is to improve the cat's welfare and quality of life by limiting the risk for self-injury and

increasing the amount of time engaged in pleasurable activities rather than the compulsive behavior.

Clinical Follow-Up & Monitoring

Feline CD affects the well-being of both the cat and its owner and may result in relinquishment or euthanasia of the pet if not addressed. Ongoing communication with the owner is essential to increase the likelihood of compliance with the treatment plan. Because treatment response depends on many factors and may be unpredictable, frequent consultation may be needed to adjust the treatment plan. ■

CD = compulsive disorder

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