

The Four Step Approach to the Itchy and Overgrooming Cat

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Introduction

Pruritus is one of the most common presenting complaints of cat owners in practice. The cat's symptoms may be manifested by licking/overgrooming, scratching, chewing, or biting the skin, resulting in alopecia, erythema, and dermatitis. Because cats tolerate corticosteroids well and are often difficult to medicate, overuse of long-acting steroid injections is common. Using this step-wise approach to identify and control the underlying disease can decrease our dependence on steroids and reduce the risks of developing serious adverse effects such as diabetes, congestive heart failure, and fragile skin.

It is helpful in making a diagnosis if it can be determined whether the cat has been losing hair due to overgrooming, or has been naturally losing hair due to an endocrinopathy (rare), or a follicular, sebaceous, non-allergic inflammatory or neoplastic disease. Applying an e-collar to the cat for 1 month will help to differentiate these causes, as the overgrooming cat's hair will begin to regrow. Other signs of pruritus/overgrooming in cats include: tufts of hair in the cat's favorite resting or hiding places, hair in the teeth, frequent vomiting of hair balls, and hair in the feces.

Signalment

Purebred cats such as Burmese and Siamese breeds tend to be high-strung and have more psychogenic contributions to their pruritus. Siamese cats may be more prone to food allergy. Persian and Himalayan cats are more likely to have dermatophytosis that is difficult to resolve. Kittens are more likely to have parasitic disease or dermatophytosis, while young- middle aged adults are more likely to be allergic. In older cats with no prior history of skin disease, autoimmune disease (pemphigus foliaceus), neoplastic dermatoses (Bowen's disease, cutaneous lymphoma, cutaneous hemangiosarcoma), or paraneoplastic conditions also need to be considered.

“Set yourself up for success” with the feline dermatology appointment:

- 30-40 minute appointments, or keep cat for work up +/- sedation then schedule discharge appointment
- Primary caregiver to bring in cat; note signalment-age, breed, cat lifestyle
- Bring all medications; copy food labels, ingredients
- Open-ended questions- history, client's ability to give medication, environmental factors
- History form- link to hospital website for clients to fill out and bring to appointment

- Schedule recheck appointment before client leaves, bring medications to recheck app't

History- questions to ask: (most important*)

1. Age at onset of the pruritus and whether the condition is seasonal*
2. Distribution of the pruritus / skin lesions*
3. Have owner grade pruritus on scale of 1-10
4. Cat's temperament (anxious, hyperactive or calm and relaxed)- psychogenic factors
5. Cat's past and current diet, with ingredients
6. Where the cat and other pets spend their time (100% indoors, mostly indoors but outside occasionally on leash, deck or balcony; indoor-outdoor, 100% outdoor- free-roaming)*
7. Exposure to other cats?
8. Pruritus/ lesions of other pets?* Pruritus/ lesions on the owners?*
9. Any changes to the cat's environment- new baby, new cat/ kitten, new neighborhood cat(s) in yard or by windows, household renovations, new or moved furniture, new house, change in owner's work/ school schedule, addition or loss of people in house
10. Previous therapies and response, esp. to corticosteroids and parasite control*
11. Concurrent signs of illness-inflammatory bowel syndrome (food allergy), asthma (atopic dermatitis)
12. Owner's observations of fleas on cat and other pets in house; current and past flea control for cat and other pets*

Patterns

The pattern of the alopecia or skin lesions should be noted. Is the primary pattern non-inflammatory alopecia (rule-out demodicosis and dermatophytosis before allergies, with psychogenic a diagnosis of last resort), miliary dermatitis (flea allergy most common), severe head and neck pruritus/ self trauma (food allergy most common), or ulcers in the mouth, lip or skin (eosinophilic granuloma complex due to allergies most common). A useful table of differentials for feline pruritus based on lesion location is available.¹

Do your basic “derm database”: All pruritic cats should have a skin scraping, skin cytology, dermatophyte culture, ear cytology, ear mite swab, flea combing and fecal analysis

- Multiple superficial and deep skin scrapings using a microspatula (Fisherbrand Microspatula with flat-end blade; catalogue no. 21-401-20, 800-766-7000, fisherscientific.com) and double-sided tape preparations are performed to identify the presence of external parasites such as *Notoedres* or *Cheyletiella* as well as *Demodex gatoi* or *Demodex cati* mites

- A thorough flea combing should be done on all pruritic cats to look for fleas, flea dirt, lice, and *Cheyletiella*
- Ear swabs should be obtained for both *Otodectes* as well as cytology.
- A fecal exam should be obtained to look for digested mites (*Demodex* and *Cheyletiella*) and internal parasites
- A Wood's light examination will demonstrate positive fluorescence in most *Microsporum canis* infections and will aid in the collection of hair or scale for a fungal culture. Use the toothbrush technique for culture, and use flat fungal culture plates such as those from Vet Lab Supply, 800-330-1522; Order DermatoPlate-Duo (MCR-CUL 7950-25). IDEXX PCR for dermatophytes is another option- negative rules-out dermatophytosis; false positives possible in treated cats or asymptomatic carriers. Send in hair and scrapings of crusts
- Perform skin cytology of the contents of a pustule, purulent material beneath a crust, or debris collected from the surface of the skin to identify the presence of *Malassezia*, *Staphylococci*, or other bacteria
- Samples for bacterial culture can be collected and submitted if there has been only partial or no response to appropriate antibiotic therapy with known good compliance, if the cat has been treated with multiple antibiotic courses or has been recently hospitalized, if there are deep pyoderma lesions- especially if rods are seen on cytology, or if there has been MRS infection in the household in other pets or people
- A skin biopsy should be performed if the skin lesions appear unusual or extremely severe, if the mucous membranes are affected, if the cat has failed to respond to rational therapy, and if you suspect an autoimmune or neoplastic skin disease. Send samples to a pathologist with expertise in feline dermatology.

Infectious Causes of Pruritus

STEP 1- Rule-out parasites and flea allergy with selamectin trial (alternative is imidacloprid-moxidectin). Rules out ear mites and flea bite hypersensitivity; also rules-out *Notoedres*², *Cheyletiella*³, and biting and sucking lice⁴

- Skin scrape to rule-out *Demodex*; consider trial of 3 lime sulfur dips to rule-out *Demodex gatoi*-if improved treat all cats with 6-8 weekly dips
- Year round strict flea control for the affected cat and for all pets in the household is essential
 - Use systemically absorbed products that minimize flea blood feeding and are ovicidal such as monthly selamectin, +/- nitenpyram for immediate relief.⁵
 - Treat all pets in the house
 - Make sure the products are being applied correctly- demonstrate proper technique

- The absence of fleas/ flea dirt on the pruritic cat does not rule-out flea allergy due to cats' extensive grooming and scratching behavior

STEP 2- Treat bacterial and/or yeast infection with 2- 4 weeks of antibiotics and/ or antifungal therapy

- Staphylococcal pyoderma (*S pseudintermedius* most common, also *S aureus*) is most commonly seen secondary to allergic diseases such as flea allergy dermatitis, food allergy, or atopic dermatitis
- Other underlying causes include: parasitic diseases such as demodicosis, *Notoedres*, and *Cheyletiella* infestations and other infectious diseases of the skin such as dermatophytosis and *Malassezia* dermatitis (treat with itraconazole, antifungal shampoos, mousse)
- Antibiotics should be selected based on clinical efficacy, safety, and likelihood of owner compliance/ ease of administration (see Table 1). Once daily or long-acting injectable antibiotics such as cefovecin increase the likelihood of compliance. Fluoroquinolones should be reserved for treatment of resistant deep infections (*Pseudomonas*), and not overused for routine superficial *Staph.* infections.
- In tractable cats, bathing weekly with a chlorhexidine-containing shampoo and /or topical chlorhexidine mousse (Douxo-Ceva) is a helpful adjunctive therapy
- If a cat is not showing clinical improvement while being treated with an antibiotic that was selected empirically, a bacterial culture and susceptibility test should be performed to aid in proper drug selection and to rule-out methicillin resistant *Staph.* infections
- Superficial pyodermas should be treated for a minimum of 2-3 weeks; this may need to extend for 6-8 weeks or longer for deep infections.

Table 1- Antibiotics Useful for Feline Skin Infections

DRUG	DOSAGE (mg/kg)	DOSE INTERVAL
amoxicillin trihydrate / clavulanate potassium	13.75	q 12 hours
cefovecin sodium	8	SQ q 14 days
clindamycin	11	q 24 hours
enrofloxacin*	5	q 24 hours
marbofloxacin	2.75 – 5.5	q 24 hours
orbifloxacin*	2.5 - 7.5	q 24 hours

*Idiopathic retinal degeneration has been reported in cats treated with fluoroquinolones. Enrofloxacin and orbifloxacin should not be used in cats at doses exceeding 5 mg/kg/ day or 7.5 mg/kg/day, respectively, due to an increased incidence of retinal degeneration at these higher doses.

Allergic Causes of Pruritus

STEP 3- Rule out food allergy (cutaneous adverse reaction to foods) with history, physical examination and 6-8 weeks of a home cooked, novel protein or hydrolyzed protein diet trial

- **Most common presentation is severe head and neck pruritus and self-trauma:** alopecia, excoriations, erosions/ ulcers, crusted papules
- Some cats will present with lesions of miliary dermatitis, eosinophilic granuloma complex, chronic ceruminous otitis and /or dermatitis due to *Malassezia* overgrowth, or non-inflammatory symmetric alopecia. Peripheral lymphadenopathy (mild to marked) may be present.
- Concurrent gastrointestinal signs such as vomiting and/or diarrhea (signs of IBD) may be seen in up to a third of food allergic cats and if present, make food allergy more likely
- **Serologic, salivary, or hair strand testing for foods is not useful and is best avoided**
- **Beef, fish, and chicken are the most common food allergens in cats**
- Cats are preferably fed a "hypoallergenic" home-cooked diet (**pork, duck, goat, rabbit, pheasant, ostrich, or emu combined with green peas or protein only**) for 6-8 weeks: **exoticmeats.com, mypetgrocer.com, hare-today.com** for source of meats (shipped frozen). Rayne Clinical Nutrition (**raynenutrition.com**) creates balanced home-cooked feline hypoallergenic meals of rabbit or kangaroo delivered to the clinic or pet owner
- Go to **balanceit.com or petdiets.com** for balanced home-cooked recipes and to obtain a non-flavored complete and balanced vitamin and mineral source for cats
- For owners unwilling or unable to do a home cooked diet, novel protein and carbohydrate commercial diets such as **Royal Canin or Hill's rabbit, duck, venison** dry and canned can be fed (availability varies)
- Other options include hydrolyzed protein diets such as **Hill's Z/D low allergen (dry, canned), Purina HA (dry only) or Royal Canin HP (dry only)**
- Commercially prepared hypoallergenic diets still cause reactions in up to 30% of food allergic cats, and home-cooked diets may be needed in these cases
- No treats, flavored toothpaste, or chewable medications, including fatty acids and heartworm preventatives (use selamectin instead) during the diet trial

STEP 4- Diagnose atopic dermatitis (AD) with history, physical examination, positive response to treatment with corticosteroids and exclusion of all other causes of pruritus in steps 1-3

- Feline AD is probably second only to flea allergy dermatitis as a cause of allergy in cats, and is likely more common than food allergy in this species

- Clinical signs are usually non-seasonal, due to allergy to house dust mites (*Dermatophagoides farinae*). 25 - 50 % of atopic cats also will be allergic to fleas and food allergens.
- Pruritus and the resultant secondary lesions of self-trauma often involve the head/ face-particularly the periorcular and perioral areas, pinnae, and neck. Other commonly involved areas include: the lateral thorax, flanks, ventral abdomen, forelegs, and caudal thighs. Self-trauma results in bilaterally symmetric alopecia +/- excoriations and crusts.
- Other clinical signs include lesions of the eosinophilic granuloma complex, miliary dermatitis, and ceruminous otitis, often misdiagnosed as ear mites. Over time, secondary pyoderma, *Malassezia* dermatitis and peripheral lymphadenopathy may develop. Feline asthma may be associated with underlying atopic dermatitis in some cases.
- In tractable cats, bathing with an oatmeal based shampoo and/or applying Douxo Calm mousse may be helpful, although topicals sometimes induce further overgrooming .
- Corticosteroids are very effective, but they are often overused due to the misconception that cats are resistant to steroid-related side-effects. However, side effects can occur, especially with chronic use (such as diabetes, demodicosis, hair loss, secondary infections, weight gain, muscle weakness, and rarely skin thinning/ fragility and congestive heart failure), and these adverse effects may outweigh the benefits. In some cases, more potent steroids such as triamcinolone or dexamethasone may be more effective than prednisolone. However, there is greater risk for serious side-effects with these drugs and they should be given at the lowest dose and frequency that controls pruritus, aiming for 1-2x weekly. (See Table 2)
- Antihistamines (see Table 3) and essential fatty acids are synergistic and may help some mild-moderate cases of feline AD. Sedation, behavioral changes, and anticholinergic effects are the primary side effects. The recommended fatty acid dose for anti-pruritic effect is 180 mg of eicosapentanoic acid (EPA)/ 10-15 lbs or 65-75 mg of combined EPA and DHA/kg/day.
- Refractory cases of pruritus should be referred to an experienced dermatologist with expertise in evaluating cats for allergy testing and immunotherapy. 50-70 % of atopic cats respond after 6-12 months, minimizing the need for medications. Oral allergy drops are being used in some cats with success, as an alternative to injections. Intradermal testing is considered a more sensitive and specific test for selecting allergens for immunotherapy than serologic testing in cats.
- Studies have shown that modified cyclosporine is effective in controlling itch and inflammation in many cases of feline AD.^{6,7} Atopica for Cats[®] liquid is the approved formulation. Daily dosing starting at 7 mg/kg q 24 h should be

administered until a good response is seen (4 weeks) then the frequency of administration should be decreased to every 48 hours for 4 more weeks, then twice weekly if possible for long-term use. Some cats can be maintained on 1-2 times weekly therapy. Clear up all skin infections and make sure cats are negative for FELV, FIV and toxoplasmosis prior to using cyclosporine. Keep cats indoors, prevent hunting, avoid feeding raw meat, perform regular labwork and monitor for secondary respiratory and skin infections.

Table 2- Corticosteroids for Use in Cats⁸

Prednisolone	1.5 mg/kg PO q 24 h until pruritus, lesions resolve (2-4 weeks), then taper to 0.5 mg/kg q 48 h for long-term maintenance
Methylprednisolone acetate injection	20 mg/ cat or 4 mg/kg SQ or IM max.q. 3-4 months
Triamcinolone (compound)	0.2 mg/kg PO then taper to 0.1-0.2 mg/kg q 48-72 h, for long-term therapy use lowest possible 1-2 X/ week dose
Dexamethasone	0.1- 0.2 mg/kg PO then taper to 0.05-0.1 mg/kg q 48-72 h, for long-term therapy use lowest possible 1-2 X/ week dose

Table 3- Antihistamines for Use in Cats- use only pure antihistamines⁸ (not approved for use in cats)

Cetirizine (preferred due to anti-eosinophilic properties)	2.5 mg/ cat PO q 24 h
Loratidine	2.5 mg/cat PO q 24 h
Chlorpheniramine maleate	2 mg/ cat PO BID
Cyproheptadine	1- 2 mg/cat BID
Diphenhydramine HCl	2 -4 mg/ cat PO BID
Hydroxyzine HCl (or pamoate)	5-10 mg/ cat PO BID
Amitriptyline	2.5 mg/ cat q 12-24 h

References

1. Ghubash R. "Diagnosing the cause of feline pruritus." *Compendium Con't Ed Pract Vet Aug* (2009):352-358.
2. Beale KM, Fujioka C. "Effectiveness of selamectin in the treatment of *Notoedes cati* infection in cats." *Proc. 16th AAVD/ACVD Norfolk,VA*(2001):5.
3. Mueller RS, Bettenay SV. "Efficacy of selamectin in the treatment of canine Cheyletiellosis" *Vet Record* 151(2002):773.
4. Shanks DJ, Gauthier P, McTier TL, et al. "Efficacy of selamectin against biting lice on dogs and cats." *Vet Record* 152(2003):234-237.
5. McCoy C, Broce AB, Dryden MW. "Flea blood feeding patterns in cats treated with oral nitenpyram and the topical insecticides imidacloprid, fipronil and selamectin." *Vet Parasitology*156 (2008):293-301.
6. Vercelli A, Raviri G, Cornegliani L. "The use of oral cyclosporine to treat feline dermatoses: a retrospective analysis of 23 cases." *Vet Dermatology* 17(2006): 201-206.
7. Noli C, Scarampella F. "A prospective pilot study on the use of cyclosporine on feline allergic disease (abst.)." *Vet Dermatology* 15 (Suppl.1)(2004):33.
8. Medleau L, Hnilica K,eds. *Small Animal Dermatology- A Therapeutic Guide- 2nd ed.* St. Louis, Missouri:Elsevier, 2006: Chapter 7- Hypersensitivity Disorders, 177- 178.