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DIAGNOSING FAD

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MEET THE AUTHOR

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Flea Allergy Dermatitis: What Your Clients Need to Know

Many dogs and cats can harbor ectoparasites such as mites, lice, and fleas and are not bothered by their presence unless parasitic numbers are causing mechanical irritation. However, if the animal has a parasite hypersensitivity, pruritus can be moderate to severe causing alopecia and excoriations, which can lead to the development of secondary skin infections.

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BOX 1

**Environmental Conditions
Most Suitable for Flea Survival
and Reproduction**

- Moderate temperatures of 18-30°C
- High relative humidity of 70-80%
- Most prevalent in the summer and fall
- Can be year-round in warm climates
- Do not survive outside in colder climates, or in hot climates with low humidity

Having a pruritic pet can be frustrating, stressful, and concerning; it is a common reason for clients to seek veterinary care. The veterinary technician's role is important in a successful outcome and plays a key role in client education, compliance, and building trust. Pets with parasite hypersensitivities will often be itching and restless in the exam room and clients can be emotional and desperate for help when providing the history. For patients exhibiting this level of pruritus, parasites can be suspected and the staff notified to start disinfecting protocols. It is important for technicians to use their soft skills consisting of listening, patience, and empathy.

The prevalence of flea allergy dermatitis (FAD) depends on geographic location and ranges from one of the most commonly diagnosed allergic dermatoses seen in both dogs and cats or not occurring at all in areas that do not have fleas.¹ Commonly pets with FAD will have concurrent atopic dermatitis (AD) and/or cutaneous adverse food reaction (CAFR).

WHAT IS FLEA ALLERGY DERMATITIS?

FAD also known as flea bite hypersensitivity is an allergic reaction to flea saliva injected by the bites of fleas. Clinical signs can be either a seasonal problem or can be year-round depending on environmental conditions (**BOX 1**).

CLINICAL FEATURES OF FAD

Dogs

Although clinical signs can develop at any age, many dogs are diagnosed as young adults often by

the age of 5. There is no breed or sex predilection.¹ On physical examination there is commonly a papular dermatitis that affects the flanks, and the entire caudal body including; the tail, perineum, and ventral abdomen (**FIGURES 1 AND 2**).¹ An easy way to remember clinical signs is picturing the dog wearing pants, the areas the pants would touch a dog being the most commonly affected locations. Generalized distribution can occur. Chronic cases may develop seborrhea, alopecia, crusting, lichenification, acral lick granulomas, and pyotraumatic dermatitis (**FIGURE 3**). Due to inflammation, secondary skin infections with bacteria and/or yeast are common.

Cats

There is no breed, age, or sex predilection.¹ Four common reaction patterns that are similar to feline allergic dermatitis and CAFR are seen (**FIGURES 4 AND 5**): miliary dermatitis (papules with crusting), symmetrical alopecia (caudal dorsum and flank area most common), head and neck excoriations, and eosinophilic granuloma complex (indolent lip ulcers, eosinophilic plaques, and eosinophilic granulomas)². Pruritus can be constant and intense. Skin infections are less common than in dogs.



FIGURE 1. Canine - caudal half of the body has alopecia, lichenification, and serous crusting.



FIGURE 2. Canine – erythema and alopecia on the ventral abdomen.



FIGURE 3. Canine – alopecia on the caudal half of the body with lichenification at the base of the tail.

DIAGNOSING FAD

Unless fleas or flea dirt (flea feces) are found on the pet, it may be difficult to convince owners that their pet may be dealing with FAD. Although intradermal allergen testing (IDAT) can be useful in dogs with a positive reaction to flea extract, demonstration of hypersensitivity does not alone justify a diagnosis.

IDAT is not as helpful in cats and results can be difficult to interpret. History, clinical signs, exclusion of other differentials, and response to a therapeutic trial is the only way to confirm the diagnosis. Helping clients understand that in some cases it only takes a few flea bites to evoke a hypersensitivity reaction will help convince them of the importance to perform a therapeutic trial. Since the clinical signs can be very similar to the other two most common differentials being AD and CAFR, ruling out parasite hypersensitivity is warranted in achieving a diagnosis of these pruritic dermatoses as well.

Whether FAD is suspected or has been confirmed, the goal is the same: avoid flea bites as much as possible, treat the pruritus when flare-ups occur, and prevent secondary skin infections. Client education is essential and should include these topics with addressing the client's main concern first, which is typically the pet's discomfort.

- Treatment for the pruritus
- Treatment of secondary bacterial and yeast infections
- The flea life cycle
- Mandatory treatment of all in-contact pets with flea preventatives
- Products available for flea control, proper administration, and client expectations
- Environmental control measures
- Financial concerns and providing estimates

Treatment of pruritus

Corticosteroids are the most effective therapy for controlling the intense pruritus associated with FAD and oral administrations is preferred over injectable due to the ability to taper the dosage. Since corticosteroids also reduce inflammation in the skin, they help prevent secondary infections associated with bacteria or yeast overgrowth. Cats, more so than dogs, may require treatment with corticosteroids for longer periods of time.

The flea life cycle

Metamorphosis of the flea is complex, but explaining the facts doesn't have to be. For every adult flea on the host there are many eggs, larvae, pupae, and newly emerged adults in the environment. In most cases, the life cycle is complete in 3-4 weeks; however, it can be shorter or longer depending on environmental conditions (**BOX 2**). Within 24 to 36 hours after the

first blood meal, the female flea starts producing eggs, and can lay up to 50 eggs per day.¹ The non-sticky eggs are laid on the pet and drop off into the environment where the life cycle then continues. A good analogy of this life cycle is to think of the animal as a salt shaker.

Mandatory treatment of all in-contact pets with flea preventatives

Ideally the FAD affected pet needs treatment with a product that eliminates adult fleas (adulticide) and inhibits growth of the immature stages (insect growth regulator). The time between dosing is commonly reduced during a treatment trial or when flare-ups occur from monthly to every 14 days for 2-3 applications. All in-contact animals, whether indoor or outdoor pets (exotic animals included), need to be treated or the life cycle will continue. Other in-contact dogs and cats can be treated following the product labeled instructions, which is usually monthly administration. There are no labeled flea preventatives for exotic pets; however, Selamectin is commonly used “off-label” for ferrets, rabbits, hedgehogs, guinea pigs, rats, gerbils, and mice.^{1,3} Year-round treatment is recommended.

Products available for flea control, proper administration, and client expectations

There are numerous flea products available including topical, oral, and injectable formulations. Some target the adult fleas (adulticides), others target the immature stages (insect growth regulators), and some products are both an adulticide and an IGR. Explaining proper administration of flea products and administering the first dose of treatment can help minimize client error. Product labels need to be



VITAL KNOWLEDGE

Within 24 to 36 hours after the first blood meal, the female flea starts producing eggs, and can lay up to 50 eggs per day.¹

read carefully and pet owners made aware that many products for dogs cannot be used on cats and some exotic pets especially those containing pyrethroids. This is especially important if clients are purchasing over-the-counter products (OTC). Topical spot-on medications need to be applied to dry skin and bathing is prohibited for a period of time after application depending on the product used. A good rule of thumb is no bathing 2 days prior or after application of a topical product. Excessive bathing and swimming should be avoided. Some oral medications need to be administered with food for best absorption. OTC products are not recommended for the control of FAD.

Environmental control measures

Environmental control measures may or may not be required depending on the severity of the infestation. Treating all in-contact animals is the most important environmental aspect and should eventually lead to elimination of the fleas; however, it can take up to

Courtesy Diana Simões (2); Opposite: Courtesy Diana Simões (2).



FIGURE 4. Feline - alopecia on the caudal body and left shoulder.

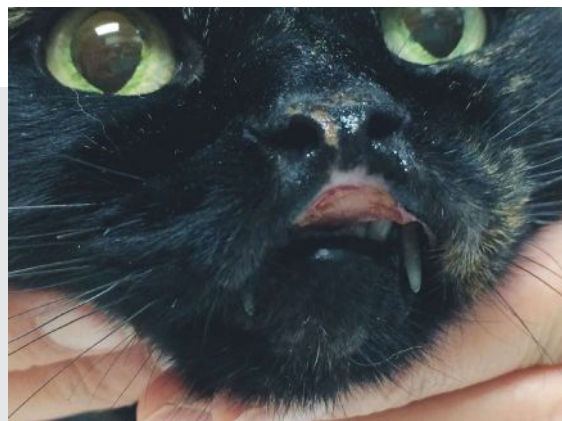


FIGURE 5. Feline - indolent ulceration of the rostral maxillary lip.

BOX 2

Fleas can transmit disease



● Intermediate hosts for

- Tapeworms, *Dipylidium caninum*

● Vectors for

- *Rickettsia felis* and *Rickettsia typhi*
- *Bartonella hensela* and *Bartonella clarridgeiae*
- *Mycoplasma* spp.

2-3 months due to the different life stages that may be present (BOX 3). There are things clients can do to speed up the process with the goal being to reduce preexisting life stages. Since it can be a daunting task, having clients make a list of the areas their pets spend most of their time can help pinpoint the areas to focus on when it comes to cleaning, laundering, vacuuming, and the application of environmental insecticides. Areas of concern include: pet bedding, under or on furniture, closets, carpeting, underneath porches, shaded areas outside such as bushes and shrubs, dog houses, kennels, sheds, and even the family vehicle.

Financial concerns and providing estimates

Depending on how many pets are in the household treatment can be a significant financial burden for clients. Providing estimates on the different flea products available is essential and will help with owner compliance. Many flea products protect against other ectoparasites such as mites, lice, and ticks as well as internal parasites such as heartworms, and roundworms.

SUMMARY

Prognosis for pets with a confirmed diagnosis of FAD is good if there is effective client compliance and flea bites are prevented. Long-term goals include year-round flea prevention for all pets in the household, limiting the pet's exposure to feral animals and outdoor wildlife that can be reservoirs for fleas, and treating the environment once a year with an IGR. A team approach with the veterinary technician and the client consisting of patient updates and communication can help ensure a successful outcome for pets with FAD.

References

1. Miller WH, Griffen CE, Campbell KL. Hypersensitivity Disorders and Parasitic Skin Disease. In: *Muller & Kirks Small Animal Dermatology*. 7th ed. St. Louis, MO: Elsevier; 2013: 405, 407, 408, 410, 323, 324, 846.
2. Noli C, Foster A, Rosenkrantz W. Flea Bite Allergy. In: *Veterinary Allergy*. West Sussex, UK: John Wiley & Sons, Ltd; 2014: 252
3. For more information regarding exotic pets refer to *Muller & Kirk's Small Animal Dermatology*. 7th ed.; 844-846.

BOX 3

Approximate Parasitic Stages Present in Household



Ctenocephalides felis
(the cat flea) is the most common species that affects both dogs and cats worldwide.

