Feline allergic dermatitis: clinical aspects and diagnosis

Favrot, C

Update on feline hypersensitivity dermatoses

Claude Favrot

Dermatology Service, Vetsuisse Faculty, University of Zurich, Zurich, Switzerland

Hypersensitivity dermatitides (HD) are often suspected in companion animals and these include flea (and other insect) bite hypersensitivity dermatitis, cutaneous adverse food reactions, urticaria, angioedema, contact dermatitis and atopic dermatitis (AD).[1] Some of these conditions are rare in cats (angiodoema, contact dermatitis) and the term "atopic dermatitis" itself may be regarded as inadequate because the role of IgE in the development of this condition is not definitively proven.

Clinical signs

Most cats with HD present with one or more than one of the following reactions patterns: head and neck excoriations and pruritus, miliary dermatitis, self-induced (symmetrical) alopecia, and eosinophilic dermatitis. In one recently published study, 46% of the Non Flea HD cats presented with at least 2 of the reaction patterns mentioned above [2]. It is however worth noticing that atypical forms such as pododermatitis (including plasma cell pododermatitis), seborrheic reactions, exfoliative dermatitis (mural folliculitis), facial erythema, pruritus sine material (without any obvious skin changes) and ceruminous otitis have been described by some authors and represented 6% of Non Flea HD cats included in the previously cited study [1,3-7 2,8].

Miliary dermatitis refers to a papulocrustous dermatitis developing usually on the face and dorsal aspects of the body. These lesions are usually very small and may be difficult to see. This pattern is often associated with other facial lesions and/or alopecia.

Head and neck excoriations and pruritus refers to papular and erythematous changes occurring on the face and neck of cats often in association with self-induced lesions, alopecia, crusts, miliary dermatitis and/or seborrheic changes. Associated pruritus may be extremely severe and self-induced lesions may be impressive.

Self-induced alopecia is characterized by usually symmetrical changes occurring mostly on the flanks, abdomen and dorsum and caused by excessive licking (overgrooming). This behaviour is easily recognized because hair tips in and around the lesions are broken. Some owners do not associate these changes with excessive licking and present the cat for a suspicion of spontaneous alopecia.

Eosinophilic dermatitides consist in eosinophilic plaques or granulomas and/or indolent ulcerations.

Indolent ulcer is a unilateral or bilateral erosive to ulcerative lesion of the upper lips. The lesions may be very severe but do not cause major discomfort.

Eosinophilic plaques are raised, erythematous, exsudative and intensely pruritic lesions developing on the abdomen, inguinal, medial and caudal aspects of the tigh area and less frequently on the neck and face [9]

Eosinophilic granulomas may present as linear, diffuse to nodular swollen and usually firm lesions occurring mostly in the oral cavity, interdigital areas, chin (fat chin) and limbs (linear granulomas).

HD cats usually present with intense pruritus. In one study, owners evaluated this itching as 5 or above 5 in a scale ranging from 0 to 10 in 88% of the patients [2]. Pruritus is however not always recognized by owners (especially in cats with self-induced alopecia), and trichoscopy (broken hair tips) is useful to demonstrate overgrooming.

HD cats may also present with some non-dermatological signs. In one study, 6% presented with sneezing and/or coughing, 14% with digestive signs (Soft tools, diarrhea, vomiting), 7% with conjunctivitis and 16 % with otitis externa and/or media.

Flea HD, Food HD and non flea, non food HD cats

It has been reported that cats with Food HD present more frequently with head and neck excoriations than cats with other type of hypersensitivity. This report was not confirmed by the more recently published study, in which no statistically significant differences in terms of distribution patterns, were found [2]. One of the main conclusions of this study was that Food and not Food HD are virtually indistinguishable on clinical criteria alone.

Flea HD may present with the very same signs as other forms of feline HD but the relative frequency of each pattern and localization varies. In Flea HD cats, dorsal and lateral aspects of the body are clearly more often affected while face, ventral parts and limbs lesions are more often associated with Food or non Flea non Food HD.

As far as reaction patterns are concerned, military dermatitis is more often observed in cats with flea HD when compared to other HD cats. On the contrary, the three other reactions patterns appear more typical of Food HD and non Flea, non Food HD. It is also worth noticing that these three conditions may present with two or more than two of these patterns. These associations are more frequently observed in Food or non Flea, non Food HD cats.

Diagnosis

None of the clinical signs or reaction patterns mentioned above is pathognomonic and ruling out resembling diseases is consequently a compulsory step in the HD work-up. It is usually admitted that ectoparasites such as otodectes, notoedres, demodex, louse, neotrombicula, bacterial and fungal diseases should be ruled out in virtually all cats [2,3,9-12]. Additionally, depending on the clinical presentation, some other differential diagnoses should be considered and corresponding tests should be carried out (see Table below)

Reaction pattern	Main differential diagnoses	Test
Miliary dermatitis	Fleas	Comb, therapeutical trial
	Ectoparasites	Scrapings, therapeutical trial
	Dermatophytes	Cultures, trichoscopy, wood's lamp
	Folliculitis	Cytological examination
Self-induced alopecia	Internal diseases	Trichoscopy (hair tips not broken)
	Folliculitis	Cytologogical examination
	Psychogenic alopecia	Diagnosis of exclusion, Therapeutical trial
	Ectoparasites (demodex)	Scrapings
Eosinophilic dermatitis	Gingivitis	Histopathology
	Ectoparasites	Scrapings
	Skin tumors (mast cell tumor, cutaneous lymphoma, metastases)	Histopathology
	Bacterial diseases (Staph., mycobacteriosis, nocardiosis)	Cytological examination, histological examination, culture, PCR
Head and neck pruritus	Ectoparasites	Comb, scrapings, therapeutical trial
	Fungal diseases (dermatophytes, maalssezia)	Cytological examination, wood'slamp, trichoscopy, culture
	Bacterial diseases	Cytological examination, culture
	Viral diseases (herpesvirus, papillomavirus, calicivirus, poxvirus, FelV virus)	Histological examination, PCR
	Skin tumors (cutaneous lymphoma, squamous cell carcinomas, mast cell tumors)	Histopathological examination

Criteria for the diagnosis of feline HD dermatitis have been recently proposed and will be presented during the lectures [13]. When Non Flea, non Food HD cats are compared to all other cats with chronic pruritus sensitivity (including those with Flea HD) and specificity of these criteria is about 75%: When flea HD cats are excluded, other criteria may be used and are associated with a sensitivity of 90% and a specificity of 82%: one must consequently keep in mind that using these criteria alone would be associated with a substantial amount of wrong diagnoses and that a thorough work-up is needed is all cats with a suspicion of HD dermatitis. The work-up should include tests for fleas and flea control, scrapings for other ectoparasites, cytological examination of the skin when inflamed, properly made elimination diet and specific allergy tests.

References

1. Scott DW, Miller WH, Griffin CE. Chapter 8. Skin immune system and allergic skin diseases. In: Scott DW, Miller WH, Griffin CE, eds. Muller and Kirk's Small Animal Dermatology (ed 6th). Philadelphia: W.B. Saunders Co.; 2001:543-666.
2. Hobi S, Linek M, Marignac G, et al. Clinical characteristics and causes of pruritus in cats: a multicentre study on feline hypersensitivity-associated dermatoses. Veterinary Dermatology. 2011;22:406-413.
3. Foster AP, Roosje PJ. Update on feline immunoglobuline E (IgE) and diagnostic recommendations for atopy. In: August JR, ed. Consultation in Feline Internal Medicine (ed 4th). Philadelphia: Saunders W.B.; 2004:229-238.
4. Prélaud P, Guaguère E, Freiche V, Drouard C, Laforge H. The allergic cat. Prat Med Chir Anim Cie. 1999;34:437-447.
5. Prost C. Les dermatoses allergiques du chat. Pratique Médicale et Chirurgicale de l'Animal de Compagnie. 1993;28:151-164.
6. Bryan J, Frank L. Food allergy in the cat: a diagnosis of elimination. Journal of Feline Medecine and Surgery. 2010;12:861-866.
7. Declercq J. A case of diet-related lymphocytic mural folliculitis in a cat. Vet Dermatol. 2000;11:75-80.
8. Saridomichelakis MN, Koutinas AF. A retrospective study of 10 spontaneous cases of feline atopic dermatitis. European Journal of Companion Animal Practcice. 2001;11:177-183.
9. Young KM, Moriello KA. Eosinophils and eosniophilic diseases. In: August JR, ed. Consultation in Feline Internal Medicine. Philadelphia: Saunders, W.B.; 2004.
10. Foster AP. Diagnosing and treating feline atopy. Veterinary Medicine. 2002:226-240.
11. O'Dair H, Markwell P, Maskell I. An open prospective investigation into etiology in a group of cats with suspected allergic skin disease. Veterinary Dermatology. 1996;7:193-202.
12. Roosje PJ, Thepen T, Rutten VPMG, Willemse T. Feline atopic dermatitis. In: Thoday KL, Foil CS, Bond R, eds. Advances in Veterinary Dermatology, Volume 4. Oxford: Blackwell Sciences; 2002:178-187.
13. Favrot C, Steffan J, Seewald W, et al. Establishment of diagnostic criteria for feline nonflea-induced hypersensitivity dermatitis. Veterinary Dermatology. 2012;23:45-50.