

Feline atopic syndrome: a case study



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The paper presents a case study of a cat with recurrent pruritus and the latest information concerning feline atopic syndrome (FAS) diagnostics and treatment.

Key words: cat, pruritus, allergy

Case study

Patient: European shorthair cat, spayed female, 2 years old.

A cat presented skin problems exacerbating for one year. Skin lesions with pruritus were located on the head, including the ears and neck. In the past, the cat received symptomatic treatment for dermatophytosis (antifungal vaccines and itraconazole), bacterial dermatitis (various types of systemic antibiotic therapy in injections, including amoxicillin with clavulanic acid), and antipruritic medications (systemic glucocorticoids in injections, e.g., dexamethasone). The therapy did not result in any significant improvement of skin lesions or pruritus. The patient was referred for dermatological consultation.

During the consultation, the general condition of the patient was considered good. The skin lesions were located on the neck, particularly severe in the dorsal area and on the inner aspect of the left rear limb. During the visit, the patient was presenting pruritus, such as scratching and compulsive licking of the affected areas. There was an extensive wound on the neck due to self-mutilation, and the lesion was hyperaemic and covered with small crusts (Fig. 1). The wound seemed to be painless; however, there was slight hyperesthesia causing bouts of scratching. A typical manifestation of eosinophilic plaque was observed on the inner surface of the thigh (Fig. 2).

Differential diagnostics principally include:

- Allergic diseases (flea allergy dermatitis, atopic skin syndrome, food allergy).
- Infestations with ectoparasites (fleas, insect bites).
- Dermatophytosis and bacterial infection (as complication).



Fig. 1 An extensive wound on the dorsal part of the neck associated with self-mutilation.



Fig. 2 Eosinophilic plaque on the inner surface of the lower part of the left rear limb.

- Behavioural aetiology (stress related to frequent absence of the owners). The following ancillary skin tests were performed:
 - The Wood's lamp examination: no fluorescence was detected.
 - Brushing-based test: no parasites or their eggs were found.
 - Trichogram: no parasites or their eggs were noticed.
 - Scraping: no parasites or their eggs were spotted.
- A cytological examination revealed numerous eosinophils and neutrophils (Fig. 3).
- A sample for mycological examination was collected (fungal culture).

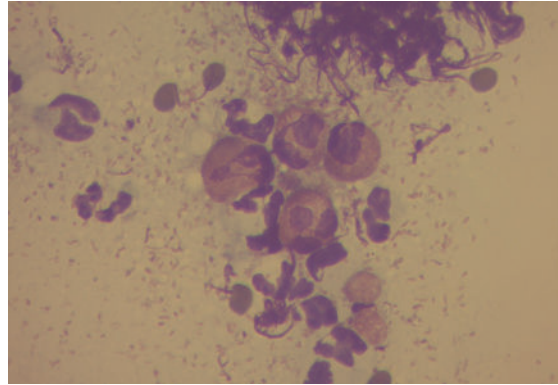


Fig 3 Mixed type inflammation – with neutrophils and eosinophils (indicated with an arrow).

Allergic aetiology was suspected due to the medical history and the results of ancillary tests. It was recommended to implement an elimination diet based on protein hydrolysate for 12 weeks and then to perform a food challenge to confirm the association with food and determine allergy triggers. The culture excluded dermatophytosis. Symptomatic treatment was started to reduce allergic reactions as soon as possible and to eliminate complications. Therefore, cefovecin at a dose of 0.1 ml/kg body weight (BW) was injected subcutaneously twice (at a 14-day interval), and therapy with prednisolone at a dose of 1 mg/kg BW P.O. BID was initiated but the dose and frequency were progressively tapered. Rivanol solution was used to disinfect and clean the wounds. The treatment with glucocorticoids and topical antibiotics proved unsuccessful; the application of cream and ointment attracted

even more attention from the cat and triggered scratching. A spray with hydrocortisone aceponate was applied on the intact epidermis, which enabled an intermittent use of prednisolone: on days without the oral medication, the spray was administered once a day over pruritic areas. Unfortunately, it was impossible to perform the elimination diet properly, but exposure to the other proteins (food for cats) triggered pruritus and caused dermatological symptoms. The next stage of management involved an initial attempt to discontinue corticosteroids and implement a protocol with chlorpheniramine, oclacitinib, and cyclosporine; however, these drugs proved ineffective in the patient.

The cat's owners did not agree to allergy tests or allergen-specific immunotherapy. Nevertheless, it was possible to administer a prednisolone maintenance dose (1 mg/kg BW) twice a week or less often. Remission

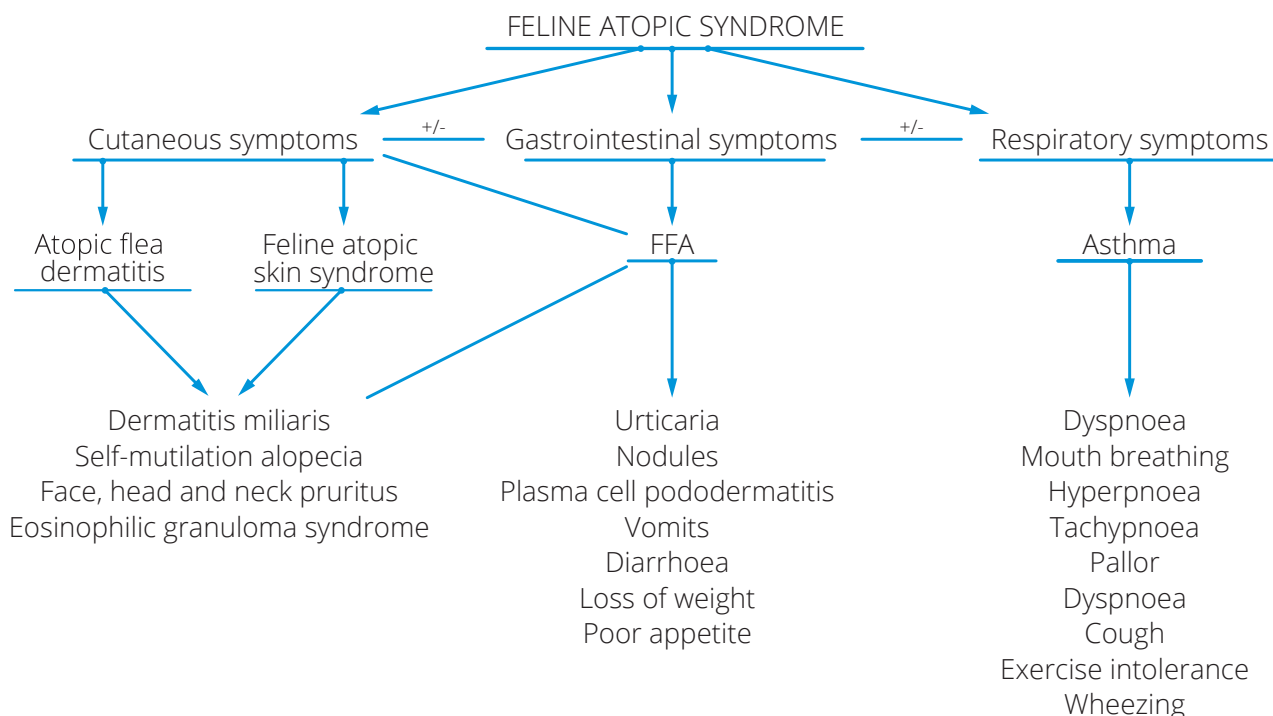
periods of a few months were also achieved without any medications. Considering the evidence altogether, concomitant (feline) atopic skin syndrome and food allergy were diagnosed.

Summary

In 2021, a group of specialists belonging to ICADA (International Committee on Allergic Diseases of Animals) released a series of papers, published in *Veterinary Dermatology*, discussing new nomenclature, pathogenesis, clinical symptoms, appropriate diagnostics of allergy, and the current recommended methods of treatment (1, 2, 3, 4). The following division and terminology of feline allergic diseases were proposed (1):

- Feline atopic syndrome (FAS): allergic dermatitis associated with environmental, and food allergens and with asthma, which is related to Ig E antibodies.
- Feline atopic skin syndrome (FASS): a cutaneous syndrome accompanied by dermatitis and skin pruritus; the presentation varies and features different clusters of symptom, however, none is specific of FAAS, and the presentation can be associated with IgE antibodies related to environmental antigens.
- Feline asthma: eosinophilic bronchitis leads to spontaneous bronchospasm and remodelling of the respiratory system, which may be associated with IgE antibodies related to inhaled allergens.
- Variants of external (with IgE increase) and internal allergic diseases (without IgE

Tab. 1. Diagnostic pathway and FAS-related clinical symptoms.



Based on *VetDermatol* 2021; 32, 26-e6



increase); concerning FASS, the internal variant is similar to atopic-like dermatitis in dogs.

- Feline food allergy (FFA): each clinical symptom, also related to FASS, is associated with an immune reaction to ingested food.

Atopic feline syndrome may present as dermatological symptoms deriving from the gastrointestinal and respiratory tract (Table 1). All these diseases have one thing in common, namely clinical symptoms, and these include miliary dermatitis, self-mutilation alopecia, head and neck pruritus, and eosinophilic granuloma syndrome (3). Moreover, food allergy may cause other skin symptoms, such as urticaria, non-pruritic nodules, plasma cell pododermatitis, and gastrointestinal symptoms including vomiting, diarrhoea, loss of body weight, and lack of appetite (3).

The diagnosis of FAS is based on a detailed medical history, clinical examination, and elimination of other causes since clusters of dermatological symptoms can develop in various dermatological conditions, and they may coincide (3) (Table 2).

The discussed papers feature the following recommendations concerning the medications for FAS management (4):

- Systemic glucocorticoids: effective in most cats; they may be used to prevent sudden and severe dermatological symptoms.
 - Triamcinolone at a dose of 0.18 mg/kg SID,
 - Methylprednisolone at a dose of 1.4-1.5 mg/kg SID or 0.77 mg/kg BID,
 - Prednisolone at a dose of 1 mg/kg SID.
- Topical glucocorticoids: effective in local dermatological lesions and when used in combination with medications from the other therapeutic groups.
 - 0.0584% hydrocortisone aceponate (off-label use, OLU).
- Cyclosporine: effective in chronic skin lesions; due to a delayed effect, it should not be used in the management of acute lesions; it may cause gastrointestinal problems.
 - Cyclosporine at a dose of 7 mg/kg SID.
- Oclacitinib: effective in acute and chronic lesions without associated severe skin inflammation.
 - Oclacitinib at a dose of 1 mg/kg SID (OLU).
- Oral antihistamines: depending on the active substance, their efficacy varies between 40 and 70%; they may be used to treat chronic or uncomplicated acute lesions.
 - Chlorpheniramine at a dose of 2 mg/cat BID (OLU),
 - Clemastine at a dose of 0.34 mg/cat SID or in 2 divided doses (OLU).
- Unsaturated fatty acids: during treatments with antiallergic and antipruritic medications, they can be used as an adjunctive therapy; insufficient efficacy data.
- Maropitant: it is not recommended, insufficient efficacy data.

Tab. 2. A list of dermatological symptoms and their possible causes.

Type of symptom	Possible causes
Dermatitis miliaris	<ul style="list-style-type: none"> • Fleas • Atopic allergic dermatitis • Food allergy • Dermatophytosis • Bacterial folliculitis • Otodectes cynotis • Cheyletiella sp. • Pemphigus foliaceus • Drug-induced reactions
Self-induced alopecia	<ul style="list-style-type: none"> • Fleas • Atopic allergic dermatitis • Food allergy • Demodex gatoi • Dermatophytosis • Cutaneous candidiasis • Behavioural disorders • FLUTD
Head and neck pruritus	<ul style="list-style-type: none"> • Fleas • Atopic allergic dermatitis • Food allergy • Demodex gatoi • Notoedres cati • Otodectes cynotis • Dermatophytosis • Pyoderma • Cutaneous candidiasis • Viral diseases • Skin tumours • Skin reactions induced by spot-on formulations • Drug-induced reactions • Pemphigus foliaceus • Primary hyperthyroidism
Eosinophylic granulomatous complex	<ul style="list-style-type: none"> • Fleas • Allergic flea dermatitis • Food allergy • Mycobacteriosis • Nocardiosis • Sporotrichosis • Viral diseases • Skin tumours • Deep pyodermas • Sterile granulomatous dermatitis

- Allergen-specific immunotherapy: diversified efficacy data in cats when used as the only therapeutic option; to be considered in combination with medications or as maintenance treatment.

2021;32: 26-e6
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