Skin lesions and distribution in the cat: lessons to be drawn

Favrot, C
INTRODUCTION
Skin semiology is principally based on the history and the observation of the skin lesions, especially primary ones. The cat is somewhat different and more complex because of its character and mode of life. Many owners, in example, are not able to assess whether their pet is pruritic or not and most of them do not know what it is doing during outside roamings. Additionally, most cats lick their skin lesions leading to prompt destruction of all primary lesions. Last but not least, reactions patterns (combinations of clinical signs or features) are very often observed in this species: These reactions patterns may unfortunately be associated to several causes and are never pathognomonic! For all these reasons, the work-up of the feline skin patients is usually based on the distribution pattern: In fact, the localization of the changes is more important than the lesions themselves!

PRIMARY LESIONS? WHICH ONES ??
The feline skin patients usually present with one or some of the following clinical signs: Alopecia, crusts, excoriations, and erosions. As most of the alopecia is actually self-induced, they cannot be regarded as primary lesions. In fact, all changes mentioned above are the consequence of the pruritus, the differential diagnosis of which is very extensive! The observation of true primary lesions such as pustules, bullae or vesicles in the cat is rare. Interestingly however, pustules are very specific in this species and are observed in most cases in association with pemphigus foliaceus. The term miliary dermatitis refers to the presence of numerous small crusty papules, usually affecting the trunk but sometimes more widespread. These very typical lesions should be regarded as a reaction pattern. In fact, although very often associated with fleas, they are also observed sometimes in cats with hypersensitivities, ectoparasites (cheyletiellosis, demodicosis) or dermatophytosis. After recognizing this pattern, one should consequently look for parasites and fungi and carry out an appropriate flea control. After ruling out these conditions an allergy work-up should be conducted. Because of their typical localization or morphology, the diagnosis of eosinophilic dermatitis is usually easy (see below). Ventral eosinophilic plaques in example, present as elevated, oozing, reddish, sometimes rather large and coalescing lesions on the abdomen. The main differential diagnoses are skin tumours such as cutaneous lymphomas, mast cell tumours or mammary tumour metastases. One should consequently first rule out the latter hypotheses using cytological or histological examinations. Before performing any allergy work-up, antibacterial treatment is recommended because some of these lesions respond to antibiotics. Allergy work-up is not always conclusive and some cases remain idiopathic: in such cases, symptomatic treatment with glucocorticoids or cyclosporine is indicated.

WHEN LOCALIZATION SUGGESTS THE DIAGNOSIS...
As mentioned above, the localization of the changes often reveals the cause of these changes in the cat. An excellent example is the so-called eosinophilic ulcer, which always develop in the upper lip, near the philtrum and usually present as a deep but painless ulceration. Although this lesion is very typical, one should exclude squamous cell carcinomas, as well as bacterial or fungal granulomas. When the diagnosis is confirmed, one should explore all hypersensitivity causes (fleas, food, environment), although food intolerances are the main cause of these changes. Another example is the linear granuloma (also belongs to the same eosinophilic complex) which develops as a firm and vertical lesion in the rear aspect of the thighs. Such lesions are almost always associated with hypersensitivity disorders.

Flanks and abdomen are often affected by so-called symmetrical self-induced alopecias. These lesions are not alopecia sensu stricto because they are caused by the licking and consist of broken hairs. It is worth noticing that not all owners identify these lesions as a consequence of a pathological licking. It is consequently always mandatory to begin the clinical examination of feline patients with alopecia by an examination of the hair tips. Broken hair tips should be interpreted as a consequence of the pruritus and prompt a thorough work-up leading the veterinarian to rule out successively ectoparasites, fungi and hypersensitivity disorders. In some rare cases, these changes are associated with psychogenic disorders.
The chin is also frequently affected in felines and two major etiologies cause these changes. Swollen and erythematous chin usually correspond to the diagnosis “fat chin”, which is also an eosinophilic dermatitis while comedones, oozing and crusts are the hallmarks of the so-called feline acne. Non traumatic claw bed changes are rather rare in cats. When multiple toes are affected, one should consider fungal and bacterial infection, although two other hypotheses should be considered first: Pemphigus foliaceus is a major cause of purulent changes in this localization and is often associated with lesions occurring on the face, pinnae and around the nipples. Last but not least, metastases of bronchial carcinomas occur sometimes in toes and present as swollen and extremely painful claw beds. In such occurrence, radiographs should be performed to confirm the presence of the primary tumour in the lungs.  

HEAD AND NECK: TRICKY LOCALIZATIONS! 
Head and/or neck are often affected in the feline skin patient. Unfortunately primary lesions are virtually always absent. Changes in these areas should prompt a thorough and systematic work-up because numerous causes may induce changes in these parts of the body and may require very different treatment. 
Although hypersensitivity disorders (food, environment, fleas) are the main cause of skin changes in these localizations, such diagnoses should only be made when all other differentials have been ruled out. 
In fact, one should keep in mind that one of the main differentials are the viral dermatoses (herpes, calici, pox, FeLV) and that the treatment of affected cats with glucocorticoids or immunomodulators may be fatal in some cases! One should consequently record carefully in the history and clinical examination information suggesting viral diseases before to exclude these hypotheses. History of sneezing and/or conjunctivitis could suggest herpes or calicivirus and PCR should be carried out in such cats. On the other hand, outdoor cats living in the countryside in close contact with ruminants may be affected by cowpox infections. In some cases, FeLV serology should be performed as well. Ectoparasites are also a frequent cause of facial lesions. Demodex (often under-diagnosed in feline), Otodectes (may cause lesions outside of the ear canal) and Notoedres should be considered. Microsporum and Trichophyton (dermatophytes) cause frequently skin changes in the face (and feet) and fungal culture is compulsory, especially in outdoor cats or individuals living in catteries. Skin tumours are also not rare in the face of elderly cats. One should consider Bowenoid in situ carcinomas and squamous cell carcinomas. Last but not least auto-immune conditions, such as pemphigus or lupus, often develop in these areas. 
A thorough and systematic work-up is compulsory when face and/or neck are affected. One should begin with several skin scrapings to rule out ectoparasites and examination for fungi (trichogramme, wood’s lamp, fungal culture). One has already mentioned that PCR should be carried out when viral disease are considered. In elderly or white coloured cats, skin biopsy for histological examination should be performed to exclude skin tumours. Histological examinations are also recommended when auto-immune diseases are on the differentials list, although cytological examination is a powerful tool for the diagnosis of pemphigus foliaceus. As soon as all these conditions have been ruled out, one should begin with the allergy work-up. An adequate flea control must be made to rule out flea infestation or hypersensitivity and elimination diet would be helpful to determine the role of foods in the development of the disease. In some cases, allergy tests such as intradermal or serological testing may be helpful to identify offending environmental allergens. 

THE CAT IS NOT A SMALL DOG… 
In dermatology, one should avoid to see the cat as a small dog. The distribution of the lesions is a major clue for the diagnosis of skin changes in feline patients. One should also try to identify the main reaction pattern and to consider all diagnostic hypotheses usually associated with this pattern. 

REFERENCES

