FELINE MILIARY DERMATITIS

Feline miliary dermatitis is not a diagnosis. It is a description of the most common (in the author's series of cases) cutaneous reaction pattern seen in the cat.

The other main cutaneous reaction patterns are symmetrical alopecia, head and neck pruritus, eosinophilic granuloma complex, consisting of indolent ulcer, eosinophilic granuloma, and eosinophilic plaque.

This dermatology brief will concentrate on those measures that can help arrive at a specific diagnosis for the underlying cause of miliary dermatitis. Treatment is not covered in detail but is well described in the references and suggested reading at the end.

In miliary dermatitis the lesions are scattered, like millet seed (Figures 1 and 2), and the term miliary is derived from the Latin for millet. This cutaneous reaction pattern was perhaps the first to be recognised in the cat.

Initially it was thought to occur in cats fed solely on fish, earning the term “fish eater's skin”. Mention of this is made by Joshua (1965), although she was quick to point out that many cats that eat fish are completely unaffected.

At this time miliary dermatitis was thought to be a non-parasitic disease with possible aetiologies including hormonal problems, diet, especially biotin deficiency, and non-specific hypersensitivity reactions.

In 1953, however, Jennings had proposed that flea allergy was the main cause but it was to be some time before this gained credence, mainly due to the fact that fleas were always difficult to find in these cases. In spite of the early doubts surrounding the cause, Joshua's description of the lesions in her textbook is excellent and relevant today.

Clinical signs (after Joshua, 1965)
- Lesions are papular in nature, sometimes with a pin-point scours or pustular oozing, or more commonly capped by a small scale.
- The number of lesions is variable from a few to innumerable.
- The commonest site is the skin of the dorsum, particularly just above the base of the tail.
- Occasionally the only area affected is the underside of the chin and the ventral neck.
- In severe cases the whole body may be affected and the lesions are easily palpated.
- Licking and nibbling is a constant feature representing the response to pruritus.
- Alopecia and excoriation may develop.

There may be more than one cutaneous reaction pattern on the same animal with fleabite hypersensitivity. A curious phenomenon noted by the author is that perusal of the clinical records demonstrates different manifestations of fleabite hypersensitivity in previous years. Reviewing the clinical records of previous years is often very helpful in pointing to the diagnosis.

Differential diagnosis
Fleabite hypersensitivity – in those areas where fleas occur this is the most important cause of miliary dermatitis. In 1985 Thoday stated that “while miliary dermatitis is certainly a multifactorial condition, discussion of its aetiology is needlessly controversial. In most cases it results from reaction to fleas, and it responds to comprehensive flea control measures without other treatment”. In the last 30 years more causes of miliary dermatitis have been described in areas where it is too cold for fleas to survive and these need to be considered in those cats that do not respond to a comprehensive parasite control programme.

They include (Miller, Campbell and Griffin, 2013):
- Atopy
- Food hypersensitivity
- Drug reaction
- Intestinal parasitic hypersensitivity
- Pemphigus foliaceus
- Feline hypersensitivity syndrome
- Cushingidiosis
- Otodectic mange
- Trombiculosis
- Pediculosis
- Dermatophytosis
- Staphylococcal folliculitis
- Biotin and fatty acid deficiency

Many of these differentials involve hypersensitivity. This results in pruritus, which induces licking and rubbing, making it particularly difficult to identify parasitic causes.

Approach to the case and clinical management
All cases should receive comprehensive parasite control, especially for fleas, in areas where they are prevalent. This may involve the use of any number of licensed spot-ons, sprays or tablets. It is useful to select products with a rapid knock-down effect, thus reducing the number of allergy producing bites, and which will eliminate other parasites listed in the differential diagnosis. Several products together may need to be used initially. Assessment of the client's ability to comply with the treatment is important and reminders and/or the use of nurse clinics can be invaluable.

Atopy is a common cause. In the winter, especially late summer and early autumn in the south of England, fleas are ubiquitous outside and currently available products do not prevent biting. In many cases therefore short-term glucocorticoids or cyclosporine may be necessary to control signs. These can be discontinued with the advent of colder weather. It is advisable to continue parasite control all year round. Those cases caused by fleas should require no further treatment in the winter months if flea control has been comprehensive. Further investigation of unresponsive cases may include:
- Cytology: This is the most useful initial diagnostic test and may help identify those cases with a bacterial, fungal or parasitic component. A three-week course of antibiotics such as cephalaxin or clavulanate potentiated amoxicillin is often effective for staphylocooccal folliculitis. Cytology sometimes suggests dermatophyte or bacterial causes by identifying infected hairs. Culture will confirm this differential. Cytology also often diagnoses pemphigus foliaceus by demonstrating acantholytic cells prompting biopsy of lesions.
- Usually in these cases there is notable crusting of the pinnae, bridge of the nose and footpads, however, making this differential less often confused as a cause of miliary dermatitis. Biopsy, apart from with suspected autoimmune disease, is not very useful in miliary dermatitis. The pathologist will usually report that the lesions are compatible with miliary dermatitis, although differentials are often mentioned and these may help formulate further investigations.
- Haematology profile. Eosinophilia may suggest hypersensitivity or identify the rare case of hypersensitivity syndrome.
- Following implementation of the above investigations and treatment, this will narrow down those cases requiring life-long therapy, with a diagnostic justification. Symptomatic therapy with anti-inflammatory drugs risks unnecessary side-effects in cats that do not need lengthy therapy.

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Figure 1. Miliary dermatitis lesions in the dorsal gluteal region of a three-year-old male British shorthaired cat. These lesions were easily palpable and existed along most of the dorsum. The diagnosis was fleabite hypersensitivity, which need occupy a few weeks only, an investigation into food hypersensitivity is the next logical step. For details see Paterson (2008).
- Biotin used to be the main therapy in the 1960s but is less often used now and it seems unlikely with modern commercial diets that a deficiency could arise. The same applies to essential fatty acids but they continue along with biotin to be listed in the differential diagnosis in most veterinary texts. Adjustments to diet, apart from food hypersensitivity cases, is rarely necessary and no cases of biotin or essential fatty acid deficiency were diagnosed in the author's series.
- Atopy is the default diagnosis following a negative food trial. Atopy can be controlled but not cured by low dose anti-inflammatory drugs such as cyclosporine or glucocorticoids.
- Hypersensitisation is an alternative with a reported success rate of between 60 and 78% in feline atopic patients (Miller, Campbell and Griffin, 2013).

Summary
It is worthwhile investing time in diagnosing a specific underlying cause for miliary dermatitis. This will narrow down those cases requiring life-long therapy, with a diagnostic justification. Symptomatic therapy with anti-inflammatory drugs risks unnecessary side-effects in cats that do not need lengthy therapy.

Figure 2. Miliary dermatitis lesions on the ventral abdomen of a five-year-old white female cat. The lesions were seasonal, occurring in the spring each year, and responded to two months of oral glucocorticoids. Flea control was exemplary and the diagnosis was atopy.