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## **IS THIS ANIMAL ALLERGIC OR NEUROTIC?**

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An itch (pruritis) is a sensation felt on an area of skin that makes an animal want to scratch this area. Pruritus is a clinical sign and not a diagnosis or specific disease. In general, the most common causes of pruritus are parasites, infections, allergic skin diseases, and miscellaneous causes (eg, cutaneous neoplasia). Many diseases that are nonpruritic (eg, endocrinopathies) become pruritic when the patient develops secondary bacterial or yeast infections. The physiological sensation of pruritus may share common biochemical origins with some anxiety states, which support consideration of neuropsychodermatological etiologies (Shanley, 1988).

Evaluation of patients that present with dermatological conditions with suspected psychogenic components or origins should incorporate not only a broad-based medical work-up but also a careful review of the behavioural history and direct observation of the patient. A videotape of the patient exhibiting any relevant problem behaviours recorded by the owner can provide valuable clues. Many of these conditions are anxiety related.

In dogs and cats, obsessive-compulsive disorders include stereotypies and self-directed behaviours. These are defined as constant and repetitive in form, appear to serve no obvious purpose, and interfere with the animal's normal functioning.

They are often derived from otherwise normal behaviours like grooming, eating or walking but are abnormal in that they are excessive in duration, frequency or intensity in the context in which they are performed.

It is important to recognise that stress is thought to play a key role in the development of many anxiety related conditions.

### **Case one**

A six year old female neutered Labrador is presented with a long history of dermatitis. The dog itches everywhere, she has previously undergone an extensive workup for pruritus with a food elimination diet (home cooked), a flea control trial (on animal and environmental with very good owner compliance) and a scabies treatment trial. She develops secondary yeast and bacterial dermatitis and otitis and this is well controlled with weekly ear cleaners and shampoo therapy. She has undergone allergen specific immunotherapy and is currently still receiving the maintenance dose of one cc every 3 weeks (modification of doses and frequencies has not shown any clinical improvement) WITH additional symptomatic therapy and now has a 70% improvement in her overall pruritus levels. She has been "clinically stabilized" now for over 6 months BUT she is STILL working on the tops of her paws and somewhat at the interdigital spaces and she will have frantic periods where she digs at herself and creates a mini "Hot spot". This is then

treated as it arises by the owners with topical therapy. To prevent her licking her feet to bleeding she must wear socks and be additionally treated with low dose prednisolone.

### **Dermatology Assessment**

Atopy is a diagnosis established by eliminating all other causes of pruritus. This dog has had a thorough initial work-up and we were happy with the diagnosis. The response rate is also acceptable. However it is not as good as the owners wish. At this point in time after she has been "stable" and on symptomatic - albeit very intensive therapy for the past 6 months. It is most likely, based on the law of percentages, that she is simply an atopic which is difficult to manage. However, we do need to perform some more clinical rule-outs.

The possibility of demodex must be excluded, as this dog has been on low dose prednisolone therapy. A new and concurrent dermatophytosis may be possible. Even rare cases of mycosis fungoides have been observed, appearing in areas of chronic allergy. Additionally, a superficial cytology to establish the presence of a secondary bacterial or malassezia infection is always indicated. If an infection (microbial or demodex) IS present, then we also need to consider the possibility of a concurrent spontaneous endocrinopathy and not just iatrogenic cushings.

Once we have exhausted ALL other possibilities and are left with a diagnosis of atopy which is not completely controlled, there are few other therapeutic options. We can experiment with different combinations of antihistamines, frequencies of moisturizer and fatty acid supplementations, continue to check on flea control (which may raise the pruritic threshold) or move on to cyclosporine, which in this dog was not a price option.

### **Behavioural Assessment**

As the dermatological conditions have been eliminated/managed then behavioural issues need to be considered. As the dog has been "pruritic" for a period of time it is likely that a number of behavioural have occurred. The dog has learnt that licking/biting at her paws gives her some relief from the itching. Thus the behaviour is self – reinforcing as it "feels good". Secondly it is very likely that the owners have also paid her attention ("No", "stop it") so the behaviour has also, perhaps inadvertently, been reinforced by her owners. There is also very likely to be an anxiety component to this case.

This dog will benefit from a behaviour modification programme. The owner should keep a diary of when the dog performs this behaviour. This allows the owner to see the potential triggers. The dog should be taught to be calm/ relax on cue. There should be no punishment (attention) used when the dog pays attention to its paws. Teaching alternative behaviours will be necessary and the dog rewarded when it is calm and relaxed. Using a tricyclic antidepressant such as doxepin, or a selective serotonin re-uptake inhibitor such as fluoxetine

may assist to decrease not only the anxiety but also some of the pruritis and enhance learning.

## **Case Two**

A 5 year old female neutered Terrier cross with a long history of recurrent acral lick granuloma lesion and no other symptoms of dermatitis, otitis or systemic illness is presented. This was completely excised and a biopsy diagnosis of Folliculitis and Furunculosis with no demodex mites or dermatophytes was obtained. Radiographs revealed normal underlying joint and bone. The dog was treated with 6 weeks of an antibiotic based on a deep tissue culture and sensitivity taken at the time of the biopsy. The post surgical healing was absolutely problem free, but after 4 weeks of therapy, the dog started a new lesion adjacent to the surgical line. She has now been wearing an e-collar for 3 months, but she manages to get her tongue around it and the owners take it off when she is under supervision. During that 3 months, she was treated for 4 weeks with clomipramine with good results, but the owners discontinued the tablets and she has again relapsed. The lesion has the classic appearance of a plaque with a dished out central ulcer and raised peripheral margins.

## **Dermatology assessment**

A primary cause leads to licking, which in turn causes epidermal erosion and sensory nerve exposure that provides a continued lick stimulus and thus a perpetual itch-lick cycle. Although it would seem that she has already undergone a thorough investigation for a predisposing cause, we will need to repeat some of these tests. Primary or perpetuating causes include boredom, psychogenic stress, bacterial infection, fungal infections, allergies, foreign body reactions (to deeply embedded hairs free in the dermis), fractures, arthritis, neuropathies, etc.

A repeat biopsy is indicated to establish whether a furunculosis is again present. Without complete resolution of the furunculosis, the chronic foreign body reaction will continue to act as the trigger for the self trauma. A cytology and possibly a repeat fungal and bacterial culture are also indicated. Although uncommon, it is possible for a dog to develop a solitary lick granuloma as a result of atopy / food allergy, it is more typical that they present with multiple lesions. Seasonal recurrence gives a good clue for pollen or insect associated lesions. An elimination diet is indicated.

With a single lesion, if no allergic cause is identified, symptomatic therapy - without behavioural modification - would include bandages, E-collars, Heet & Bitter Apple (1:2) q8-12h topically, long term antibiotic therapy and / or topical glucocorticoids.

## **Behavioural Assessment**

All animals prescribed psychotropic medications should have complete blood work prior to medication and a behaviour modification plan for the owner to

follow concurrently with medication. As the dog responded well to clomipramine it would be important to know why the owner discontinued medication (cost? side effects? etc). It may be difficult to get the dog to respond as well to this medication the second time, if the medication was abruptly discontinued. The owner should keep a diary of when the licking was most likely to occur to assess for potential triggers. Teaching the dog to relax/calm on cue with a visual (a mat) and olfactory cue (scent on the mat) will be helpful. Having a routine to decrease anxiety (often part of the issue with these problems) will be important. Restarting clomipramine (for a minimum of 6 months if the dog responds) may be necessary or fluoxetine may be another option.

### **Case Three**

A 4 year old male desexed Siamese cat was presented for a non-inflammatory alopecia on the neck and shoulder area. He has been managed for a chronic (2 years duration) tail-dermatitis. This was a recurrent superficial moist pyoderma on the tail tip, which was difficult to control. Antibiotics helped but did not completely resolve the problem. Since prescribing Medroxyprogesterone acetate at 5mg once a week - which started 12 months ago - the cat has been symptom free. There is a companion cat with no lesions.

The referring veterinarian began to take a sample of blood, during the venepuncture process the cat struggled and a large tear on the ventral neck occurred.

### **Dermatologic assessment**

Tests are needed to establish whether this cat has spontaneous or iatrogenic hyperadrenocorticism. Skin fragility syndrome in cats is most frequently associated with hyperadrenocorticism and particularly with iatrogenic cushings. Medroxyprogesterone acetate at a dose of once a week has been reported to be associated with skin fragility, although it is more commonly associated with the development of diabetes mellitus.

Alopecia is the most common sign in cats (88% of cases) with spontaneous hyperadrenocorticism, it occurs predominantly on the ventral abdomen. Thin skin, skin fragility, abscessation and a characteristic medial curling of the tips of the pinnae are other frequently observed dermatological signs.

As many cats with hyperadrenocorticism have concurrent diabetes mellitus and/or cortisol-induced insulin resistance, he should also be tested for diabetes mellitus. Alkaline phosphatase levels are not elevated in the cat.

The low dose dexamethasone test in cats is not reliable. Some cats with nonadrenal illness and severe stress may not suppress, particularly at 3 or 4 hours, leading to a curve similar to that in pituitary-dependent hyperadrenocorticism and thus false-positive results.

The ACTH stimulation test is not only the test of choice for spontaneous hyperadrenocorticism in the cat, but is also the test of choice to establish a diagnosis of iatrogenic cushings (in both cats and dogs).

For cats, the test is different to dogs. Samples are taken before and 90 minutes after the IM injection of ACTH-gel (2U/kg). Samples should be spun and frozen if they can't be shipped on the day of sampling.

The management of the fragile skin requires the withdrawal of the Medroxyprogesterone acetate, wound closure surgery and months of careful nursing care.

### **Behavioural Assessment**

Medroxyprogesterone acetate is not recommended as a treatment option for behaviour problems. There are alternative medications that address the underlying causes for the behavioural signs. The owners should keep a diary to determine when the cat licks and a video tape of the cat and a routine day in the cat's life is helpful. The relationship with the companion cat should also be investigated as although outright fighting has not been seen covert aggression may be the cause of the anxiety. Having a set routine for this cat would be helpful. The cat should never be punished for licking as that may exacerbate the problem. A Feliway diffuser (synthetic pheromone analogue) in the house will help decrease anxiety. Fluoxetine may be helpful in this case and the use of a benzodiazepine prn provided complete blood work is normal may also be necessary.