Feline Psycogenic Alopecia And Behavioural Disorders

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Feline Symmetrical Non Inflammatory Alopecia is, after "miliary dermatitis", the most common cutaneous reaction pattern. Until around 1970 the term "Feline endocrine alopecia" covered all types of alopecia. Then, a second differential diagnosis was added "Feline psychogenic alopecia". The aetiology of "Feline Symmetric Non-inflammatory Alopecia" is clearly multifactorial and the differential diagnosis for Feline Symmetrical Non-inflammatory Alopecia is now lengthy and complicated. Almost all of the cats removing their own hair have an allergic complaint (flea bite hypersensitivity, inhalant or food allergy). Other causes include dermatophytosis, demodecosis, cheyletiella dermatitis, and rarely an endocrine factor. Hence, the initial terminology for psychogenic alopecia is no longer appropriate as other non-psychogenic aetiologies are causative. As this type of dermatitis can be caused by behavioural disorders, it can be termed Feline Psychogenic Alopecia.

Clinical Features
- Dermatological features
  - Macroscopically
  Pruritus can be manifested by licking, chewing, or scratching the skin and can be localised or generalised. Cats can be observed licking vigorously at particular zones which, because the tongue is raspy, after prolonged licking and scratching of local skin the area, can become chronically inflamed. This is characterised by a red oval plaque or red streak. This dermatitic form may be considered the feline equivalent of Acral Dermatitis in dog. The lick granuloma appears most commonly on the lower abdomen behind the umbilicus or as a granuloma on the thigh. Animals with chronic cases develop lichenification and hyperpigmentation. The cat licks less vigorously, but on large surfaces of it’s skin such as the inside of the thigh, the posterior ventral abdomen, the centre of the back, flanks, the limbs and the tail. Symmetrical hair loss (alopecia) without other cutaneous changes can be observed. Sometimes the hair just becomes shorter. In some affected cats, multiple areas of alopecia can become confluent and involve the entire trunk. The skin in other areas is completely normal. The course of the condition is long and progresses slowly, and can sometimes remain static for months. 70% of the cats have lesions on the nails (onychophagia).

  Automutilation of the tail (tail-biting). Some cats chew, lick or bite their tail which can be characterised by alopecia or shorter hair.

  Individual cats can display all the above mentioned symptoms.

  Particular cases Wool sucking syndrome and toy’s cat syndrome). In these syndromes lesions can be observed on the skin.

  During the clinical examination we, sometimes, also note:
  -pads are wet (this is correlated with state of permanent anxiety)
  -some cats drool enormously

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Tachycardia and polypnea are sometimes also noted. Some cats are obese due to a displacement activity, not an organic cause, as part of a permanent anxiety or the early stages of dysthymia.

Microscopically

A helpful technique (trichogramm) for differentiating between self-induced hair loss and spontaneous alopecia is the epilation and microscopic examination of hair from the affected areas. During a dermatologic examination, the veterinarian should evaluate the ease of hair epilation, the amount of broken hairs and evidence of skin involvement. Small clusters of hair are epilated, aligned in mineral oil and examined microscopically. Then, 3 areas of these hairs are critically examined. The distal (external) end, the proximal (internal) end and the shaft. In psychogenic alopecia hairs do not epilate easily and the hair from cats who are overgrooming have irregularly fractured distal ends (hair with jagged, blunt ends), but the other parts of the structure of the hair is normal (hair insertion and root sheath). But this is not indicative of psychogenic alopecia as other disorders such as hypersensitivity dermatitis, demodecisis, cheyletiella and endocrine skin complaints like hyperthyroidism or some drug intoxication, show similar symptoms.

Skin biopsies

They show normal skin in the majority of cases, though often with an abundance of anagen hair follicles.

Epidemiology

Feline Symmetrical Non-inflammatory Alopecia is often observed, but Psychogenic Feline Alopecia is rarely noted. Siamese or cross-Siamese, Burmese, Abyssinian and Himalayans cats seem to be more predisposed to the latter, but it has also been noted in non pedigree European shorthaired cats. There is no sex predisposition and unlike the dog, there is no preferential localisation.

At the time of the consultation, the dermatologist can propose a certain number of hypotheses. The dermatitic lesions may be confused with indolent ulcers, eosinophilic plaques, eosinophilic granulomas with atrophy, food or flea hypersensitivity, demodecisis, dermatophytosis, more rarely with endocrine skin complaints. Supplementary examinations do not allow the vet to conclusively diagnose the condition and hence proposes a psychogenic disorder. However, with the aid of direct observation of the cat, background information from the owner and specialist dermatological advice with respect to the location and aspect of the lesions, we may begin to suspect Feline Psychogenic Alopecia. It is then necessary to ask a series of more in depth questions directed towards behavioural disorders. In this way, it will be possible to more accurately diagnose psychogenic dermatitis. This will have implications for the therapy programme initiated with the option of using psychotropic drugs to restore the cognitive and emotional balance of the cat, thus facilitating the use of behavioural therapies.

Behavioural disorders

Behaviours can be altered during emotional states and behaviours that are linked to elementary functions which allow the animal to adapt to the environment in which it lives can be altered. Some behaviours are inhibited and others increase during emotional perturbation. Some correspond to displacement activities, such as feeding, drinking and grooming.
Food disorders:
* increase (bulimia, overeating, excessive food intake): in this case it is a displacement activity in a permanent anxiety. Displacement activities decrease the emotional tension state.
* decrease (anorexia) in acute depression state.
* fluctuations of the appetite (alternation of bulimia and anorexia can be noted in classic state of bipolar dysthymia).

Drinking disorders:
One can observe a decrease (acute depression) associated or not with a decrease in feeding or an increase alone (displacement activities), or fluctuations of the drinking in dysthymia.

Others behaviours are altered such as:
Sleep: sleep is influenced by the emotional state of the animal. We can note: hypersomnia in acute depression, fluctuations of sleeping, insomnia and hypersomnia in dysthymia.

Interactions with the owners (social skills) or with others animals. In a state of permanent anxiety, social skills are inhibited. Activities of play disappear rapidly with the owners or others animals.

Scanning behaviour: it will be altered in all situations. The absence or the decrease is noted during state of permanent anxiety. The cat will have a tendency to remain prostrated. When an abrupt movement occurs around it, it escapes and will then lick itself. Some cats remain in the same place for many hours and will not venture out. The complete inhibition of scanning behaviour is a spectacular phenomenon, because the apathy is marked. We can find this in acute depression. On the other hand the scanning behaviour is increased and in some cases, the cat has an exaggerated locomotive activity. The cat is hyperactive and hypervigilant.

Aggressive behaviour: Aggressive behaviours in cats are reported in dysthymia. The cat looks fierce, the pupils are dilated and the eyes appear to change colour, after which the cat attacks suddenly and bites viciously.

Elimination behaviour (house-soiling): inappropriate elimination behaviour is a common behavioural problem in permanent anxiety. The cat eliminates out of the litter box. In acute depression, the cat could sleep in the litter box and eliminate under itself.

Grooming behaviour: the cat is an obsessive cleaner and this behaviour can account for 30 to 50% of its activity. The feline grooming behaviour is an important act. A normal sequence of licking includes 3 stages. The first stage is called appetitive stage or phase. In this stage the cat has a tendency to sniff areas of its body, then a particular area. This stage corresponds to an increase in tension. The second phase corresponds to the consumption of the food, during which the cat nibbles and licks. At the third stage, the animal returns to a state of balance (equilibrium) characterised by a refractory period (rest phase). Physiologically, all cats from time to time will display displacement activities in situations of fear, in contradictory situations, during stress and emotional perturbation. It is the persistence, or at least the excessive frequency of the former that will be pathological. The grooming behaviour is a fragile behaviour that is rapidly altered during stress and in emotional perturbation. The excessive licking decreases in the emotional tension state, but is observed in state of permanent anxiety (displacement activities) and more rarely in acute depression and also in dysthymia.
Dermatological Disorders Linked With Permanent Anxiety

Clinically, we note, inhibition of scanning behaviour, displacement activities such as excessive licking or grooming, polyphagia or polydipsia, inappropriate elimination behaviour, loss of social skills. The causes of permanent anxiety are numerous, such as cats that have developed in a poor environment and not adaptable and just being enclosed in a closed environment provokes a state of permanent anxiety. Addition or loss of a family member or another animal, variations in the environment such as new house, new carpet, new furniture can also be causes. A cat has a territory in which it deposits a certain number of odours (marking communication). Thus, if a move etc occurs the cat can no longer finds its marking communication. The causes could be also, a cat in the same area (via the odour) or on the outside of the area, an altered work schedule of the owner change in routine, continued exposure to high frequency sounds like those from televisions or babies, an ill or convalescing cat, too many cats in the same house (crowding).

- Particular cases.
  * Toy's cat syndrome: this syndrome corresponds to animals that are continually manipulated by owners, especially by children. They try to dress cats as dolls. These cats are not left alone at all even when asleep. At the beginning the cat doesn't eat or clean itself, its anal glands become inflamed, then it develops a permanent anxiety with displacement activities such as licking or biting his nails, then chronic diarrhoea appears and a depression state follows. When the cat can't escape he will attack to defend himself.
  * Wool sucking or wool chewing syndrome: some cats suck when they are adults, and preferably suck wool or clothes impregnated with the odour of the owner, but also other textiles. This wool-sucking behaviour can progress to eating wool and many other materials, including carpet and rubber door mats. In most cases the material is not ingested, just mutilated. If ingested gastro-intestinal upsets and obstructions can occur and may require surgical intervention. These cats may have development disorders (orphans or early-weaned kittens), or a cat with too few meals per day (2 or 3), or diet with low levels of protein. We note wool sucking syndrome in siamese or mixed breed Siamese (genetic transfer?).

Dermatological Disorders Linked With Dysthymia

This syndrome is characterised by unpredictable fluctuations of the thymic state. The cat suddenly becomes agitated (overactivity) for no apparent reason, flicks the head, licks compulsively or bites the tail, makes sudden movements, runs, or freezes in a fixed body position for a few minutes. We can also note a rippling motion of the skin over the back, periodic unexplained states of agitation, and a glazed appearance of the eyes and dilated fixed pupils. Cats may appear to hallucinate visually, chase non-existing objects, repeatedly duck their head in response to an imaginary threatening object, or exhibit a fixed stare. Some cats may spontaneously begin to cry, to growl and to howl repeatedly for no apparent reason. We can observe rolling skin syndrome in some cats. The feline hyperesthesia syndrome (rolling skin syndrome): is exhibited by a cat suddenly raising a vertical tail with the skin over the dorsum appearing to roll. Then the cat howls and dashes away. A predisposition for dysthymia can be seen in Abyssinian cats. This syndrome alternates from the normal phase to an hyperactive phase with impulsiveness.
stereotypies, a reduction of the length of sleep, hyperesthesia, hyperexcitability, hypervigilance and restlessness, associated with irritation and aggression, loss of social skills, feeding and drinking disorders (unipolar dysthymia) or also associated with a state of depression (bipolar dysthymia). The cat may suddenly begin to attack and bite or lick their tail periodically. This is often accompanied by growling. Many cats growl aggressively in association with self-destructive behaviour such as excessive licking or tail biting (the cat suddenly starts grooming for a brief duration).

Dermatological Disorders Linked With Acute Depressive States

An acute depressive state begins more or less one week after an important stress. We observe a state of complete inhibition of motor pattern (loss of voluntary motor activity), inhibition of scanning behaviour. The cat doesn't eat or drink. The cat sleeps for the majority of the day. The cat sleeps in the litter and eliminates under himself. Social skills disappear: the cat doesn't respond to habitual stimuli even the stimuli of a game.

Neurotransmitters

It is important to be aware of the neurotransmitters implicated during a sequence of grooming in displacement activities, and during stereotypies in order to understand the treatment. During displacement activities, the licking stimulates the end of nervous fibres in the skin. These stimulations are transmitted to the brain via the noradrenergic system and in the brain the noradrenergic system stimulates the beta-endorphins system. They are a reinforcement of licking and their release in the brain decreases anxiety and watchfulness and the cat feels better. The release of endorphins decreases pain perception when the cat is licking himself, then the cat loses control of the licking and a lesion of the skin begins and then worsens. Some authors give the this name of "vicious circle of endorphins". There is also an interaction between enkephalinergic and dopaminergic systems in the brain, and the release of endorphins triggers dopamine release and enhances displacement activities. At this stage we can use drugs which act on noradrenergic system (at the beginning of displacement activities), on beta-endorphins system (possibly), on serotonin system (because release of serotonin can block the action of dopamine) or secondly on dopamine system (dopamine blockers). In stereotypies the neurotransmitters are different. During the evolution of untreated psychogenic alopecia, we note an increase of the licking sequence (in duration and in number of acts): the consummatory sequence is immediately followed by a new appetitive phase and a new sequence, then the licking sequence is simplified by decreasing the number of acts and spontaneous stopping: there is no more control and satiety of the displacement activities transform into stereotypies. Then the cat can't keep the control of the licking and the cat licks and licks without stopping. At this time there is a disorganisation of dopaminergic system where the displacement activities have become stereotypic activities. At this stage we can use drugs which act on dopaminergic system. The difference between displacement activities and stereotypies is very important to understand the subsequent choice of drugs.

Treatments

Topical medications are of little value since the cat immediately licks then off. Systemic treatments like tranquillisers, sedatives corticosteroids and progesterone-like
compounds are ineffective and dangerous because of the side-effects. Elizabethan collars are also ineffective. Removal of the collar allows a relapse. The treatment is based on behavioural therapies and drugs.

- Drugs: the drugs must have two properties: anxiolytic properties and to decrease the occurrence of displacement activities such as licking.

  * Narcotic antagonists

  Anxious cats with increased licking behaviour could be treated with naloxone. The administration of naloxone blocks the action of the endorphins and the licking can't allay the anxiety. Willense et al note that 4 of the 5 cats with psychogenic alopecia responded temporarily to the naloxone and it may be concluded that the opioid antagonist has a modulatory effect on stress-induced excessive grooming in cats. However, this drug is expensive and hence not often used.

  * Drugs that act on the noradrenergic system

  alpha-2-agonist, like clonidine is effective just at the beginning of the licking especially in the dog, but causes vomiting in cats.

  beta-blockers: they are effective for anxiety in man and it is possible to use this drug in treating a cat with anxiety. It is propranolol, 2.5 mg/kg BID. This drug acts by increasing the level of the threshold for licking, which decreases the probability of its appearance.

  * Benzodiazepines

  We can use benzodiazepines (chlordiazepoxide) 0.5 to 1 mg/kg BID, only when we note inflammatory lesions. Benzodiazepines have membrane receptors on the macrophages, (between 200 and 300,000 per macrophage). They will be administered only for the necessary time to reduce the inflammatory state of the skin. After some days it is necessary to stop this drug because it has the disadvantage of disorganising cognitive functions of the cat by altering its memory, and also acts on the appetite for food (bulimia).

  * Antidepressant drugs

  Tricyclic antidepressants drugs that are selective inhibitors of serotonin re-uptake such as clomipramine are useful in the treatment of anxiety, at the dose of 0.25 mg/kg BID. This drug regulates sleep, doesn't increase appetite, (don't use on a cat with anorexia ). This drug prevents the side-effect of house-soiling as it has anticholinergic properties. Tricyclic antidepressants should be avoided in patients with hepatic, renal or cardiac disease. With long-term usage of tricyclic antidepressants the phased withdrawal of the drug may be necessary.

  * Drugs that specifically interfere with dopaminergic system

  neuroleptics: they are without interest and have side-effects.

  * MAO-B: selegiline, 1 mg/kg SID in the morning. This drug increases transmission of dopaminergic system. When there is no longer any improvement with clomipramine, but an increasing frequency of licking. The use of this drug, when the licking becomes a stereotyped activity is very effective, as it is in dysthymia. There is also an improvement in the associated symptoms and the number of spontaneous interruptions.

  The duration of all these treatments fluctuates from 2 to 3/4 months, sometimes more, according to the development of the disorder.

  * Behavioural therapies

  It depends on the behavioural disorder but they are always needed.