Feather Picking in Psittacine Birds

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INTRODUCTION

Feather picking is a condition affecting many species of psittacine birds (*ie*. parrots and cockatoos) but especially those that are kept on their own in cages as household pets (Perry *et al*, 1991). The most commonly affected species are Amazon parrots, African greys, macaws and cockatoos (Levine, 1987) and the problem is characterised by a loss of feathers over the breast, flank and thigh regions with the presence of healthy head feathers which are inaccessible to the birds beak (Rosenthal, 1993).

Feather picking is a clinical manifestation of some underlying problem which the bird is experiencing rather than a disease entity in itself. Grooming (or preening) is a normal and essential behaviour among wild psittacine birds and an exaggeration of this behaviour during times of stress (called displacement behaviour) is what leads a bird to become a feather picker (Kennedy and Draper, 1991). The cause of this stress can be either physiologic or psychologic and thus presents the veterinarian with a challenging and often frustrating syndrome to deal with.

The aetiologies of feather picking include medical causes which seem to produce a source of pain or irritation to the bird that results in feather picking (Johnson-Delaney, 1992); such as parasitic infections, endocrine imbalances, allergies, infectious dermatitis/folliculitis, internal disease, malnutrition, systemic disease and neoplasia. The behavioural causes of feather picking are more common and include attention-seeking, boredom, environmental conditions and changes, and reproductive frustration to name but a few.

The treatment of feather picking therefore involves addressing the underlying nature of the condition and thus a thorough diagnostic work-up - involving detailed history taking, physical examination, use of diagnostic aids and possibly the use of therapeutic trials - is essential. Possible treatments include behavioural and environmental modification, drug or hormonal therapy, dietary manipulation and the use of physical means to prevent the bird from accessing its feathers.

CLINICAL PRESENTATION

A feather picking bird represents itself clinically by the presence of healthy head feathers and feather loss and/or mutilated feathers in body areas accessible to the bird's beak (Rosenthal, 1993). Feather loss due to picking can be regional or involve the whole body and typical feather picking sites include the propatagium (the web of skin that makes up the wing membrane), the inner thighs, the sternum and the dorsum. Feather loss on top of the head is unlikely due to feather picking. If feather loss on the head is observed, the bird may be rubbing the feathers off, another bird may be picking the feathers off, or a disease other than self-mutilation is causing the feather loss (*e.g*. Psittacine Beak and Feather Disease). Although the owner may complain that the bird is pruritic, few feather pickers are actually pruritic (Rosenthal, 1993).

Usually the owner will observe that the bird is picking and/or chewing its feathers and upon closer examination the flight feathers adjacent to alopecic areas may appear split and broken in an irregular yet characteristic fashion (Perry *et al*, 1991).

The skin of affected psittacine birds appears grossly normal with normal feather follicle activity (Levine, 1987) and often most of the down plumage in the affected areas is intact. Also, owners of feather picking birds

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frequently describe their pets as exhibiting signs of frustration, fear, inappropriate aggression and other behavioural patterns different from when they were "normal" (Johnson, 1987).

Davis (1991) states that the feather picking disorder seems to have no sex predilection but that most cases occur in mature birds over 7 to 11 months of age. The condition can be acute or chronic in onset and may last for months or years or even the lifetime of the bird (often regardless of treatment). Some feather pickers may spontaneously cease picking, allowing their plumage to regrow over about two months, only to resume picking again with some new stressful stimulus. In severe cases, birds may also go off their food and lose weight (Lawton, 1988).

Feather picking disorder has been recognised in many psittacine species, but it is unclear whether it is a phenomenon of captivity or if it also occurs in the same form in wild birds. Feather picking would most likely decrease survivability (due to exposure and flightlessness) and would probably be strongly selected against in the wild (Ramsay and Grindlinger, 1994).

AETIOLOGIES

As mentioned above, there are both behavioural and physiological causes of feather picking in psittacine birds and these are outlined below.

Behavioural Causes of Feather Picking

a) *Attention-getting device*: Many pet birds are bored and are competing with other things in the house for attention and feather picking is a great way of achieving this. Once the bird starts feather picking, a vicious cycle starts where the owner either yells at the bird or inspects the picked sites closely, and this encourages the bird to pick even more because it is receiving the attention it was craving.

b) *Boredom*: As a household pet, a bird may have little stimulation, especially during the day when most owners are at work. This leads to displacement behaviour which includes feather picking.

c) *Crowding*: Some birds feather pick as a displacement behaviour when they are crowded in a cage or aviary (Rosenthal, 1993). Cages which are too small for an individual bird may also lead to this behaviour.

d) *Dominance*: Frequently, dominant birds in a cage pick the feathers of those lower down the pecking-order and sometimes themselves also. This differs from the typical feather picking presentation in that the picked birds have feathers missing from their heads.

e) *Environmental change*: In the wild, birds have thousands of stimuli every day and live in structured social flocks which have their own rules and routines (Davis, 1991). Thus a lack of routine in the home environment may also contribute to feather picking. Any change in the local environment such as moving house, rearranging furniture, new people entering the household or a new pet can all precipitate this self-destructive behaviour. This and boredom are the most common causes of feather picking.

f) *Exaggerated preening*: Preening is a normal activity which involves cleaning and rearranging the feathers into place. Some feather pickers begin by overpreening and then progress to pulling the feathers out (Rosenthal, 1993).

g) *Nesting bird ready for clutch*: Some species of psittacine birds normally line the nest with feathers during the breeding season, while others pluck a bare patch on their abdomen which supposedly helps in regulating the incubation temperature of the clutch (Davis, 1991). The bird is designated a feather picker if this behaviour extends beyond the nesting period and it may be a manifestation of an exaggerated or frustrated courtship (Rosenthal, 1993).

h) *Poor wing clip*: A poor wing clip can lead to picking at the clip site especially if the feathers are frayed and uneven. This vice can then progress to generalised picking of the body feathers.

i) *Psychologic disturbances*: Any psychologic disturbance can cause feather picking and some of these include chronic stress, fear, and nervousness.

j) *Reproductive frustration*: Since pet birds do not routinely get neutered they still have all their sexual hormones present. In those birds that are kept alone there are no natural outlets for breeding instincts and so this energy is diverted into misplaced aggression which can result in feather picking during the breeding season.

k) *Territorial*: In multi-bird cages there can be territorial disputes (Johnson, 1987) which may lead to feather picking between cagemates or self feather picking as a displacement behaviour.

Physiological Causes of Feather Picking

All the medical causes of feather picking somehow result in pain or irritation of the birds skin which leads to feather pulling. Some of the mechanisms by which the skin becomes involved as a result of non-integumentary disease are unknown and they, plus other physiological causes of feather picking, are listed below.

a) *Allergies*: Allergies or hypersensitivities which present as a contact type dermatitis or result in a condition similar to atopy in dogs (Johnson-Delaney, 1992). These causes of feather picking are controversial because it is not yet known if birds develop allergies in the same way that mammals do.

b) *Ectoparasites*: Rarely do mites or lice cause feather picking in pet birds but Rosenthal (1993) showed one case of feather picking due to sarcoptic mange.

c) *Endoparasites*: The internal parasite most commonly associated with pruritic feather picking is giardia in cockatiels. These parasites may interfere with the absorption of fat-soluble vitamins, proteins, and essential fatty acids from the gut. Some authors have reported that roundworms and tapeworms are associated with avian feather picking.

d) *Endocrine imbalances*: Endocrine imbalances or deficiencies (thyroid, testosterone, and progestins) are rarely a cause of feather picking but they have been reported. These imbalances may predispose the skin to secondary fungal or bacterial infections which in turn can cause pruritus.

e) *Infectious dermatitis/folliculitis*: Skin and/or follicle infections can be pruritic and thus have the potential to result in feather picking. Birds can have bacterial or mycotic skin infections as a primary dermatalogic disease but it is uncommon and results of cultures and biopsies should be interpreted carefully as any primary cause of feather picking can be responsible for a secondary bacterial infection (Schmidt, 1993).

f) *Internal or systemic disease*: Any internal or metabolic disease could theoretically be a cause of feather picking but it appears to be a rare finding. Liver disease should always be pursued as a cause of feather picking (if none other can be found) because in man liver disease has a pruritic component. Some birds with psittacine beak and feather disease occasionally feather pick also (Rosenthal, 1993).

g) *Malnutrition*: This is still the predominant medical problem affecting pet birds (Perry *et al*, 1991). Malnutrition leads to alterations in the skin and feathers, which can lead to feather picking. Chronic nutritional deficiencies such as vitamin A, vitamin D_3, vitamin E and zinc deficiency can result in scaly skin and dull, ragged feathers which are prone to being picked (Johnson-Delaney, 1992).

h) *Neoplasia*: Feather picking is often observed over areas of skin tumours and may also be associated with a secondary paraneoplastic syndrome along with weight loss and anorexia (Levine, 1987).

DIAGNOSIS

The first step in obtaining a diagnosis of feather picking is to get a detailed history which includes things such as the age at which feather picking began, whether there have been any changes in the household, where on the body the picking started, and what came first - the picking or the feather loss. Things like the time of day the bird picks, whether there are any companion birds and whether they also pick, and the dietary history is also important. Other aspects of the history like cage size, owners lifestyle, and whether or not the bird was wild caught or hand-reared should also be considered.

A thorough physical examination is the next step towards a diagnosis and more often than not it is unremarkable as the vast majority of feather pickers have behavioural problems as their cause (Ross Perry, *pers comm*). The

feathers are examined for ectoparasites, evidence of chewing, discolouration, and mutilation, and the skin is examined for areas of damage, ulceration, flakiness, erythema, scabs, and folliculitis (Rosenthal, 1993). It is a good idea to record areas of feather loss (photographs are great) for comparison during later visits.

Various diagnostic aids are very useful in ruling out many of the physiologic causes of feather picking and if the owner is willing they should all ideally be done. This work-up should include a complete blood analysis (haematology and biochemistry +/- hormonal assays), radiographs to look for evidence of internal disease, faecal examination for parasites (Gram's stain, faecal flotation and direct examination), skin scrapings and microscopic feather examination for evidence of ectoparasites, feather and/or follicle culture and Gram's stain, and skin and feather follicle biopsies. If the results of these clinical tests yield no information about any underlying disease processes then the bird can be assumed to have a behavioural problem which is causing the feather picking (Davis, 1991). Further questioning of the owner at this point about the birds home environment can lead to a more specific diagnosis of a psychological abnormality - the so-called "psychogenic feather picker" (Iglauer and Rasim, 1993).

TREATMENT

Treatment of the feather picking bird is aimed at treating the underlying cause and therefore in cases where a physiological disease process can be identified, it is treated accordingly. For example the bird may require a diet with a higher plane of nutrition, hormonal therapy, antimicrobial therapy, parasitic control, surgery to remove a tumour, anti-inflammatory or anti-histamine therapy.

The initial treatment of all feather pickers (regardless of cause) should be to provide some sort of physical barrier to prevent the bird from doing further damage to itself, while the original cause of the feather picking can be investigated (Lawton, 1988). This also gives the bird's feathers a chance to grow back. Such devices include Elizabethan collars, body jackets and bandages, and one author (Bordnick *et al*, 1994) even suggests using beak grinding or notching (!). It must be noted that all of these methods serve only as an adjunct to therapy and that they are not a *cure* for the disorder. Elizabethan collars are the most commonly used devices and can be left in place for months to years (Walter Rosskopf, *pers comm*) in order to help control chronic intractable feather pickers. These collars should ideally be transparent so as not to disrupt the bird's vision and they should not interfere with eating or drinking. They are best applied under general anaesthesia and the bird should be hospitalised for a few days to allow it to adapt to the collar and to ensure that it is able to feed normally (Lawton, 1988). Some birds react badly in the first few days of wearing such a collar, and in these cases diazepam proves very useful (Walter Rosskopf, *pers comm*). Collars should be left *in situ* until all feathers have regrown, which is usually about two months. At this time, assuming the bird has been on concurrent medical therapy or behaviour modification, the E-collar can be removed and the bird monitored closely for signs of feather picking. Some birds are permanently cured but the majority resume feather picking at some later stage at which the E-collar should be reapplied. Rosskopf (*pers comm*) speaks of a case in which he treated a psychogenic feather picker for three years with an Elizabethan collar at which time it was removed without resumption of the habit!

If the diagnosis comes down to a psychological cause of feather picking (which it frequently does) then there are a number of steps that can be taken to help modify the birds behaviour back towards normality. Before such an undertaking it is important to inform the owner that there are no "quick fixes" to the problem and that it may take years to effect a cure and that indeed the bird may never be cured. Chronic feather pickers have a much poorer prognosis than those that have been caught at an early stage (Ryan, 1985).

The owner must try to give more attention to the bird, either directly or indirectly by moving the bird's cage to a busier part of the house such as the kitchen or lounge room. Boredom should be reduced to a minimum by spending more time with the bird and providing it with toys and chewable objects during times of absence. Variety is the key. Establish a daily routine for the bird and feed high quality food twice daily rather than *ad libitum*. Play with the bird regularly and let it out of the cage to roam the house if it is tame. Ensure the cage is of sufficient size for the bird to flap its wings unimpeded and provide a dark nesting box or "hide" to give the bird privacy and security if it so desires. Any other cagemates should be removed and given their own cage/territory unless they are part of an obvious pair bond. The introduction of a new bird as a mate is controversial as they may not bond properly and the new bird may learn to feather pick also (Perry *et al*, 1991). It is therefore better to err on the side of safety and keep the bird on its own.

The birds photo period should be adjusted to a more normal level of 8 to 12 hours per day as they are often subjected to as much as 18 hours of light a day in some rooms of the house (Lawton, 1988). This can be achieved by covering the cage at dusk and uncovering it at sunrise. Birds should also be allowed to bathe freely on a daily basis as this can help to stimulate *normal* preening behaviour in many species of parrots.

If the above suggestions do not alleviate the problem then behavioural modification through the use of psychotropic drugs can be tried as somewhat of a "last resort". Many drugs have been used with varying results including the tricyclic antidepressants (such as doxepin and clomipramine), tranquillisers (*e.g.* diazepam), neuroleptics (*e.g.* haloperidol, a dopamine antagonist), and opioid antagonists such as naltrexone hydrochloride (Trexan). These drugs are not without their drawbacks, and for further information on the details of some experimental treatment protocols please refer to the list of references, as their discussion is beyond the scope of this paper.

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