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CLINICAL APPROACH TO PRURITUS IN DOGS

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Pruritus is an unpleasant sensation that elicits the desire to scratch in humans. In fact, no one knows the actual sensation in dogs, so we just suspect pruritus from their behavior while grooming, scratching, licking, sucking, biting, and/or chewing. Those behaviors are induced by not only dermatologic factors, but also some non-dermatological disorders including paresthesia as well as psychogenic factors. In general, palpation can induce pruritic behaviors in dogs with dermatological and physical factors being associated with some sensation, but no reflex in dogs with psychogenic factors.

Pruritus is one of sensations in the normal skin. It could be divided into physical and pathological phenomena. Observation is generally recommended as a plan to confirm physical pruritus while certain therapeutic approach is required for pathological phenomena. Temporal disorder can be managed with symptomatic treatments, however it is not appropriate for pruritus relating to persistent etiological events. Our survey indicated that common pruritic skin disease in this category consisted of infections, dermatitis, congenital factors, and psychogenic factors in dogs.

Infectious skin disorders usually show pruritus with distinctive skin lesions, in particular redness and bumps due to inflammation as well as exfoliative lesions including scaling and hair loss. It is characterized by dot to ring shape lesions, which tend to expand peripherally. Common infectious skin disorders are pyoderma, demodicosis, dermatophytosis, and Malassezia (seborrheic) dermatitis. Pyoderma is diagnosed based on clinical findings, cytology, bacterial cultures, and response to systemic antimicrobials as well. Demodicosis is diagnosed by clinical findings with recognition of the mites. Personally, hair examination is preferred than deep skin scraping as a non-invasive, screening test, and skin biopsy is supposed to be the best tool to identify them. Dermatophytosis is confirmed on the base of both clinical findings and recognition of fungal elements with microscopic examination, and fungal culture. Malassezia dermatitis features seborrheic and/or scaly erythema located at mainly intertriginous areas. Cytology is often used to evaluate the yeast, but it is not definitive for its diagnosis. Always, diagnosis relies on both clinical findings and response to therapeutic trial including anti-seborrheic shampoo and antifungal agent such as ketconazole.
When dogs develop pruritic dermatitis without infectious agents, eczematous dermatitis should be considered. Our survey indicated that flea allergic dermatitis, scabies, food allergy, and canine atopic dermatitis (cAD) are quite frequently encountered at clinics in dogs with eczematous dermatitis. Clinical diagnosis of allergic dermatitis must rely on both classic history and clinical response to allergen avoidance. The etiology of cAD is still not well known, and it is an undoubtedly more complicated disorder than simple allergy. Several diagnostic criteria for cAD have been proposed in veterinary dermatology. Recently, we conducted that the diagnostic criteria for human AD established by the Japanese Dermatological Association in 2009 appear to be suitable for the application of dogs with cAD (Tab. 1).

Congenital factor, in particular primary seborrhea, primary keratinization disorders, primary hyperhidrosis, and Ehlers-Danlos syndrome is another common disorder in dogs with persistent pruritus, and it has started since their early life. Primary seborrhea is characterized with pruritus along with seborrhea, which is ameliorated with skin care using Selen disulfate and Benzoin peroxide. Primary keratinization disorders produce pruritus along with scaling, and Sulfur salicylic acid can improve it. Primary hyperhidrosis is not common, but important as a congenital factor leading persistent pruritus. Sweat has some different texture and smell compared to seborrhea, and this condition quickly disappear following water bathing. Ehlas-Danlos Syndrome is a group of congenital metabolic disorders of connective tissue including collagen, in which chronic pruritus at the skin folds area due to extensive skin is seen apart from fragile skin. This condition could be diagnosed as intertrigo and skin fold dermatitis. One of the diagnostic keys to identify congenital factors is breed predisposition over each disorder.

Pruritic behaviors in dogs with psychogenic factors are quite similar to those of pruritic skin disorders. We developed and evaluated diagnostic criteria detecting canine psychogenic dermatoses (Tab. 2), and have concluded that the measure provide a valuable guide for detecting of psychogenic dermatoses featuring pruritic behavior in dogs. However, metabolic disorders, neurologic disorders, orthopedic disorders, and skin disturbances (ear and anal sac disturbances, preexisting wounds at lesions) must be carefully evaluated to rule out their behavior due to those physical stress. In addition, we must always carefully consider antecedent and consequent pruritic skin disorders in dogs with psychogenic factors.

**Table 1. Diagnostic criteria for cAD**

1. Pruritic behavior (licking, scratching, biting, chewing, or rubbing)
2. Typical morphology and distribution
   - Eczematous dermatitis
     • Erythema with or without lichenification that is not characterized by scaling, seborrhea and crusting
   - Distribution
     • Symmetrical
     Periorbital area, perioral area, anterior auricle, joint areas of limbs, axillae, inguinal area, ventral abdomen, interdigital area
3. Chronic or chronically relapsing course
   - More than 6 months

Definitive diagnosis of cAD requires the presence of all three features without any consideration of
severity. Other cases should be evaluated on the basis of clinical course with the tentative diagnosis of acute or chronic, non-specific dermatitis.

**Differential diagnosis (association may occur)**

Seborrheic dermatitis, flea allergy, food allergy, contact dermatitis

**Diagnostic aid**

Elevated IgE level against Dematophagoides farinae (over 400 units with the serum allergen-specific IgE test using the high-affinity IgE receptor)

**Table 2. Provisional diagnostic criteria for psychogenic dermatoses featuring pruritic behavior in dogs.**

1 Skin lesions
   1) traumatic alopecia, and/or 2) excoriation
2 Incidental context
   1) emotionally unstable state, and/or 2) physiological events
3 Psychopathologic aspects
   1) antecedent trigger, and/or 2) concurrent psychiatric symptoms

Diagnosis with psychogenic factors requires the presence of all three features 1 to 3, or either 1) or 2) under each item listed above.