



Understanding primary skin lesions

By Richard Harvey

Most often we clinicians are not presented with a dog in the early stages of skin disease. Rather, the disease has been present for some time. Thus, the effects of self trauma, and the ongoing nature of the disease, results in secondary lesions such as crust and scale, alopecia and self trauma. Consider the Cocker Spaniel in **Figure 1a**. This dog had a 6 month history of a moderately pruritic progressive dermatitis. At presentation the most obvious signs were almost total alopecia and crusting—both secondary lesions and of little diagnostic help. Careful search, however, revealed a few pustules, as **Figure 1b**. These pustules were the primary lesions of the dermatitis, in this case a drug eruption.

In some cases the pattern of the secondary lesions may suggest a diagnosis, while not being in themselves of definitive diagnosis value. Thus the bilateral excoriations on the Rottweiler in **Figure 2** were a consequence of flea bite hypersensitivity.

■ Primary lesions

Macules

Areas of discoloration of the skin, less than 1 cm in diameter. Typically erythematous, but they may be hyperpigmented. **Figure 3** shows conjoining erythematous macules in a dog with hyperadrenocorticism. Macules may precede papules in cases of pyoderma. In atopic dogs erythematous

macules may be found in the groins or in the palmer and plantar interdigitatae.

Papule

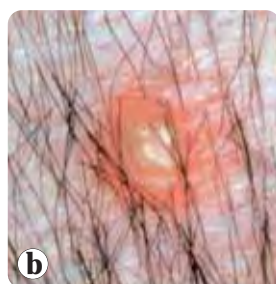
Papules are defined as small, discrete, palpably solid elevations on the skin surface (**Figure 4a**). Some papules may be neoplastic (**Figure 4b**). Most commonly, and particularly in the groins, they precede pustules. Crusted papules may follow vesicles or pustules. In the dog crusted papules outnumber pustules in superficial pyoderma. Superficial pyoderma is uncommon in the cat and in this species the most common underlying cause of a crusted papular dermatitis is flea bite hypersensitivity (**Figure 5**).

Nodule

A well-defined, solid elevation (**Figure 6**), greater than 1 cm in diameter. Nodules are typically, although not exclusively, associated with neoplasia.

Pustule

Pustules (**Figure 7**) are the primary lesions of superficial pyoderma, although often outnumbered by papules, crusted papules (**Figure 8**) and epidermal collarettes (**Figure 9**). Pustules are the primary lesions of pemphigus foliaceus but are rarely accompanied by epidermal collarettes in this disease. Pustules are also found in association with other conditions associated with secondary infection such as demodicosis.



Figures 1 a and 1 b. Almost total alopecia and crusting on a Cocker Spaniel with a 6 month history. Careful examination of the dog revealed a few pustules (**Figure 1b**).



Figure 2. More or less symmetrical crusting and linear alopecia in a Rottweiler with flea bite hypersensitivity.



Comedones

Comedones (**Figure 10**) result from blockage of a follicular orifice by debris and sebaceous material. Typically black in appearance they are associated with feline acne, demodicosis and hyperadrenocorticism in particular.

Erosion and ulcer

Erosions are considered to be superficial, whereas ulcers erode beneath the basement

membrane, exposing the dermis. Acral granulomas (**Figure 11**) typically present as erosions on the distal limb.

Sinus

A sinus (**Figure 12**) is a manifestation of a deep infection that has broken through the basement membrane, or of a dermal lesion (such as panniculitis) that has broken through the skin.

PRIMARY LESIONS



Figure 3. Erythematous macules on the dorsal neck of a dog with hyperadrenocorticism.



Figure 4a. Erythematous papule on the pinna of a dog, in this case a mast cell tumor.



Figure 4b. Erythematous papules on the ventrum of a dog with allergic contact dermatitis.



Figure 5. Crusted papules on the dorsum of a cat, the most common presentation of flea bite hypersensitivity.



Figure 6. A solitary nodule, typically, although not exclusively a tumor.

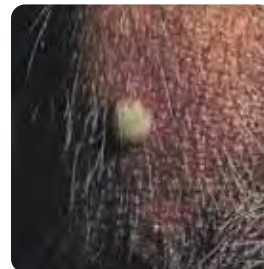


Figure 7. Solitary, well-formed pustule. Often associated with bacterial infection, pustules may also follow inoculation by sharp vegetation or be the lesions of autoimmune disease.



Figure 8. Superficial pyoderma in a young German Shepherd is characterized by erythematous macules and papules, a few pustules and post-inflammatory crusted papules.



Figure 9. Epidermal collarettes, typically associated with superficial pyoderma.



Figure 10. Comedones, in a case of hyperadrenocorticism.



Figure 11. Erosion is a lesion in which the epithelium is taken down to the basement membrane, any deeper and it is an ulcer. Acral granulomas often present as erosions on the distal limb.



Figure 12. Sinus formation is usually a sign of deep pyoderma, panniculitis, atypical mycobacterial infection or deep fungal infection.