Case of the Month May 2024

A 9 yo FS 10.9 kg Terrier mix presents for a 3-month history skin crusting and discoloration. These areas are mildly pruritic. No previous skin issues. No other pets in house, and cohabitating people have no related skin issues. Patient has a history of immune mediated encephalitis and is maintained on Keppra (levetiracetam) 500 mg twice daily and Atopica® (modified cyclosporine) 50 mg twice daily. Labwork earlier in the month was normal.

On physical exam multiple 4-15 mm pigmented plaques were present throughout the dorsum and ventrum. The plaques had a proliferative hyperkeratotic to fronded surface. No peripheral erythema is present.

Figure 1: Trunk.
Figure 2: Ventrum.
Figure 3: Ventrum.
Figure 4: Ventrum.
Figure 7: HE.

Figure 8: HE.
Which of the following is the most likely diagnosis?

A. Pigmented viral plaque
B. Pemphigus foliaceous
C. Psoriasiform-lichenoid dermatosis
D. Pustular dermatophytosis
E. Epitheliotropic cutaneous lymphoma

**Histopathologic description**

In sections of similarly affected haired skin there are well demarcated areas of irregularly to papillary epidermal hyperplasia with deep dermal projections overlain by diffuse orthokeratotic to parakeratotic hyperkeratosis. A band-like lichenoid infiltrate is present within the superficial dermis and is composed of numerous plasma cells and lymphocytes with fewer admixed neutrophils and eosinophils. There are small numbers of macrophages with cytoplasmic melanin pigment. Smaller numbers of mixed leukocytes tract down hair follicles and surround adnexa. There is lymphocytic and granulocytic exocytosis with discrete intraepidermal aggregates/pustules of eosinophils and/or neutrophils. These pustules progress to well delineated cellular crusts that are entrapped within overlying parakeratotic crusts (“Munro microabscess”). Rare colonies of cocci are present within the overlying keratin and crusts. Superficial dermal vessels are contested, lined by reactive endothelium, and contain marginating granulocytes.

**Morphological diagnosis**

Haired skin: moderate, lymphocytic and plasmacytic, psoriasiform-lichenoid dermatitis with intraepidermal eosinophilic to neutrophilic pustules, parakeratosis and small colonies of cocci

**Comments**

The changes are most consistent with psoriasiform-lichenoid dermatitis, an uncommon cutaneous adverse drug reaction associated with cyclosporine administration. This cutaneous manifestation can occur in patients receiving standard cyclosporine dosages (5 mg/kg/day), and is a reversible change that in most cases rapid resolves with reduction or discontinuation of the medication.

The pathogenesis is unknown, and the histologic lesions are identical to those seen in psoriasiform-lichenoid dermatosis of springer spaniels (ISVD COM February 2024). In some of the patients with cyclosporine-associated psoriasiform-lichenoid dermatitis there is a concurrent Staphylococcus spp infection and an atypical reaction to Staphylococcus infection has been proposed as a potential pathogenesis similar to the springer spaniels.

Reported cases of cyclosporine-associated psoriasiform-lichenoid dermatitis are sparse. Reported cutaneous lesions consist of crusted papules and plaques and have been reported on the dorsum, ventrum, flanks and limbs. Reactions can develop between 8 weeks to 2 years after initiation of treatment.
References


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