



ECVP/ESVP Summer School in Veterinary Pathology



Marie Curie Training Courses

Summer School 2006 – Emerging Infectious Diseases Case 12

CASE 12 Provided by: Richard Fox, Abbey Veterinary Services, Newton Abbot, UK.

Signalement: Cat (Domestic Short Hair), 4 years, male neutered.

History:

The animal developed an initial lesion on the upper lip, represented by a solitary small plaque. This progressed to an area of ulceration and was associated with left mandibular lymphadenopathy. Flea infestation was suspected (UV light: negative). Subsequently, further lesions developed on the left lateral aspect of the lip and a biopsy was taken from the most recent lesion. Further follow-up was not available.

Histology: Tissue from a cat.

1. DESCRIPTION OF HISTOLOGIC FINDINGS

Haired skin. There is central, trans-epidermal necrosis (loss of keratinocyte cellular detail, cytoplasmic eosinophilia, nuclear pyknosis and karyorrhexis, cytolysis) and ulceration. Within necrotic epidermis there are large numbers of karyorrhectic neutrophils accompanied by frequent erythrocytes. The peripheral, intact epidermis displays moderate irregular hyperplasia with mild basket-weave orthokeratotic hyperkeratosis. Within the superficial dermis similar numbers of interstitial degenerate neutrophils with moderate diffuse accumulation of pale and intensely eosinophilic hyaline and fibrillary material (oedema and fibrin) are present. There is extensive necrosis of infundibular follicular epithelial cells affecting the majority of follicles. Epidermal and follicular basal cells display marked cytoplasmic eosinophilia, swelling and ballooning degeneration with single to multiple, variably sized intracytoplasmic eosinophilic inclusion bodies varying from approximately 5 to 50 μm in diameter. Within the surrounding mid to deep dermis there are moderate diffuse infiltrations of neutrophils, lymphocytes, vacuolated macrophages, and rare eosinophils.

Throughout the mid to deep dermis and subcutis are numerous dilated lymphatic vessels which contain prominent eosinophilic hyaline material (lymph) and are lined by activated endothelial cells with a tombstone-like morphology, bulging into the vessel lumen. Diffusely numerous dermal hyperaemic small blood vessels displaying numerous neutrophils and neutrophil emigration are present.

Moderate numbers of interstitial macrophages and mast cells are present within the subcutaneous adipose connective tissue.

2. MORPHOLOGIC DIAGNOSIS

Haired skin; moderate to severe, acute to subacute, focally extensive ulcerative and necrotising dermatitis (epidermitis and folliculitis) with peripheral epidermal hyperplasia, with eosinophilic intracytoplasmic epithelial inclusion bodies, consistent with cowpox virus infection.

3. ETIOLOGY

Cow pox virus (orthomyxovirus).