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## Pemphigus foliaceus in a dog associated with asymptomatic inflammation of the liver and heart

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Dear Sir,

An 11-year-old male mongrel dog was admitted because of pruritic skin lesions of 1.5-month duration. They were localized on the pinnae, neck, dorsal and lateral thorax, inguinal area, front and hind limbs and footpads, had a bilateral symmetrical distribution and were characterized by severe crusting, erythema, erosions, pustules and footpad hyperkeratosis (Figure 1). Subsequently, the dog was treated with oral cefalexin at the dose of 15 mg/kg, BID for 10 days, but to no avail. Clinical examination was unremarkable and CBC revealed only a mild neutrophilic leucocytosis. Pustular cytology revealed the presence of numerous normally-looking neutrophils, intermingled with clusters of acantholytic cells (Figure 2). Cytology was suggestive with the diagnosis of pemphigus foliaceus (PF). Punch skin biopsies were taken and reveal epidermal subcorneal pustules containing many acantholytic cells and neutrophils, subepidermal edema and superficial interstitial to diffuse suppurative dermatitis confirming the diagnosis of PF (Figure 3). Despite appropriate immunosuppressive therapy, there was no improvement. The owner refused further laboratory work up and elected to have the dog euthanized instead. On post mortem, performed with his written consent, the only lesion observed was the presence of small nodules on the surface of the liver and pericardium. Histopathology revealed subcapsular and intrahepatic microabscesses and poorly nodular appearance of the hepatic parenchyma and fibrous nodular hyperplasia and pyogranulomatous inflammation in the pericardium. Pyogranulomatous inflammatory infiltrate was also observed in the myocardium (Figure 4). PCR



Figure 1. Severe crusting, erythema, erosions, and pustules on the ear pinna and neck.

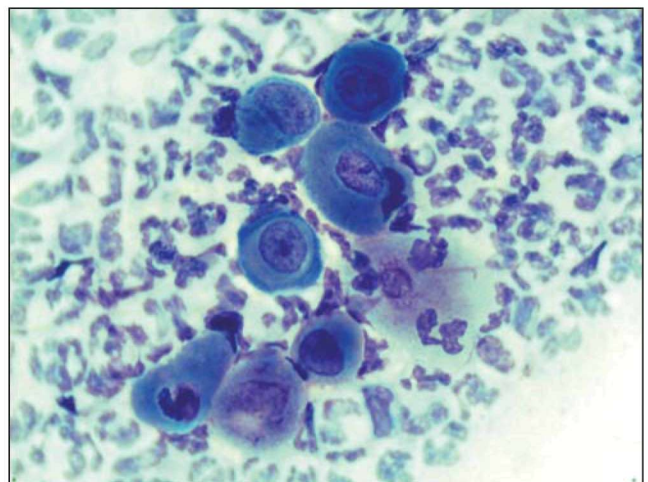
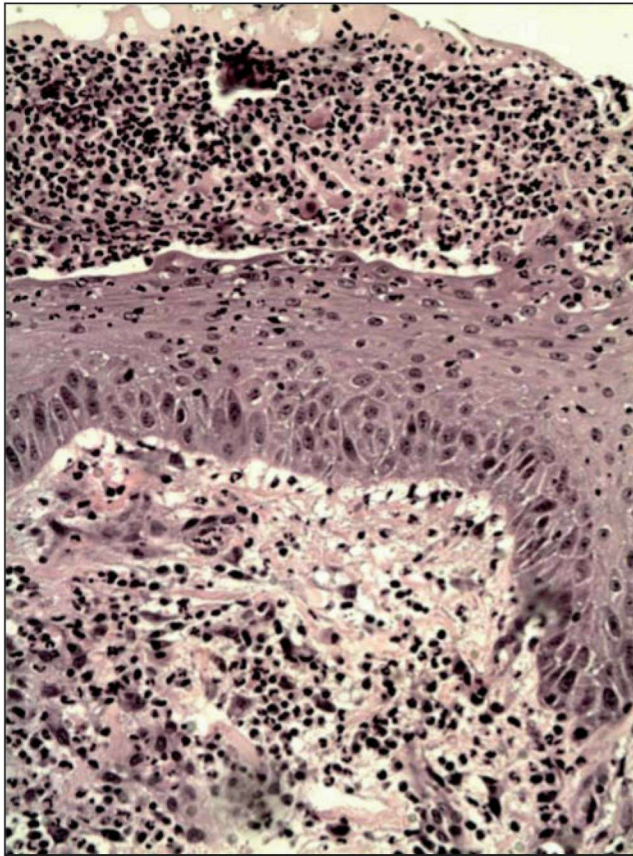


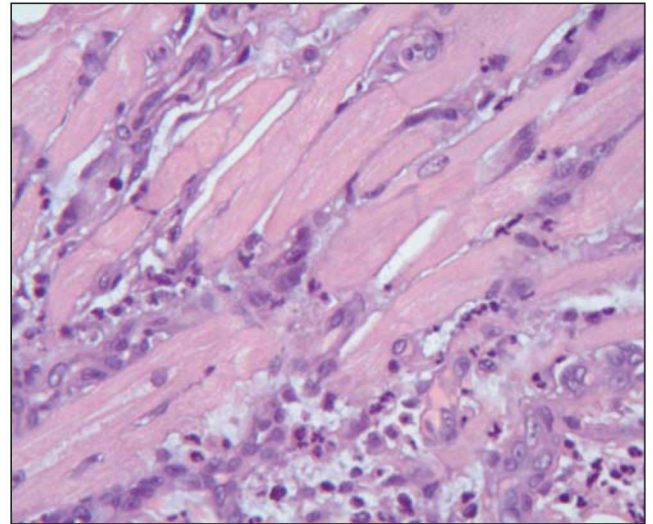
Figure 2. Pustular cytology revealed the presence of numerous normally-looking neutrophils, intermingled with clusters of acantholytic cells.



**Figure 3.** Histopathology of the skin lesions revealed epidermal subcorneal pustules containing many acantholytic cells and neutrophils, subepidermal edema, and superficial interstitial to diffuse dermatitis.

from infected liver and myocardium using specific primers failed to revealed *Toxoplasma gondii*, *Bartonella* spp. and *Leishmania* spp.

Although the exact pathogenic mechanism of PF is not known, some cases may occur as a consequence of chronic, on-going inflammatory skin diseases (Gross et al. 2005) lymphoid tumors and after drug admini-



**Figure 4.** Histopathology of the myocardium revealed the presence of pyogranulomatous inflammatory infiltrate.

stration (Day, 1999). It seems that pemphigus foliaceus may also appear in inflammatory conditions of internal organs, although it is not easy to diagnose, thus emphasizing the possibility of a common pathogenetic mechanism triggering autoimmunity in both neoplastic and inflammatory diseases. However, in many PF cases declared “idiopathic”, we are not sure that nothing is hidden beneath, as small lesions, localized deep into the internal organs in otherwise asymptomatic animals, are sometimes missed even with the aid of current laboratory techniques. ■

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