**Signalment:** 14-year-old male castrated domestic short haired cat

**History:** The cat was presented to an emergency service for a skin wound on the caudal dorsum and respiratory distress. Several months prior the cat was diagnosed with diabetes mellitus and was treated with 3u of glargine twice daily. Last week the owners noted that he was not grooming and had decreased skin turgor. He was brought to his primary care veterinarian, and following this visit the owners administered subcutaneous fluids for one week. An abdominal ultrasound was performed after presentation to the emergency service and showed a hyperechoic liver, multifocal to segmental thickened small intestinal loops and an enlarged right adrenal gland (6x 8x 4 cm). That patient was euthanized.

Figures 1-3

{Insert Poll Question}

What is your diagnosis for the skin lesions?

A. Bacterial cellulitis  
B. Acquired skin fragility syndrome  
C. Cutaneous asthenia  
D. Cutaneous (or multicentric) lymphoma

**Answer:** B. Acquired skin fragility syndrome

**Necropsy:** Major findings at necropsy included severe cutaneous atrophy and diffuse scaling (Figure 2). with a dorsal lumbar tear with only minimal hemorrhage at the margin of the ulcerated skin (Figures 1 and 3). Other findings included a large adrenocortical carcinoma (Fig. 4) with contralateral adrenal gland atrophy, a pulmonary (bronchioalveolar) carcinoma, mild hepatic lipidosis, mild to moderate lymphoplasmacytic enteritis, and a mild neuropathy of the sciatic nerve with increased Schwann cells and perineural fibroblasts and few spheroids.

Figures 5 and 6

**Histopathology:** The sample is from the ventral flank. The epidermis and dermis are atrophied. The nucleated layers of the epidermis range from 1 to 2 cell layers thick and there is severe basketweave orthokeratotic hyperkeratosis. The dermis is thinned and composed of thin, attenuated, wispy collagen fibers. Hair follicles are frequently in telogen phase. Sebaceous glands are diffusely, subjectively small. There are few scattered lymphocytes and rare neutrophils within the dermal interstitium. Trichrome stained sections were within normal limits with uniform blue staining of collagen fibers.
**MORPHOLOGIC DIAGNOSIS:** Severe diffuse cutaneous atrophy with orthokeratotic hyperkeratosis and telogen follicles

**COMMENT:**

Acquired feline skin fragility syndrome is a rare disorder that has been reported with a variety of concurrent systemic diseases, excessive progestational drug (progestin) and antiseizure drug (phenytoin) administration. Most common associations are with endogenous or exogenous glucocorticoid excess and diabetes mellitus (often concurrent with hyperadrenocorticism). Few reports have documented systemic disease processes including feline infectious peritonitis, cholangiohepatitis, cholangiocarcinoma, lymphoma, histoplasmosis and hepatic lipidosis. Some reported cases are idiopathic or associated with a catabolic state. The pathogenesis is unknown. Though rarely reported, skin fragility may be reversible with correction of the underlying or concurrent disease process. The severe cutaneous atrophy in this case was attributed to the presumptively functional adrenocortical carcinoma, though diabetes mellitus may be contributory. The subcutis is generally unaffected. Abnormal staining patterns have been reported in some cases of acquired skin fragility with multifocal red staining of portions of the collagen fibers. Electron microscopy has shown spindly, convoluted and haphazard collagen bundles with loosely packed and twisted fibrils making up the fibers.

Cutaneous asthenia/dermatosporaxis/Ehlers-Danlos syndrome is a congenital/hereditary connective tissue disorder to be distinguished from acquired skin fragility, but signalment and history often allow for differentiation. In cutaneous asthenia is rarely encountered in younger cats and the skin is generally hyperextensible, which is not a feature of acquired skin fragility. Autosomal dominant and autosomal recessive forms have been reported. Abnormal wound healing, cutaneous tears and scarring may be present in both conditions.

**References**

Barthold SW. Kaplan BJ. Schwartz A. Reversible dermal atrophy in a cat treated with phenytoin. Vet Pathol. 1980; 17:469-76


Regnier A, Pieraggi MT. Abnormal skin fragility in a cat with cholangio-carcinoma. JSAP. 1989; 30 (7): 419-423


Contributer: Charles Bradley, VMD, Diplomate ACVP. Assistant professor, Clinical Educator Anatomic Pathology; University of Pennsylvania, School of Veterinary Medicine, Philadelphia PA USA.
FIGURES

Figure 1.

Figure 2.