OVARIOHYSTERECTOMY AS A POTENTIAL TRIGGER FOR ACQUIRED SKIN FRAGILITY SYNDROME IN A JUVENILE CAT.

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Background

Acquired skin fragility syndrome (ASFS) is a very rare syndrome described in middle-aged or older cats, with no breed or sex predilection. The condition is characterized by fragile and thin skin, severely damaged by minor trauma, with no evidence of hyperextensibility (1). Skin wounds are usually associated with absent or poor bleeding and are difficult to manage. Its pathogenesis is not known, but it is presumed that reduced collagen synthesis due to endogenous or exogenous glucocorticoids contribute to the disease. It is most commonly associated with high levels of steroid hormones, such as iatrogenic or naturally-occurring hyperglucocorticoidism, diabetes mellitus, excessive usage of progestational compounds or in conjunction with severe liver disease, phenytoin administration, feline dysautonomia and/or nephrosis. Idiopathic cases are also reported.

Objective

To outline clinical, histological and haematological findings in a case of ASFS in a young cat without any clinical diseases and speculate on its pathogenesis.

Materials and Methods

A 10-month-old female mixed breed cat from a colony was referred to a veterinary practice suffering from cutaneous thinning and lacerations, with no known traumatic aetiology. The referring veterinarian performed an in-house feline immunodeficiency virus/feline leukaemia virus (FIV/FeLV) SNAP test, which was negative. Clinical signs had started to develop 2 months after ovariohysterectomy (OVH). Suture dehiscence was also reported. Cutaneous biopsies were submitted for histopathological evaluation. Blood and urine tests were then performed as an attempt to identify a possible underlying pathological condition.

Results

On clinical examination, skin friability has led to a locally extensive area of tearing with irregular edges measuring up to 2-3 cm on the patient's left rump (Figure 1).

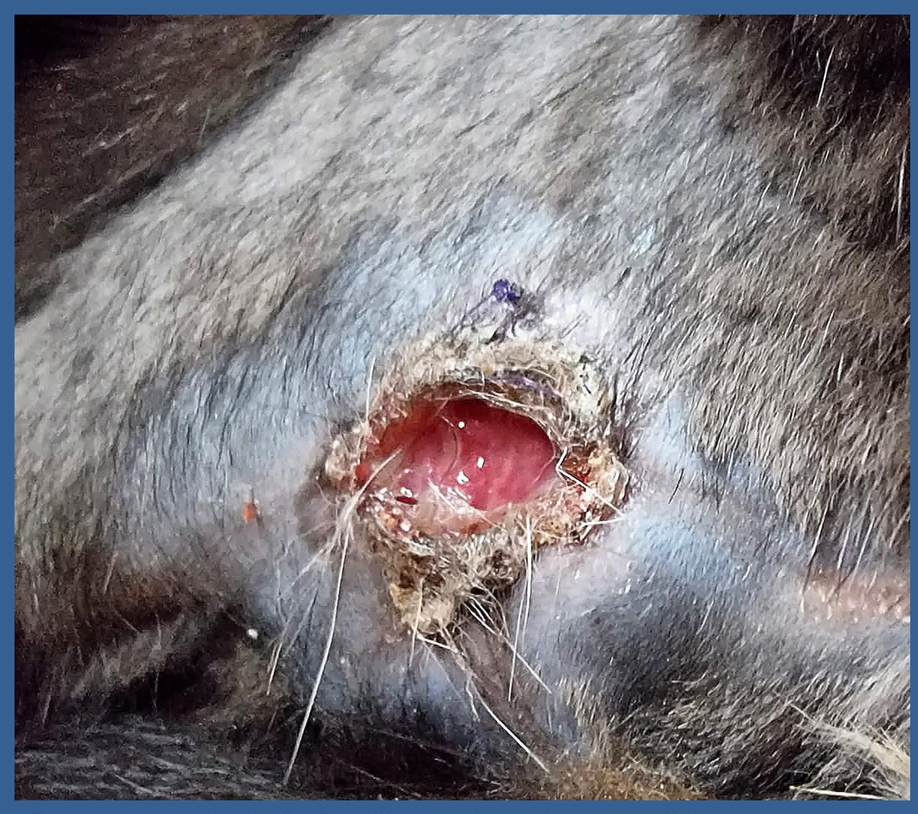

Figure 1. Acquired skin fragility syndrome in a cat. Skin tear measuring up to 2-3 cm observed on the left rump.

Histologically, the epidermis was thinner than normal, with areas characterized by a single layer of keratinocytes. Dermis and adnexae were also severely atrophic (Figure 2).

Dermal collagen fibers were variably attenuated, reduced in number and size and pale stained, with a wispy appearance (Figure 3). Masson's trichrome stain demonstrated reduced staining intensity of collagen fibers, although it failed to reveal altered tinctorial affinity occasionally described in the condition (2).

Secondary ulceration, inflammation and scarring were also detectable (Figure 2, inset).

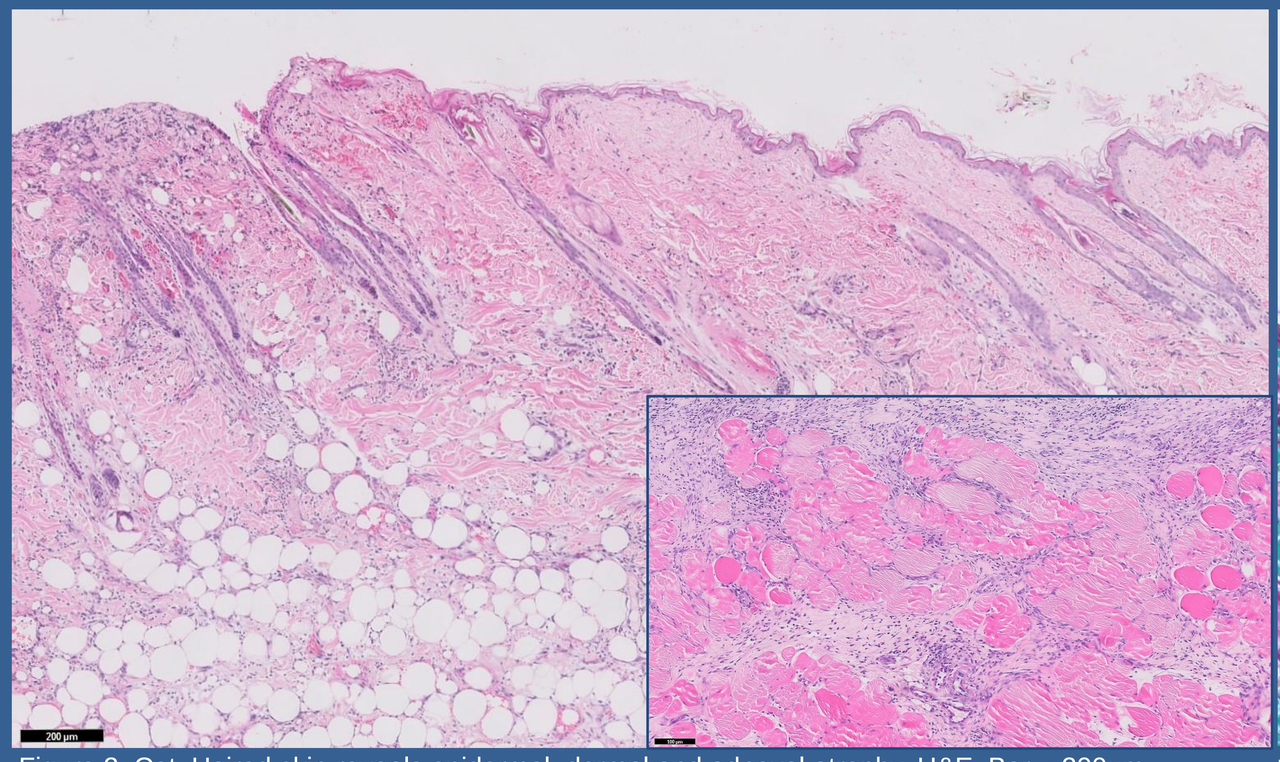

Figure 2. Cat. Haired skin reveals epidermal, dermal and adnexal atrophy. H&E. Bar = 200um. Inset: inflammation and fibroplasia secondary to cutaneous ulceration. H&E. Bar = 100µm.

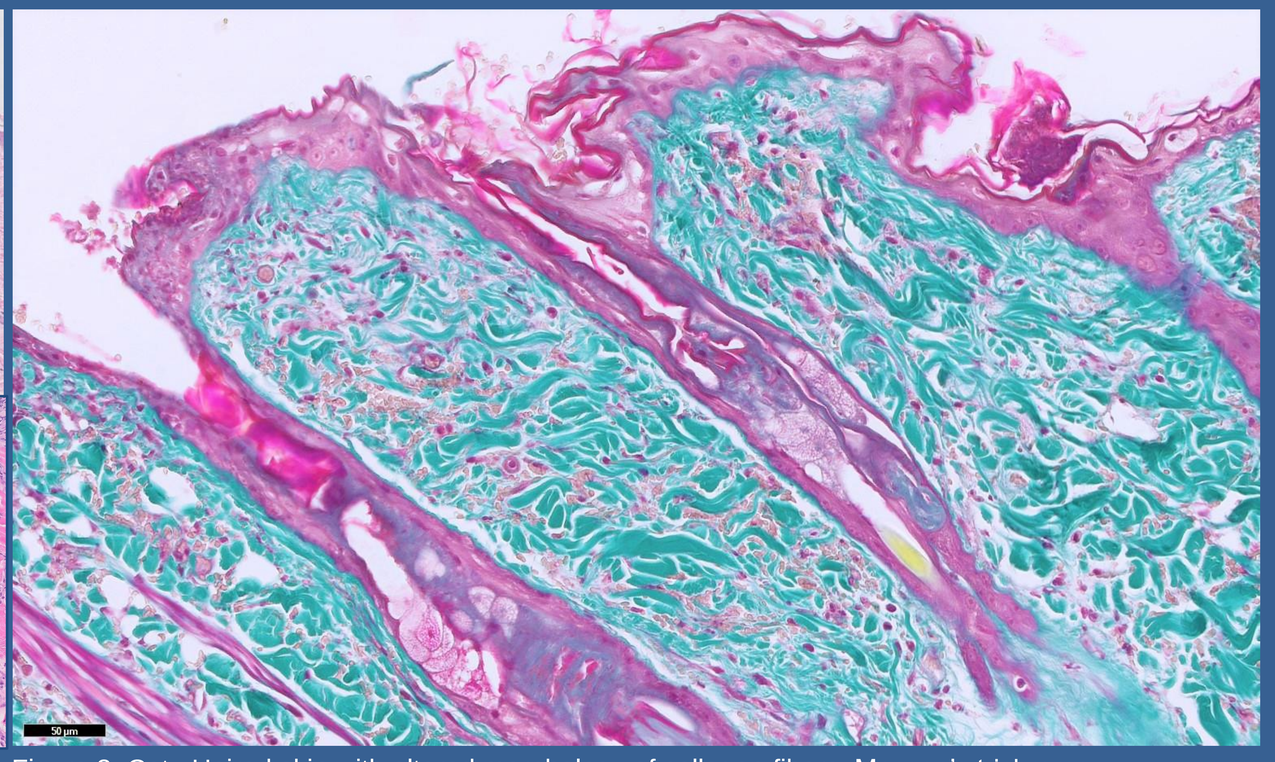

Figure 3. Cat., Haired skin with altered morphology of collagen fibers. Masson's trichrome histochemical stain. Bar = 50µm.

Biochemistry revealed severe hyperglycemia, but serum fructosamine measurement and absence of glycosuria were not supportive of diabetes mellitus. In the examined case hyperglycemia was most likely stress related.

The patient had a normal urine cortisol-to-creatinine ratio (UCCR), that was used to rule out the diagnosis of an underlying hyperadrenocorticism.

Most relevant results of blood and urine tests are summarized in Table 1, with reference intervals reported.

Parameter	Results	Reference interval (RI)
glucose	293 mg/dl ↑	63-140 mg/dl
fructosamine	199 umol/l	137-286 umol/l
urine glucose	negative	/
urinary cortisol:creatinine ratio (UCCR)	10.3	19.6 ±19.2
urine cortisol (CLIA)	88.6 ug/l	

Table 1. Most relevant biochemical and urinary parameters tested in the patient.

Conclusions

In this case, clinical history, clinical presentation and the results of laboratory tests were not matching neither with an underlying hyperadrenocorticism, nor diabetes mellitus or liver disease.

The cat did not develop any additional cutaneous lesions and both the OVH wound and the one on the rump were healed uneventfully.
The exact pathogenesis regarding the dermatological abnormalities seen in this case remains unknown but considering cats are prone to stress, routine OVH or in a broader meaning any surgical stress should be included in the list of causes of ASFS, supporting the findings of a recent case report (3).

References

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2. Fernandez CJ, Scott DW, Erb HN et al. Staining abnormalities of dermal collagen in cats with cutaneous asthenia or acquired skin fragility as demonstrated with Masson's trichrome stain. Vet Dermatol; 9: 49–54, 1998.
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