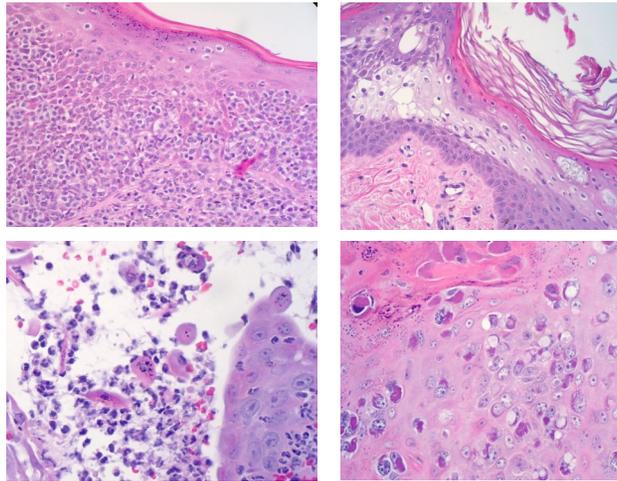


Histopath Consulting - Peter H Rowland, DVM, ACVP—offering a private, personalized biopsy service— phrowland@verizon.net 518 373-8820 or 413 634 8077

Dermatopathology— Get the most from your skin biopsies

Recently, I have had a few calls asking if I evaluate skin biopsies and if I am a dermatopathologist. An excellent question to pose if you want to obtain the most information from your punch biopsies. Although there is no official certification for dermatopathology as a subspecialty, it is crucial that your pathologist has had training in dermatopathology and, just as important, that they enjoy and are interested in skin diseases. Training alongside and working with Danny Scott and Bill Miller while at Cornell gave me an excellent foundation in reading skin biopsies and piqued my interest in skin diseases that continues to this day. I enjoy the process of interpreting skin changes and encourage the submission of skin biopsies. Skin can be affected by a wide variety of diseases making it very interesting to examine (see the adjacent photomicrographs with some examples).



Skin with neoplastic, metabolic, autoimmune and infectious diseases

- Top left— epitheliotropic lymphoma— note the prominent infiltration of the epithelium by round cells
- Top right— superficial necrolytic dermatitis (hepatocutaneous syndrome) — you can see thickened epidermis with superficial parakeratosis, a pale layer of keratinocytes and a deeper layer of more basophilic cells— described as red, white and blue.
- Lower left — pemphigus foliaceus— this is high magnification within a pustule showing rounded acantholytic keratinocytes intermixed with neutrophils
- Lower right — presumed poxvirus infection— the thickened epidermis has keratinocytes with large, eosinophilic, intracytoplasmic viral inclusions.

But what can you do to maximize the results? The following are some helpful hints and also some things to avoid.

Submit the crust! — particularly with conditions such as pemphigus folicaceus, the diagnostic material may be superficial, so, if a crust separates during the biopsy procedure put the crust along with the skin in the fixative.

Get more than one sample — try to sample newly formed or forming lesions — in general three or four 6 mm punch samples of lesions with various gross appearances is advised (these are charged as a single tissue as long as they don't have to be processed on separate slides for site identification). I have seen many cases of pemphigus foliaceus where only one of three samples had diagnostic changes.

Protect the samples — avoid cautery, immediately immerse in fixative, do not compress samples with forceps, turn the punch in (cont page 2)

Fragile Skin in Cats

Cases of skin fragility syndrome in cats can be pretty dramatic with some cats presenting with extensive lacerations (see photo next page). The skin typically is very thin and may even appear somewhat translucent. Histologically, there is marked thinning of the dermis with loss of collagen. This is a disease of middle-age or older cats and the skin is not hyperextensible. This helps differentiate acquired skin fragility from congenital collagen disorders of young cats that may also have fragile skin.

The classical cause of fragile skin in cats is hypercortisolism, but there are other less common causes that have been reported. These include other endocrine abnormalities, such as diabetes mellitus or increased progesterone compounds. Hepatic lipidosis and, possibly other hepatic disorders may also rarely be associated with fragile skin. Reversible skin fragility was seen in a cat treated with phenytoin and it was also reported in a cat with histoplasmosis.

The pathogenesis has not been well (cont page 2)

Fragile Skin (cont)

defined and may be multifactorial.

In many cases the prognosis is poor, as suturing tends to be difficult or impossible and additional lacerations easily develop. If an underlying cause is identified and can be reversed, this provides the best chance to resolve the skin lesions.

References: Alexandre G T Daniel. Skin fragility syndrome in a cat with cholangiohepatitis and hepatic lipidosis. *J Feline Med Surg.* February 2010;12(2):151-5.

Amy M Tamulevicius et al. Disseminated histoplasmosis accompanied by cutaneous fragility in a cat. *J Am Anim Hosp Assoc.* 2011 May-Jun;47(3):e36-41.

S W Barthold et al. Reversible dermal atrophy in a cat treated with phenytoin. *Vet Pathol.* July 1980;17(4):469-76.



This cat with skin fragility has a very large laceration with extensive skin separation.



Laboratory News -

We still have another month or two of cold weather so this is another note to remind you to avoid leaving samples out for pickup if temperatures are below freezing. 1 part isopropyl alcohol can be added to 10 parts fixative to help prevent freezing.

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Dermatopathology (cont)

only one direction to decrease shear forces.

Clinical history can make a big difference! - if you are short on time just include a short note with the following information; 1) duration of lesions, 2) location of lesions, 3) appearance of lesions, 4) any history of previous skin problems/lesions and 5) whether or not **the problem is pruritic** (very important).

Send a photo! – I love to get photos and it can be very helpful – if interesting they may show up in future newsletters.

Medications may alter pathology— if you see a dramatic change in lesions after administering medication, the histologic

changes will also likely be changed and this should be noted in the history.

Descriptions should match the gross appearance— If you receive a biopsy description that just doesn't seem to match what you are seeing – please let me know. A lesion could be out of the initial plane of section and it may be worth doing deeper sections in the tissue block.

Skin cases can be complicated and a pathologist working along with the clinician generally provides the best chance for an accurate diagnosis, so please never be hesitant to call or email about your cases.

Have you seen this?

Here you see the nose of a 1.5 year old Border Collie with multiple reddened, thickened to nodular areas in the muzzle skin. Lesions were also seen on other areas of the body. The photomicrograph reveals the thickened areas are due to dense infiltrates of relatively uniform histiocytic cells intermixed with small lymphocytes. Histiocytes are densely packed and have a vasocentric pattern in areas. This is consistent with cutaneous histiocytosis. Immunophenotyping of fresh tissue has further defined this as a proliferation of Langerhans cells. Ruling out infections is generally advised, as some infections could also result in dense, mixed histiocytic infiltrates. Collie type dogs can also have sterile pyogranuloma syndrome with a similar gross appearance, but with more distinct, coalescing pyogranulomas .

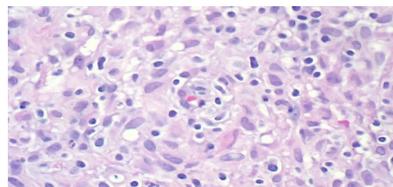


Photo courtesy Dr. Ryer—thanks!

Ask the Pathologist !

Please send your questions via email— phrowland@verizon.net

Those of general interest may appear in future issues of Practical Pathology

