

 **The Role of the Practitioner in Dermatopathology>>>>keep reading, this will be fun** 

by Ann M. Hargis DVM, MS, Diplomate ACVP

**Obtaining a diagnosis is a team effort by the practitioner and pathologist**

**Practitioner**

1. Provides the history (serves as the eyes for the pathologist) in regard to gross lesions
2. Obtains the high quality samples for evaluation

**Pathologist**

1. Evaluates the histologic lesions
2. Based on the history provided by the practitioner, **interprets** the lesions

 **FIRST, THE HISTORY**

**What is in a history?**

Age, breed, sex  
Lesion distribution  
Lesion appearance and severity  
Lesion duration  
Influence of specific therapy/recent therapy that could change lesions  
Other clinical problems  
Laboratory analyte abnormalities  
Differential diagnoses

**Why is history so important?**

Allows pathologist to interpret the histologic findings—what does the diagnosis actually mean?  
Allows pathologist to judge if the samples are representative—if the history indicates the main lesion is crusting but there are no crusts in the sections, the samples are not representative (**you need to know this!**)  
The differential diagnoses stimulate the pathologist to look for the histologic features to rule in or rule out those diagnoses (especially for hard to see features that a pathologist might otherwise overlook such as the missing sebaceous glands in chronic sebaceous adenitis or the inclusion bodies in feline facial herpesvirus dermatitis)

**How long does a history have to be?**

**Short and to the point is perfect**

**Example history:**

- 4 year old, spayed female Chow Chow
- Face, ears, footpads, patchy areas of trunk
- Severe crusts, moderate alopecia, and redness
- Present two months
- No response to cephalixin (give dose)
- Dog febrile and has mild leukocytosis
- Differential diagnosis: pemphigus, vasculitis, hepatocutaneous syndrome

 **SECOND, COLLECTING THE SAMPLES**

**When to biopsy?**

There is much to say about when to collect biopsy samples. Basically, biopsy sampling is indicated if thorough dermatologic examination fails to distinguish the various clinical differential diagnoses, and also when therapy that might be used to differentiate or treat the conditions has serious side effects. Biopsy sampling is also useful when lesions fail to respond to apparently ap-

appropriate therapy, when lesions develop during therapy, when lesions are severe or unusual and diagnosis is needed quickly, and when a lesion might represent a tumor. Lesions should be as active as possible, and collected prior to use of therapy that could change the histopathology.

### **Where to biopsy?**

Spend at least 5 minutes looking for lesions. Fully developed primary lesions are often the most useful, but secondary lesions can also be diagnostic especially if they represent a significant portion of the lesions. If crusting is significant, in addition to the biopsy samples, also collect crusts, wrap in lens paper, and place in formalin. For depigmenting lesions, gray areas (not white) are more often diagnostic. For alopecic conditions, the most alopecic areas (not margins) are often the most diagnostic. Collect **multiple** samples that are representative of the range of lesions.

### **How to biopsy?**

**Be gentle.** For lesions in the epidermis or dermis, no scrubbing is allowed! Gentle clipping or scissoring is acceptable. Also, do not grasp the lesional area of the biopsy sample with any type of tissue forceps. Especially for small samples, no cautery or lasers are allowed. For sampling haired skin of most dogs and cats, a 6 mm biopsy punch instrument is the recommended size (8 mm punch samples are also good). The 4 mm punch instruments are usually too small for haired skin, but can be used to collect samples from around eyes, or from the nasal planum or footpads. Use an incisional or excisional method if the lesion would be ruined by use of a punch instrument. To keep thin incisional or excisional samples from curling in formalin, attach the samples to cardboard or a piece of tongue depressor. For alopecic conditions, use a fine tipped permanent marking pen to draw a line on the sample in the direction of the hair coat. When using a punch sample at the margin of an ulcer or other similar lesion, use a fine tipped permanent marking pen to draw a line perpendicular to the junction of the lesion and normal skin. To identify different samples, place them in labeled tissue cassettes or in separate bottles. Do not rely on cardboard or tongue depressors for labeling as samples frequently dislodge during transit.

### **What about immunostaining for autoimmune diseases or to help diagnose tumors?**

Use of immunostaining for identification of cell surface or cytoplasmic proteins (to aid in diagnosis of tumors) or for identification of immunoglobulin, complement, or other antigens (to aid in the diagnosis of immune mediated skin disease) can be helpful in some cases. Unfortunately, immunostaining techniques can give false positive or false negative results, thus must be done in conjunction with standard histopathology. For **autoimmune diseases**, samples can be collected in Michel's fixative for immunofluorescence or in 10% buffered formalin (the standard fixative) for immunoperoxidase staining. For **poorly differentiated tumors**, evaluation of a series (panel) of antibodies is preferred, as the pattern of staining with a panel of antibodies is more reliable than staining with one or two antibodies. Formalin fixed specimens are acceptable for some procedures, but for others, fresh or frozen specimens are better. Discussion with a pathologist is recommended regarding when to utilize immunostaining procedures.

### **What else?**

Ancillary procedures can supplement biopsy sample evaluation. These include cultures, skin surface and pustular cytology, skin scrapings, and aspirates and touch impressions of nodular masses. Also keep in mind that referral to a veterinary dermatology specialist is a viable option in many areas.

**Remember obtaining the diagnosis is a team effort. If there are questions, it is best to speak with the pathologist who read the case.**

### **HAPPY SAMPLING**



### **For more information including easily referenced checklists and color pictures see:**

SV Bettenay and AM Hargis, *Practical Veterinary Dermatopathology for the Small Animal Clinician*, Teton NewMedia, Jackson, WY, (in press; expected winter of 2003)