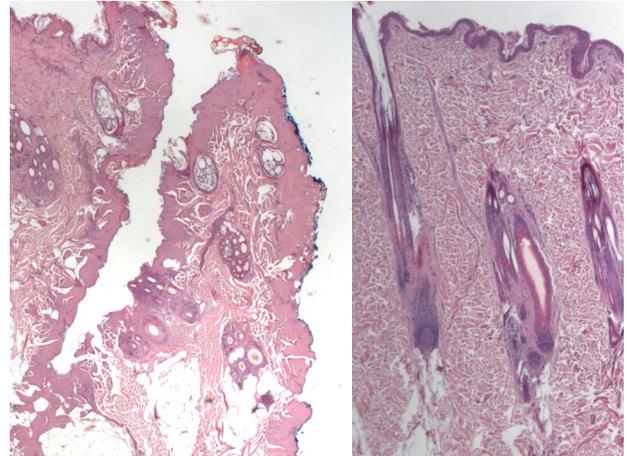


Did You Know?

HOW TO GET THE MOST OUT OF A SKIN BIOPSY

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A skin biopsy is an important diagnostic step for any skin disease particularly one that is not responding or worsening on therapy. Other indications include acute, active, vesicular and/or severe lesions, those that are nodular and might be neoplastic, and those that appear unusual and/or may have multiple etiologies. Chronic and secondary lesions resulting from infection, surface trauma, scarring and steroid therapy may mask primary lesions, and in these cases, a biopsy may or may not be diagnostic. Thus it is never a bad idea to perform a skin biopsy before any treatment is begun.



Small Skin biopsy (left) distorted and rendered non-diagnostic due to electrodesiccation artifact caused by laser cautery, compared to well-preserved skin biopsy (right).

Below are listed some key points that will help you achieve the greatest diagnostic yield from your skin biopsy. For questions on biopsying an individual patient, please contact our histopathologists for their

Consider Sampling From:

- ◆ Multiple sites representative of the spectrum of lesions to optimize diagnostic yield.
- ◆ Every lesion that appears macroscopically different or when in doubt, three to five total sites if lesions are multifocal to generalized. Use a 6 mm to 8 mm punch biopsy; a 4 mm punch may be necessary for difficult areas and/or more painful areas (footpads, nasal planum, eyelids or around the eye) or smaller patients. Note: Amputation of the entire nail/distal phalanx bone is recommended to confirm suspect cases of lupoid onychodystrophy.
- ◆ Areas of early depigmentation (before ulceration occurs) if lupus like disease is suspected.

Always Remember To:

- ◆ Provide as much detail as possible in your history to include lesion distribution, gross appearance, duration, other symptoms, results of prior tests, current and past treatment, response to therapy, AND your clinical differential diagnoses.
- ◆ Keep your biopsies in separate containers or cassettes, or mark with different colored dyes if they were obtained from particular sites of interest or are representing lesions that appear morphologically different. Do not assume lesions that appear grossly different will appear histologically different. Avoid placing biopsies on card board or thumb depressors as they often fall off during shipment.

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Prevent Artifacts By:

- ◆ Placing biopsy in an adequate volume of 10% neutral buffered formalin immediately (within 5 minutes) after collection.
- ◆ Avoiding crushing your sample from a used/dull punch biopsy instrument or forceps (grasp deeper SQ fat/tissue only with forceps so as to avoid forcep marks in the epidermis).
- ◆ Leaving surface crusts or pustules intact. This may require a wider punch biopsy. If lesions are large, an excisional biopsy with a scalpel can be done. Biopsy areas should not be cleaned or prepped so that these superficial features are left intact. A local anesthetic may be injected into the subcutaneous tissue, but care should be taken not to inject too superficially which might disrupt lesions. Avoid lidocaine in biopsy samples for culture as it may affect viability of some organisms.
- ◆ Avoiding electrodesiccation and heat artifact caused by laser cautery (see illustration on page 1).

Be Aware of the Limitations of Histopathology:

- ◆ Different skin disorders may share the same microscopic changes so one particular reaction pattern may not be etiologically specific.
- ◆ Biopsy complements your clinical findings and other laboratory results.
- ◆ Special staining procedures or additional testing (such as submission of fresh tissue for microbiology) may be recommended and incur an additional cost.
- ◆ Immunofluorescence for autoimmune skin diseases, which required submission of samples in a specific media, is no longer recommended due to the high rate of false positive and false negative results.

Culture of Skin Biopsy:

Bacteria skin culture of a skin biopsy should always be considered. In particular those dermatologic conditions that are not responding appropriately to therapy may indicate the presence of antimicrobial resistance and the need for culture and sensitivity. A skin biopsy can be placed in a sterile container (clear top tube works well) with a couple drops of saline for a culture/sensitivity. In addition, samples from pustules, crusts and epidermal collarettes can be submitted. For an excellent reference on sample collection for culture, and antimicrobial therapy for canine superficial bacterial folliculitis, see the reference below.

Hillier A, Lloyd DH, Weese JS *et al.* Guidelines for the diagnosis and antimicrobial therapy of canine superficial bacterial folliculitis (Antimicrobial Guidelines Working Group of the International Society for Companion Animal Infectious Diseases).

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