



DERMATOPATHOLOGY: BIOPSY GUIDELINES

Clinical information

The following should be provided for each case:

- Age, breed, sex, neuter status, and color.
- Location and distribution of lesions, clinical progression, and sites from which samples were obtained.
- Gross description of lesions.
- Gross photographs of lesions can also be very helpful. These can be mailed with samples or submitted in electronic form to info@specialtyvetpath.com. When submitting images via email, please include the patient name in the subject line.
- Presence or absence of pruritus.
- Results of clinical laboratory evaluations.
- Previous and/or current treatments and response (or lack of response) to therapy.
- List of clinical differential diagnoses.

Site selection

- Sites selected for biopsy should represent the full range of lesions present. In most instances, early or fully developed primary lesions provide the most useful information.
- If intact pustules or vesicles are present, these should be biopsied in their entirety. This may necessitate obtaining a larger sample than can be accomplished with a punch biopsy tool.
- When present, crusts and scales should be left intact if possible. Crusts can also be submitted in a screen cassette or folded in lens paper.
- For alopecic conditions, select the most alopecic areas for biopsy. Use a permanent marker to draw a line across the biopsy in the direction of hair growth in order to help the histotechnologist properly orient the sample. For comparison, a biopsy of normal skin can be submitted, but this should be placed in a separate container.
- In alopecic disease where an endocrinopathy is suspected, samples should be collected from areas that normally have a high density of adnexa, such as the shoulder or back, rather than sparsely haired areas such as axilla or groin.

- In depigmenting diseases, areas of partial pigment loss (gray areas) should be sampled when present. Biopsies that include the margin of pigmented and non-pigmented skin can also be submitted.

- Nodules: discrete nodules should be removed entirely via wide excisional biopsy. This allows evaluation of margins in lesions which prove to be neoplastic, with the added benefit that the excision may prove curative.

Biopsy multiple sites

- With the exception of very localized lesions, it is appropriate to submit multiple skin biopsies. The more tissue available for evaluation, the more information the pathologist can provide. It is not uncommon for defining features of a disease process to be present only in some or even one of the submitted punch biopsies.

- In our laboratory, 3-4 individual punch biopsies are bisected and processed on a single slide, and additional charges per site are incurred only when 3 or more slides are required for processing.

Technique

- Trim the hair with scissors (do not shave). If necessary, wash the biopsy site gently with plain water and pat dry. A surgical scrub should not be performed prior to skin biopsy.

Note: surgical preparation of the site prior to biopsy of subcutaneous lesions or excisional biopsy of large nodular masses (i.e., neoplasms) is appropriate.

- When injecting local anesthetic, be sure that the entry point of the needle is outside of the area to be biopsied and that anesthetic is not injected into the biopsy site.

- For punch biopsy of haired skin areas, a 6 or 8 mm punch biopsy tool is usually preferred. 4 mm punch biopsy tools are generally reserved for sampling of footpads, nasal planum, or periocular lesions, for use in very small animals, or in other instances when use of a larger tool is impractical.

- When obtaining samples with punch tools, biopsies should NOT be taken at the edge of a lesion, as this may result in the lesional portion of the tissue being lost or under-represented during processing. If examination of the margin between the lesion and normal skin is desirable, a wedge or elliptical biopsy should be obtained.

- Be sure that your biopsy instrument is sharp. Re-use of sterilized punch biopsy tools is not recommended, as these become dull and will result in significant crush artifact.

- Handle tissue gently! Crush artifact can greatly hinder interpretation. Punch biopsies should be grasped very gently at the base (panniculus) to allow severing of the remaining subcutaneous attachment with scissors or scalpel. Forceps can be used to gently grasp the edges of incisional biopsies, avoiding lesional skin.

- Place small biopsies immediately in 10% neutral buffered formalin to prevent desiccation.

- For thin wedge and excisional biopsies, it is beneficial to stabilize the sample in order to prevent curling or twisting of the tissue during fixation. Place tissue, subcutis down, on a thin piece of rigid cardboard or a portion of a tongue depressor and allow tissue to adhere, then place the sample in fixative. Do not delay fixation for longer than 30 seconds, as even larger biopsies are susceptible to desiccation. Note: this technique should not be used to indicate biopsy site, as tissue frequently detaches during fixation/transit.

Referrals: In some cases, consultation with and/or referral to a veterinary dermatologist may be desired. To look for a board certified veterinary dermatologist in your area, visit the American College of Veterinary Dermatology website at <http://www.acvd.org/>

RECOMMENDED REFERENCES

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Gross TL, Ihrke PJ, Walder EJ, Affolter VK. *Skin Diseases of the Dog and Cat*. 2nd ed. Oxford: Blackwell. 2005.

Hargis AM, Ginn PE. The Integument. In: McGavin MD, Zackary JI, eds. *Pathologic Basis of Veterinary Disease*. 4th ed. St. Louis: Mosby-Elsevier. 2007:1107-1261.

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