Guide for Dermatology Biopsies

BY JULIA E. MILLER, DVM, DACVD

Skin biopsies are an integral part of advanced dermatologic diagnostics, and they should not be used as a "last resort." Below is a general guide to follow when taking skin biopsies.

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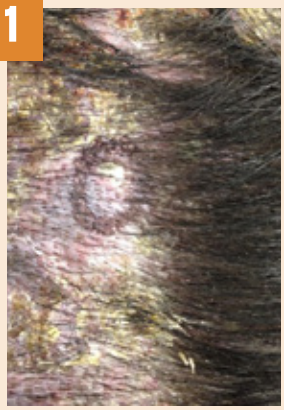

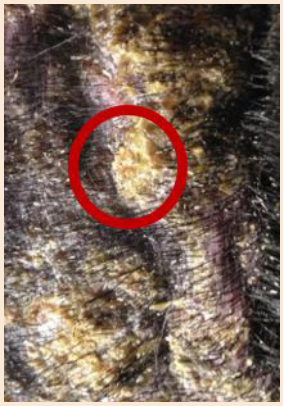

Lesion selection

Primary lesions (pustules, papules, plaques, etc.) are recommended if present. If there are no primary lesions, choose the most active secondary lesion. For example, choose a light-colored crust with exudate beneath it over a dark, dry crust.

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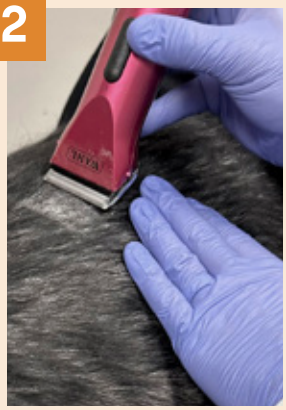

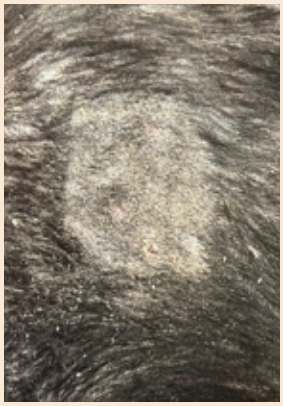

Do not surgically prep the area

Close clipping and prepping with antiseptic solutions will remove the surface abnormalities that may be essential for an accurate diagnosis. Crusting dermatoses must have crusts submitted!

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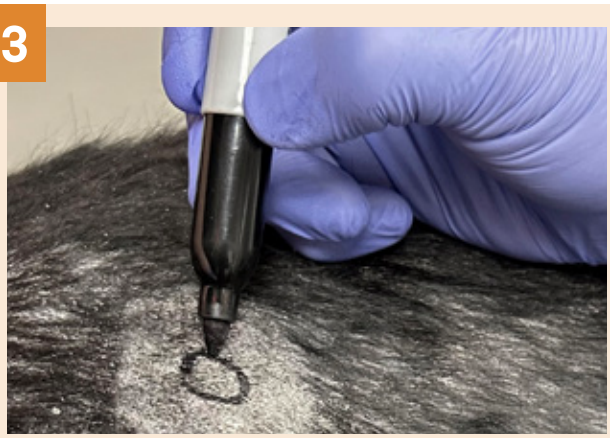

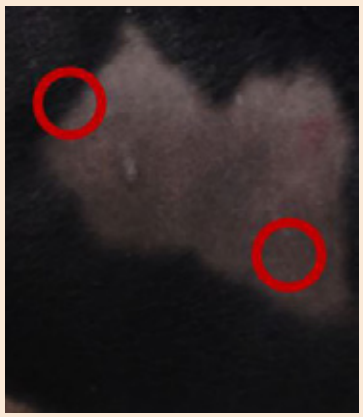

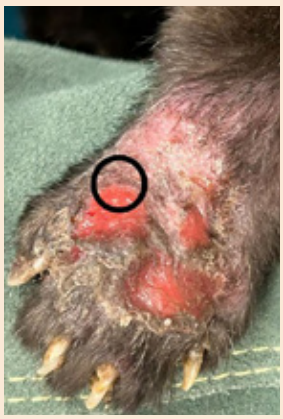

Site selection

Do not choose the "junction of normal and abnormal." For most dermatologic lesions, taking a biopsy directly in the center of the lesion will yield the best results. Exceptions to this rule are ulcerated and alopecic lesions. A junctional biopsy is necessary in ulcerated skin and an elliptical, not punch, biopsy should be taken to avoid laboratory sampling error. For alopecic skin, it is recommended to take several samples from affected skin and one from "normal" skin.

Photos courtesy of Andrew Simpson, DVM, MS, DACVD

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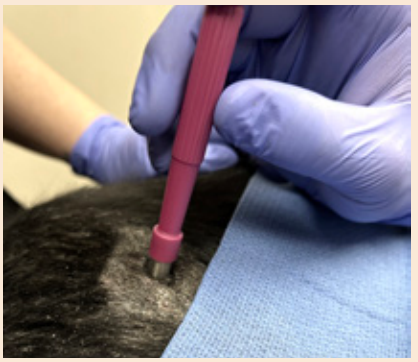
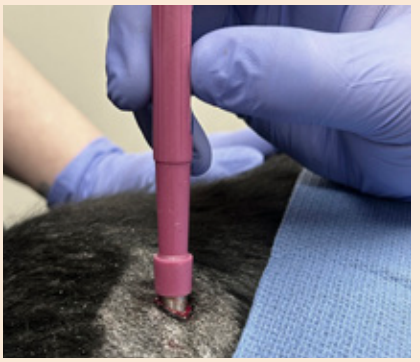
Biopsy technique

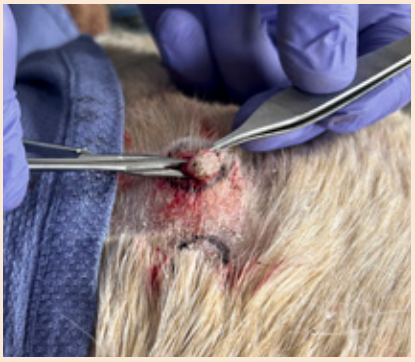
Local lidocaine infusion into the subcutis directly under the biopsy site provides excellent analgesia and allows for biopsies to be taken without sedation in some patients.



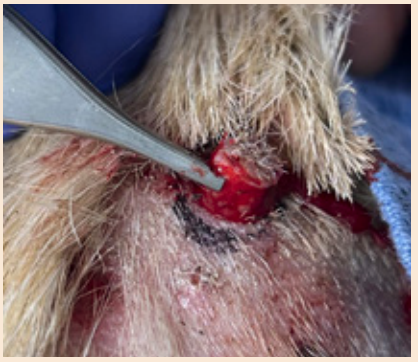
Punch biopsies provide the most efficient sampling method and the standard size that offers the most information is a 6mm punch. Do not reuse punches as they become dull and will damage the sample.



When performing a punch biopsy three things are important: skin tension, punch pressure, and punch rotation. A unidirectional rotation of the punch is recommended for fragile lesions.



Gentle sample handling is critical! Do not handle the dermal plug with forceps as this will create significant crush artifact that may invalidate the sample. Instead, use forceps to grasp the deep, subcutaneous tissue attachment before excising.



When possible, take at least 3 biopsy samples. The histopathologic diagnosis may not be found in all samples and multiple pieces provide the best chance for an accurate diagnosis.

Place samples in 10% neutral buffered formalin solution in one jar. If you practice where temperatures stay below freezing, do not allow the formalin to freeze before the sample fixes as this creates freeze artifact which may invalidate the sample. Instead, keep the jar in the clinic for 24 hours before shipping or add isopropyl alcohol to the formalin (1:9 ratio) to prevent freezing.

5 Laboratory submission

It is ideal to choose a laboratory that specializes in dermatopathology as interpreting the histopathology of inflammatory skin diseases requires a high level of skill and expertise. Always include a detailed history. Clinical photographs are usually very helpful as well.

6 Interpreting results

Dermatopathology is not a perfect science and in some cases, samples may not provide a definitive diagnosis. If the results do not fit the clinical picture of the patient, contact the laboratory to discuss the case with the pathologist as special stains, deeper sections, etc. may be necessary.