

Best Practices in Laboratory Testing

December 2011

Information for Providers

The Optimal Skin Biopsy: From Clinical Impression to Diagnosis

Jena Martin MD
Dermatopathologist

While performing a skin biopsy is a relatively easy procedure, the process of interpretation and integrating results into clinical decision making is not always straightforward. Performing the right type of biopsy of the most representative lesion ensures diagnostic results. While other texts describe the mechanics (performance and procedure) of skin biopsy, this article is intended to help clinicians choose the correct type of biopsy in order to optimize the information they get back from pathologists.

What information do you hope to get from the biopsy (what is the intent of the biopsy)?

Overlap exists, but the three main reasons for biopsy would be diagnosis, cosmetic, and removal. This article covers those lesions removed for diagnosis.

Your understanding of the lesion clinically starts the diagnostic algorithm. For example, if you are concerned a pigmented lesion is a melanoma, you would perform an excisional biopsy. If the lesion proves to be a pigmented seborrheic keratosis, a shave biopsy would have been more appropriate. Honing your clinical acumen improves the experience of the patient.

What you suspect the lesion to be drives the type of biopsy you will perform, whether shave, punch, or incisional/excisional biopsy.

Shave Biopsies: Appropriate for skin lesions with a minimal dermal component, such as: warts, actinic keratoses, seborrheic keratoses, acrochordon, or fibrous papules of the nose. The pathologist will be able to

Phone

612-863-4678

800-281-4379

Fax

612-863-4067



**ALLINA
MEDICAL
LABORATORIES**

Allina Hospitals & Clinics

examine the epidermis and typically the upper dermis (less than 1mm). Margins for shave biopsies are typically reported for carcinomas, atypical nevi and melanoma. A negative margin does not necessarily indicate a true negative margin; accurate margin status is rendered with an elliptical excision that is oriented (see figure 1 below)

Punch Biopsies: Appropriate for cutaneous neoplasms, pigmented lesions, inflammatory lesions and chronic skin disorders such as a panniculitis. If a neoplasm is suspected, the biopsy should be performed on the thickest area of the lesion. Because the punch biopsy does not provide a wide sample, the diagnosis can be affected; if you do not obtain a representative area, the final diagnosis from pathology will not represent the overall process. As with shave margins, margins for punch biopsies are typically reported for carcinomas, atypical nevi and melanoma. A negative margin does not necessarily indicate a true negative margin; accurate margin status is rendered with an elliptical excision that is oriented (see below).

Incisional Biopsies: Sample of a larger lesion. Incisional biopsies, or any sort of partial removal, requires informing the pathologist of this fact. Particularly when pigmented melanocytic lesions are partly sampled, the clinician needs to let the pathologist know that the material sent to pathology may not be representative.

Excisional Biopsies: Larger lesion, removed in entirety with surrounding normal tissue. Some reviews consider a saucerization biopsy as a type of excision, although an elliptical excision has been conventionally recommended. Saucerization essentially acts as a deep shave biopsy, demonstrating the mid to deep dermis. However, margins for saucerization are not as reliable as for elliptical excisions.

Elliptical excisions are interpreted with margins; if the ellipse is received with an orienting suture, designated '12 o'clock', the pathology lab will designate the peripheral edge with ink in a clockwise manner. The narrow poles, called tips, are separately inked. If a margin is positive in an oriented ellipse, the pathologist will be able to tell you which of four quadrants is involved. If the ellipse is received unoriented, the narrow poles (tips) are separately examined but they are not differentially inked. If a margin is positive in an unoriented ellipse, the pathologist will not be able to tell you which area is involved.

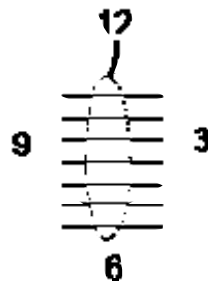


Figure 1

Clinical description of the lesion improves diagnostic accuracy

While pathologic examination is often assumed to occur in a vacuum, in dermatopathology nothing could be further from the truth. The clinical description guides histopathologic examination. Pathologists provide possible differential diagnoses for the process they observe, and clinical information is particularly important in cases with subtle findings (e.g. vitiligo, ichthyosis). Information gathered as part of a typical clinical skin examination is important to convey in your pathology requisition, including:

1. Type of lesion (flat/palpable, elevated/depressed)
2. Shape (i.e.; round/annular/serpiginous)
3. Arrangement (i.e.; grouped/disseminated)
4. Distribution (i.e; single vs. multiple/pattern)
5. Duration (i.e. recent onset, seasonal variation, etc.)

Caveats

Skin biopsy results can be non specific – e.g. acute rashes – and the descriptive nature of the pathology diagnosis is best interpreted by a dermatologist.

Blistering conditions may be evaluated with both biopsy for general hematoxylin and eosin examination and biopsy for direct immunofluorescence studies. Many blistering conditions (pemphigus, bullous pemphigoid, cicatricial pemphigoid, herpes gestationis, epidermolysis bullosa acquisita) can be excluded with a perilesional biopsy submitted for direct immunofluorescence. Perilesional does not mean part normal and part lesional tissue; it means a biopsy of skin very near the blister itself, but not clinically involved. A blister site sent for direct immunofluorescence will not show antigen deposition, and will be interpreted as negative. Biopsies for bullous pemphigoid performed on the leg have an increased number of false negative reports as the bullous pemphigoid antigen is less prevalent on the lower extremities. Significant exceptions to the perilesional site guideline include: dermatitis herpetiformis (biopsy normal skin), and lupus/DLE (biopsy lesional skin).

If you are faced with any type of skin lesion that you are unsure of how to approach, a Board Certified Dermatopathologist is available through Allina Medical Laboratories during regular business hours for consultation. Call 612-863-4630.

For questions, comments, or suggestions about this newsletter or other laboratory issues, please contact Lauren Anthony, MD, Medical Director of Allina Medical Laboratories, (612) 863-0409 or Lauren.Anthony@allina.com