HOW TO GET THE MOST OUT OF YOUR BIOPSY

MAREN CHAN, MD
AURORA DIAGNOSTICS SOUTH TEXAS
SAN ANTONIO, TX

• How to get the most information from your skin biopsies
• What to expect from your pathology laboratory

Goals
• Provide an overview and enhance your understanding of how a skin biopsy is obtained and processed
• Taking a biopsy
• Submitting the biopsy
• Processing the biopsy at the lab
• Interpreting the biopsy report
• Help you maximize the return on the skin biopsies that you perform
OVERVIEW OF LABORATORIES

• Hospital Labs and Corporate Labs
  – Anatomic pathology
    • Skin, Internal Organs, Pap Smears
  – Clinical pathology
    • Blood, Urine, Sputum

• Specialty Labs
  – Dermatopathology

• Individual In-House Provider Labs
  – Dermatology
  – Gastroenterology

AURORA DIAGNOSTICS
SOUTH TEXAS DERMATOPATHOLOGY

SERVICES PROVIDED

• Specialty lab within a larger corporation
• Routine processing and H&E staining
• Special stains and immunohistochemistry library (PAS, Gram, GMS)
• Tzanck smears
• Direct immunofluorescence testing
LIFE OF A BIOPSY

• Why do a skin biopsy?
• Obtaining the biopsy
• Submitting the biopsy
• Processing the biopsy
• Interpreting the biopsy

Why do a skin biopsy?

• Establish a diagnosis, or narrow the diagnostic possibilities for an unknown condition or lesion

• Confirm what you suspect

• Establish a “baseline” diagnosis for a condition prior to treatment (ex: psoriasis)

What is the best biopsy to do?

Where is the pathology?

• Epidermal (ex: flat wart)

• Epidermal + Dermal (ex: BCC, SCC)

• Dermal (ex: DF)

• Subcutaneous (ex: lipoma)
What is the best biopsy to do?

In general
• Epidermal → shave
• Epidermal + Dermal → deep shave/saucerization
• Dermal → punch or excision
• Subcutaneous → deep large punch or excision

What is the best biopsy to do?

Inflammatory (rash)
• Widespread:
  1. Shave (macular)
  2. Punch (better, especially if papular component)
  3. Multiple specimens, lesions in various stages of evolution (can combine in one container)

What is the best biopsy to do?

Inflammatory (rash)
• Localized:
  1. Deep shave or punch
  2. Edge or edge + center if evolving/expanding
  3. Consider adjacent uninvolved skin for comparison (ex- vitiligo)
  4. Deep large punch or excision (ex- panniculitis)
What is the best biopsy to do?

**Neoplastic**

**Benign**: (tags, sebs, warts)
- Shave, curette
- OK to combine, however, any “outliers” should be submitted separately or clearly identified as to location

**Malignant** (BCC, SCC)
- Shave, punch, excise
- Need dermis *(it should bleed!)*
- Curette *(ok, if dermis included and dx fairly certain)*
- Lips and ears (worse prognosis)

What is the best biopsy to do?

**Neoplastic**

- Widespread (ex- Mycoses Fungoides)
  - Multiple broad shaves or punches (can combine)
- Localized (nodule or tumor)
  1. Deep shave/saucerized
  2. Punch
  3. Excision
Nevi

• Benign
  (cosmetic removal of intradermal nevus)

Shave, punch or excision
** any unusual features (asymmetry, boarder irregularity, color variegation, diameter >5mm, recent growth) should prompt saucerized excision or complete removal by large punch or excision.

Nevi

• Dysplastic Nevi
  1. Ideally broad shave with narrow margin of normal skin
  2. Deeper shave or saucerized excision if central papular component

Punch biopsy of pigmented lesion??

• OK if punch removes all (or most) of the lesion.

• BEWARE Punch biopsies of pigmented lesions may not be representative of the entire lesion!!! (Tell us how big it is!)
If you’re worried about melanoma

Malignant melanoma in situ (“lentigo maligna”)
• Broad shave
• If papular, nodular or indurated area: deep punch or excision/incision
• “surveillance” biopsies for large pigmented lesion
  (give us a map or picture!)

Invasive Melanoma
• Complete excision
• Incisional if large (go for nodular, indurated area)
• Avoid regressed (white) areas (may miss dx)

Pigmented Nail
Longitudinal Melanonychia

Recommend referral to surgical dermatologist with experience in this area.

*Take a picture!*
Alopecia

Ideally:
• 2.4 mm punch biopsies, active and control (usually occipital)

• Direction of hair growth into fat

• Identify as “alopecia case” on slip

• History critical! (localized, generalized duration, distribution etc)

Biopsy for infection?
Sure!

However:
• Organisms cannot be cultured from fixed tissue

• Special stains can help but a negative result doesn’t exclude the diagnosis (PAS, GMS, FITE, GRAM)

• Punch or excision/incision best

• Need intact skin (avoid center of ulcer and abscess or include epidermis and dermis in specimen)

• Keep a piece in sterile saline for possible culture

What about biopsy for immunofluorescence?

• Bullous diseases: perilesional, can include portion of blister, avoid erosion or old lesion

• LE: lesional and/or sun exposed skin

• Mucosal: lesional and/or perilesional

• Submit in Michel’s media: we supply

• Indicate “biopsy for DIF” on slip

• Submit specimen for routine H&E as well
Types of Transport Medium

- Formalin
  - Routine H&E
- Michel’s medium
  - Immunofluorescence (Lupus, Vasculitis, Bullous)
- Bacterial tissue culture
- Saline
  - Best for pan tissue culture (mycobacterial, fungal, bacterial)

Requisitions

- Two patient identifiers (CAP accreditation requirement)
  - Name
  - Date of birth
- Site clarifications
  - Avoid abbreviations
  - Prevents calls to office
  - Prevents modifying reports
- Avoid specimen mix-ups!!!!
  - 1 biopsy
  - 1 bottle
  - 1 label
General Philosophical Principals
How to REALLY get the most out of your pathologist!

1. **HISTORY, HISTORY, HISTORY!**

2. A picture is worth a thousand words!

3. Tell us what **YOU** think and suspect

4. Call (or email) us!!
Finally…

Think of us as your “ectopic” brain, here to help you arrive at a diagnosis and assist you in any way we can to ensure the best possible care for your patients!

FAIR AND BALANCED

• Clinician’s perspective
• Dermatopathologists’s perspective

THAT IS TO SAY,

We will be looking at the issue . . .
FROM BOTH SIDES OF THE SCOPE!

REMEMBERING THAT . . .
there are always two sides to every story!!

LESSONS LEARNED
TAKE HOME POINT:

• Take time to communicate accurately, thoroughly, and honestly!
• Communication is KING and both parties should always aim for open dialogue

As in any relationship, both parties (clinician/pathologist) have ROLES and RESPONSIBILITIES to ensure that the patient is well served.

OVERVIEW

• What dermatopathologists should bring to the table
• How you, as practicing health care professionals, can help your dermatopathologist best serve you and your patients
• Looking at some cases that illustrate these principles
Before any case is signed out, the dermatopathologist should do his or her homework. One size DOES NOT fit all!!
Engage the client and find out preferences with regard to wording and formatting of reports, preferred terminology, practice style, and specific “likes or dislikes”

• It is the responsibility of the dermatopathologist to ensure that both parties are on the same page

• Our job is to make your job easier and not to complicate it

TO THAT END . . .

you should expect a call from your dermatopathologist, perhaps several early in the relationship, as he or she attempts to fine tune the sign out to better meet your needs and those of your patients.
AND, THE COROLLARY TO THAT:

Your dermatopathologist should be grateful for and receptive to any feedback that you provide

AND THE ROLE OF THE CLINICIAN

HINT: IT ALL COMES BACK TO EFFECTIVE COMMUNICATION
7 KEY PRINCIPLES

PRINCIPLE ONE

HISTORY IS EVERYTHING!!!

History

• You can never give too much information
  – Prior malignancy
  – Prior biopsy of similar problem
• Good descriptions and relevant differentials are essential
  – Are you worried about this melanocytic lesion?
  – Differential for inflammatory dermatosis
• Clinical images are even better
FAR TOO OFTEN, REQUISITIONS COME IN LIKE THIS:
PRINCIPLE 2

SAY WHAT YOU MEAN AND MEAN WHAT YOU SAY

If you generate the same differential for every case, your history becomes meaningless.
PRINCIPLE 3

PROOF YOUR REQUISITIONS SLIPS!! (A BIGGIE)
SOME FAVORITES:

• “Rule out sexema”
• “Rule out soriass”
• “Rash in growing”

OTHERS (RELATED TO BX SITE):

• “Ball sac”/ “Nut sack”
• “Lips of the privates”
• “Butt cheek”
• “Boobie”
• “Tit”
• “Chaw Line”

PRINCIPLE 4

EMRs have corrected a lot of the errors and made transmission of information and specimen tracking easier BUT . . .

the fields are not always cleared between patient visits and the requisition slips should be proofed for accuracy.
AS OF LATE:

• NÜBS
• RUBS

PRINCIPLE 5

If the patient has a widespread dermatosis or a very large lesion, consider taking multiple biopsies (preferably from lesions in different stages of development) and place them in the same bottle. It is the most cost effective approach.

PRINCIPLE 6

BE AWARE OF SAMPLING ERROR
IF YOU GET A REPORT THAT DOESN’T JIVE:

• Call your dermatopathologist and ask for the case to be reviewed and/or additional step sections to be cut
• Don’t hesitate to rebiopsy

PRINCIPLE 7

DON’T HESITATE TO ASK FOR A SECOND OPINION OR CHALLENGE A DIAGNOSIS WHEN APPROPRIATE
EXAMPLES

DIAGNOSTIC ACCURACY CONFOUNDED BY LACK OF HISTORY

58 year-old male

• Nail plate submitted to another lab with no clinical history
• PAS stain was done and the case reported out as onychomycosis
• Diagnosis was correct BUT there was more to the story
18 months later the patient presented to a dermatologist with an enlarging longitudinal melanonychia; and, the patient reported that the nail plate was removed the prior year for evaluation of the same streak
In the second example...

the biopsy requisition slip only indicated that the patient was a 36-year old female.

and, in the absence of clinical history
DDX IS RELATIVELY BROAD:

- Lichenoid drug eruption
- Lichenoid photodermatitis
- Pityriasis lichenoides
- An unusual expression of lichen planus
- And, if the lesion is solitary, a benign lichenoid keratosis

FAR FROM A GRATIFYING EXPERIENCE FOR ANYONE!

SPONGIOTIC DERMATITIDES

Range of histologic changes demonstrated by a variety of conditions is quite narrow

CPC IS KING!!!!

WHEN INADEQUATE HX CAN LEAD YOU ASTRAY
• 68 year-old male
• Lesion on scalp
• Rule out “atypia”

In actuality, the lesion was a large pigmented patch and there was clinical concern for melanoma. When it persisted despite treatment with liquid nitrogen, a repeat biopsy was obtained approximately 6 weeks later . . .
A diagnosis of malignant melanoma in situ and actinic keratosis was rendered.

Lesion was excised and clear margins achieved with “slow-Mohs”.

An example of inadequate history coupled with sampling error.

AND, THEN OF COURSE, THERE IS THE CLASSIC SAMPLING ERROR.
• 57 year old female
• Pearly, eroded papule on the cheek
• Clinically concerning for basal cell carcinoma
AS AN ADDITIONAL SUGGESTION

- Small biopsies of large pigmented lesions may not be representative of the lesion as a whole. If you are concerned about possible melanoma and the lesion is large, consider multiple biopsies or an incisional biopsy.
- Please include the size of the lesion in your clinical description; and, if you actually favor melanoma clinically, SAY SO!

CLOSE OUT WITH A COUPLE OF EXAMPLES DONE CORRECTLY!

AS A RULE:

- Most dermatopathologist will examine sections initially without benefit of history.
- Only after arriving at a reasonable differential diagnosis will the history be used to refine the diagnostic considerations.
DIFFERENTIAL DIAGNOSIS INCLUDES:

- EAC
- PITYRIASIS ROSEA
- SUBTLE EXPRESSION OF ALLERGIC CONTACT DERMATITIS, NUMMULAR DERMATITIS, AN ID REACTION
- SPONGIOTIC DRUG ERUPTION

ACCOMPANYING HISTORY:

- 24 year old male
- 3 week history of oval, scaling papules on the trunk
- Rule out psoriasis, secondary syphilis, guttate psoriasis
On the basis of the changes in the H&E stained sections and the accompanying clinical history, a diagnosis of “Focal spongiotic dermatitis, favor pityriasis rosea” was rendered.

EXAMPLE 2
CD30 POSITIVE LYMPHOPROLIFERATIVE DISORDER

• ??LyP

• ??ALCL

• 18 year old male

• Papules and nodules on trunk which come and go

DIAGNOSIS:

Lymphomatoid papulosis
SUMMARY

• We each have our part to play
• Effective communication ensures that we are allies and not adversaries

QUESTIONS??

Welcome you to visit the lab anytime
Huge number of teaching slides on site
mchan@auroradx.com/617-319-6667