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L.E. DERMATOLOGY UPDATES

Dockery GL: *Cutaneous Disorders of the Lower Extremity*,
Before you excise or surgically remove any skin lesion:

Get a biopsy confirmation of diagnosis!!
Are CPT 11100 & 11101 on your superbill??
VERY IMPORTANT!!

Before you excise or surgically remove any skin lesion:

Get a biopsy confirmation of diagnosis!!
So, we should biopsy every skin lesion before removing it? There are some exceptions, but let’s use this:
There are some exceptions:
BIOPSY: Taking a Small Piece of Tissue for Microscopic Evaluation
BIOPSY: Taking a Small Piece of Tissue for Microscopic Evaluation

<table>
<thead>
<tr>
<th>Normal:</th>
<th>The skin sample consists of normal skin tissue.</th>
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<tbody>
<tr>
<td>Abnormal:</td>
<td>Noncancerous (benign) growths are seen. Benign growths do not contain cancer cells. Benign skin changes include moles, skin tags, warts, seborrheic keratoses, keloids, cherry angiomomas, and benign skin tumors, such as neurofibromas or dermatofibromas.</td>
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<tr>
<td></td>
<td>Cancer cells such as basal cell cancer, squamous cell cancer, or melanoma are present.</td>
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<td>Other diseases such as lupus, psoriasis, or vasculitis are present.</td>
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<td>A bacterial or fungal infection is present.</td>
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BIOPSY INDICATIONS

WHEN IS IT REALLY NECESSARY?

- When condition isn’t responding to treatment in a reasonable amount of time
- When you don’t know what condition is
- When you want verification of diagnosis
- If malignancy is in differential diagnosis
- Any pigmented lesion > 6 mm diameter
- When patient is concerned about condition

BIOPSY TECHNIQUES

DO YOU NEED A CONSENT FORM?

BIOPSY CONSENT

During your visit, the doctor may need to perform a skin biopsy to evaluate your skin condition. Please review and sign below. You will be given ample time to discuss the procedure if the doctor determines that a skin biopsy is necessary.

PATIENT NAME: ___________________________ TODAY’S DATE: _____________

PURPOSE:

A biopsy is a surgical procedure used to obtain a sample of tissue for microscopic examination to aid the physician in diagnosis. A small portion or the entire lesion may be removed in this procedure. Further medical or surgical treatment may be needed when the diagnosis is made.

PROPOSED TREATMENT:

I understand that a biopsy requires obtaining a sample of tissue and is a surgical procedure.

As in any surgical procedure, there are certain inherent risks including bleeding, post-operative pain, infection, reactions to sutures, anesthetics or topical antibiotics, and scarring.

Although all reasonable efforts will be made to minimize the possibility of these potential complications, no guarantees can be made since many factors beyond the control of the physician (such as the degree of sun damage or patient compliance with post-operative instructions) affect the ultimate healing.

A dermatopathologist will examine the tissue obtained in this biopsy procedure. I understand that I will receive a separate bill from the pathologist or laboratory for this microscopic examination.

OTHER ACKNOWLEDGMENT DISCLOSURES:

I am able to read and understand English.

CONSENT:

PATIENT (OR LEGAL GUARDIAN) SIGNATURE: ___________________________

TODAY’S DATE: ______________

PHYSICIAN SIGNATURE: ___________________________ DATE: ____________
Once I do a biopsy and get a definitive diagnosis, how do I know how much of margin I should take when I remove it?

Current Recommendations of margin borders

- **Benign**: 0-1 mm margins
- **Dysplastic nevi**: 1-2 mm margins
- **Most BCC**: narrow margins (2 mm)
- **Infiltrating BCC**: 2-3 mm margins
- **Most SCC < 2 cm**: 3-4 mm margins
- **SCC > 2 cm**: 6 mm margins
- **MMIS**: 2-5 mm margin to subcutis
- **MM < 2 mm in depth**: 1 cm margin
- **MM > 2 mm in depth**: 2 cm margin


BIOPSY TECHNIQUES

SKIN PREPARATION:

- Clean Skin of Debris or Soil
- Prep with 70% Isopropyl Alcohol* (or Chlorhexididine or Betadine solution)

- Dzubow LM et.al.: Comparison of Preoperative Skin Preparations, JAAD, 19(4):737-741, 1988
BIOPSY TECHNIQUES

ISOPROPYL ALCOHOL

A 10 sec. Scrub with isopropyl alcohol (70%)

equals: 60 sec. isopropyl alc. scrub
5 min. povidone-iodine scrub
5 min. chlorhexidine scrub

Dzubow LM et.al.: Comparison of Preoperative Skin Preparations, JAAD, 19(4):737-741, 1988
BIOPSY TECHNIQUES

Anesthesia Injection Technique:

- 1 ml Syringe (locking)
- 30 g Needle
- 30-45° Angle to Skin
- Bevel of Needle Down
- Inject Dermis/Subcutaneous
BIOPSY TECHNIQUES

TYPES OF BIOPSIES:

- SHAVE BIOPSY
- SAUCERIZATION BIOPSY
- PUNCH BIOPSY
- INCISION BIOPSY (if large)
- EXCISION BIOPSY (if small)

DOI: http://dx.doi.org/10.1016/j.jaad.2015.06.03
BIOPSY TECHNIQUES

SHAVE BIOPSY TECHNIQUE:

- No. 15 Scalpel Blade (preferred)
- No. 10 or 22 Scalpel Blade
- 4.0+ Punch Biopsy
Biopsy Techniques

**SHAVE BIOPSY**

Scalpel Blade

For elevated, pigmented or small based benign lesions. Limited use in plantar foot pathology cases, except superficial lesions.
Biopsy Techniques

**SHAVE BIOPSY**

Consider Integra Miltex Silicone Scalpel Blade

![Integra Miltex Silicone Coated Surgical Blade No. 15, 100/box. MFID: 4615](image)
Shave Biopsy: Scalpel blade - For elevated, pigmented or small-based benign lesions. Always include dermis!
Shave Biopsy: Scalpel blade
For elevated or small-based benign lesions
Basic Shave Biopsy Set-up Tray
SAUCERIZATION

BIOPSY:
(Usually Deeper than Shave)

Razor Blade or BiopBlade (Preferred)
BIOPSY TECHNIQUES

Sharpness of Blades:

RESULTS:

The sharpest blade is the double-edged razor blade (0.395 N) followed by the BiopBlade (0.46 N), plastic handled #15 (0.541 N), #10 (0.647 N), and the #15 blade (0.664 N).

RAZOR BLADE TECHNIQUE

Blade Breakers

USE BLADE BREAKER TO SEPARATE HALVES OF RAZOR SEPARATE PIECES

RAZOR BLADE TECHNIQUE

USE BLADE BREAKER TO SEPARATE HALVES OF RAZOR

SEPARATE PIECES

SHAVE SPECIMEN

SAUCERIZATION BIOPSY
SAUCERIZATION BIOPSY
Surgical Pearl: The Pendulum or “Scoop” Biopsy
Robert L. Buka, MD, JD and Rachel C. Ness, MD

The dermatologist’s technique for sampling skin has remained relatively unchanged over the last 10 years. Exophytic lesions are typically shaven, while deeper processes are sampled with a punch biopsy. However, we have found that these two techniques are often impractical and cumbersome in their application to some cutaneous morphologies. We introduce a technique which employs a punch biopsy-pen to perform a shave or “scoop” excision. This method is ideally designed for those lesions in which a deep shave is required, but a straight blade is awkward to apply flush with the skin surface. The potential disadvantage of shaving a flat lesion or plaque is the inability to achieve a sufficiently deep or representative sample.
SCOOP BIOPSY
(using Punch Biopsy)

SCOOP BIOPSY (using Punch Biopsy) has remained relatively unchanged over the last 10 years. Laseric cutaneous biopsies are typically done, while deeper tissue is sampled with a punch biopsy. However, we have found that these two techniques are often impractical and cumbersome in their application to some cutaneous neoplasms. We introduce a technique which employs a punch biopsy to perform a deeper “scoop” excision. This method is ideally designed for those lesions in which a deep shave is required but a standard shave is awkward to apply with the skin surface.

The potential disadvantage of shaving a lesion or plaque is the inability to achieve a sufficiently deep or representative sample. Oftentimes, placing a blade horizontally against the skin’s surface and shaving parallel makes it impossible to gain an adequate sample size. Alternatively, if one tilts the blade at a 45-degree angle and “rips” the sample, this results in suboptimal histopathology and healing. Checking ensures that adequate sampling is achieved and taking an adequate histopathology specimen is readily available. This scoop also results in a smooth biopsy edge which heals in less trauma and scarring is rapid leading to a better scar. The scoop has the added benefit of shaving enough depth so as to make prognostication more accurate in cases of suspected malignancy.

The size for sampling is chosen to ensure the highest yield. The scoop biopsy may be performed with a punch biopsy of any width. The tools necessary for a punch biopsy are similar to those required for a scoop biopsy: standard surgical instruments, the KwikSaw (2 mm or 3 mm punch,” unstabilized.” Countertraction is applied with limited manipulation while the punch is retracted to avoid puncturing the skin surface. The punch is then inserted into the skin like a penknife (Figure 1). Once the tissue is removed, the subcutaneous tissue is visualized and a monopolar or other appropriate hemostatic agent or Drytex sponge applied for hemostasis. It is then

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**Figure 1.** Standard 4 mm punch biopsy-pan prior to scoop biopsy of a suspected basal cell carcinoma on a patient's left chest.

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**Figure 2.** The resultant defect immediately following scoop biopsy. Monsel’s solution was applied for hemostasis.
BIOPSY TECHNIQUES
For Dermatitis and macular lesions

PUNCH BIOPSY

- Sizes Vary: 2 to 4 mm Usual Diameter
- Reusable (Set can be autoclaved)
- Disposable: Most Practical, Sharp and Sterile
Biopsy Techniques
Disposable Punch Biopsy Sets:

- Most useful type of biopsy
- Always sharp
- Always sterile
- 2, 3 & 4 mm—most common sizes
Size Relationship:

- 1 mm
- 2 mm
- 5 mm

Centimeters (cm):

- 0
- 1
- 2
- 10 mm
3.5 mm or Larger Punches

- Spread Skin with Thumb - Index Finger against relaxed skin tension lines
- Place Traction on Either Side of Lesion
- Align with Skin Lines/Creases
- Create Oval Defect
Circular Mark with Continued Tension

Oval Mark with Relaxation
BIOPSY TECHNIQUES

PUNCH BIOPSY

- Vertical ‘Light’ Pressure
- Rotate Back & Forth (cookie cutter)
- Take Full Skin Thickness to SubQ
- Careful of Underlying Tissues: Nerves, Blood Vessels, Tendons, Bone
PUNCH BIOPSY
Spread Skin with Thumb - Index Finger

How deep does the biopsy go?
To whatever depth necessary to include *dermis* and *subcutaneous tissue* in punch specimen.
Anesthetic Infiltration for Biopsy

- Punch and Excisional Biopsy
- Shave and Curette Biopsy

Use just enough local to raise a wheal.
BIOPSY TECHNIQUES

ALWAYS GO TO SUBCUTIS LAYER WITH PUNCH
BIOPSY TECHNIQUES

ALWAYS GO TO SUBCUTIS LAYER WITH PUNCH

ALWAYS PICK UP SPECIMEN IN DEEP LAYER
Punch Biopsy

- Alcohol swab/wipe area 10 seconds
- Infiltrate *scant* anesthesia at biopsy site (with epi)
- Press and turn punch into skin
- Continue through dermis to subcutis
- *Gently* pull plug out and cut connective tissue base

Closure / Stasis
- Suture closure for punches 3.5mm or larger
- Steri-strip or nothing may be needed for smaller punches

- Topical antibiotic and bandage
Basic Punch Biopsy Set-up Tray
Punch Biopsy

Use small scissors and handle sample gently
Punch Biopsy

USE SMALL SHARP DISSECTING SCISSORS

(Instead of forceps)
Ideally, you should consider obtaining two 2mm punches, rather than one 4mm punch.

Miltex® 2.0-mm Punch Biopsy Unit with Plunger
Where to Biopsy

- Most representative site
- Darkest area
- Highest most elevated area
- Blister or vesicle, if present
- Active edge/border

**AVOID:**
- Central area of lesion (unless it is one of the above criteria)
- Normal skin (dermatopathologist do not need normal tissue)
- Healed looking areas

Very asymmetrical pigmented lesion
One from darkest area and one from representative area
Annular shaped dermatitis

Avoid central clear areas
Take two 2-mm punch biopsies from ‘representative sites’ of all dermatitis conditions.

Send a clinical picture to the Pathology Lab with biopsy.
BIOPSY TECHNIQUES

PUNCH BIOPSY

LESION DEFECT CLOSURE:

1. Hemostasis + Bandage
2. No Sutures for 2 or 3mm Biopsies
3. 1 or 2 Nylon Sutures 3.5 or 4 mm Biopsies
CASE REPORT

A 62 year-old white male presents with rough warts on the outside area of both heels and ankles.

They have been present for several years and appear to be increasing in size and numbers.

They do not bleed when removed but quickly return.
WHAT IS THAT LESION?

62 y.o. male: rough warts on sides of both heels
WHAT IS THAT LESION?

STUCCO KERATOSES: Mostly > 40 y.o. men. White to skin colored scaly lesions. No bleeding when removed. Usually dry adjacent skin. Treat with cryotherapy; curettage; Aldara; or topical emollients.
A 26 year-old white male presents with a plantar wart on the ball of the R foot.

It has been present for two years and has been treated by several non-foot specialists.

It bleeds and is painful when trimmed.
WHAT IS THAT LESION?

26 y.o. male: plantar wart on ball of R foot. Bleeds when trimmed.
WHAT IS THAT LESION?

ACROCHORDON: Skin Tag. Has a narrow stalk at base. May have irregular borders or convoluted top. Shave, scissor or excision if symptomatic.

• Schwartz RA. Acrochordon. 2016. eMedicine.
• Medscape/article/1060373-overview.
ACROCHORDON – Skin Tags

Shave, scissor or excision, if symptomatic.
CASE REPORT

A 40 year-old white male presents with an uncomfortable wart on L hallux.

It has been present for over one year and quickly returns after being trimmed off.

It bleeds and is painful when trimmed.
WHAT IS THAT LESION?

40 y.o. male: dome-shaped, irregular with border.
WHAT IS THAT LESION?

ACQUIRED DIGITAL FIBROKERATOMA: May be seen on fingers, toes, heel and palms. May be warty or pedunculated and usually has a fibrous tail or protrusion. May bleed on debridement. Shave excision with cautery or remove and flap close. If greater than 1-cm may be called Giant ADF.

ACQUIRED DIGITAL FIBROKERATOMAS
CASE REPORT

A 7 year-old white male presents with a pruritic elevated lesion on the plantar L foot.

It has been present for over one year and quickly returns after being trimmed off. Pediatrician told mother it was a wart.

It does bleed and is painful when trimmed.
WHAT IS THAT LESION?

Firm, Pink, Dome-shaped Nodule on Sole of 7 y.o. Child. Most Often Pruritic or Tender to Palpation.
WHAT IS THAT LESION?

PRURIGO NODULARIS: Firm, Pink, Dome-shaped Nodule Caused by Chronic Rubbing or Picking. Frequently seen on Sole or Lower Legs of Young Child. Most Often Misdiagnosed as Plantar Wart. Cover, Stop Rubbing and Scratching. Topical steroids, cryotherapy and topical immunomodulators (Elidel, Protopic). Do not excise.
PRURIGO NODULARIS

A 30 year-old white female presents with an elevated firm wart on the lower R leg.

It has been present for over one year and appears to have enlarged recently.

It bleeds and is painful when trimmed or is nicked with shaving of the leg.
The lower leg is a common place for this round-to-oval, elevated, dome-shaped and pigmented lesion in female patients over the age of 20. Male:Female ratio 3:1
DERMATOFIBROMA: Solitary fibrous histiocytoma. May be pruritic. Usually pigmented and may be verrucous on top. Fitzpatrick Dimple Sign: involutes when compressed from side to side. Wide Excision (3-mm boarders) with flap closure.
A 29 year-old white male presents with multiple small erythematous warts on the sole of the R foot.

It has been present for over one year and appears to have enlarged recently.

It bleeds and does not respond to different forms of wart treatments.

Patient states no other skin problems.
WHAT IS THAT LESION?

Multiple Small Warts on Plantar Foot: Treated by PCP with Topical Acid with No Response
Patient was asked about other dermatology or skin conditions and stated none were present!
WHAT IS THAT LESION?

GUTTATE PSORIASIS: Always remember to check the rest of the patient. Other lesions may be present, especially on the trunk.
WHAT IS THAT LESION?

PSORIASIS TREATMENT:

1. Difficult: Instruct patient to stop rubbing/scratching (Koebnerization)
2. Cover area and protection with cotton gloves at night
3. Remove Scales with 50% urea
4. Topical Steroid (betamethasone valerate 0.12% foam) during day
5. Topical Steroid Tape (Cordran®) at night.
6. Injectable Steroid (betamethasone or triamcinolone acetonide) for problem lesions
7. Topical Immune Modulators (pimecrolimus: Elidil® or tacrolimus: Protopic®)
8. Topical 5% imiquimod cream (Aldara®)
9. Treat with OLUX-E®Stiefel (clobetasol propionate 0.05%).
A 60 year-old white male presents with an elevated wart on the lateral aspect of the R foot.

It has been present for over one year and appears to have enlarged recently.

It bleeds and does not respond to different forms of wart treatments by non-foot specialists and OTC products by patient.
WHAT IS THAT LESION?

60 y.o. male with dome-shaped well-circumscribed wart on lateral L foot which is raised and with a crusted center.
WHAT IS THAT LESION?

KERATOACANTHOMA (KA): solitary and giant (>1.0 cm). Develops a central keratin-filled plug that may crust over. Treatment: surgical excision with flap closure. DDx: Verrucous Carcinoma

WHAT IS THAT LESION?

Look at the entire extremity *and* other areas of the body!
CASE REPORT

A 22 year-old white male presents with an elevated wart on the dorsal aspect of the second toe, R foot.

It has been present for over one year and appears to have enlarged recently.

It bleeds when trimmed.
WHAT IS THAT LESION?

Dome-shaped papular wart with central umbilication with mildly erythematous base located on distal 2\textsuperscript{nd} toe.
WHAT IS THAT LESION?

MOLLUSCUM CONTAGIOSUM: Viral poxviridae, central umbilicated dome-shaped lesions. Very contagious. Treated similar to warts.

CASE REPORT

A 20 year-old white female presents with an elevated wart on the dorsal aspect of the second toe, R foot.

It has been present for over one year and appears to have enlarged recently.

It does bleed when trimmed and has not responded to topical wart acids.
WHAT IS THAT LESION?

20 y.o. female: wart treated with acid for 4 weeks. No response.
WHAT IS THAT LESION?

DIGITAL MUCOID CYST:
These myxoid cysts are commonly seen on the toes and contain a thick mucinous fluid. Their appearance may change with other treatments.
DIGITAL MUCOID CYSTS

TREATMENT OPTIONS:

- Puncture & Drain (I&D)
- Unroofing – Electrodessication
- Injections: Steroid – Sclerosing Solutions
- Curettage & Compression
- Multiple Needlings & Drainage
- Complete Surgical Excision & Skin Flap
- Excision & Tying Off Stalk and Skin Flap

DIGITAL MUCOID CYSTS

TREATMENT OPTIONS:

- Puncture & Drain (I&D)
- Unroofing – Electrodessication
- Injections: Steroid – Sclerosing Solutions
- Curettage & Compression
- Multiple Needlings & Drainage

**Complete Surgical Excision & Skin Flap**

- Excision & Tying Off Stalk and Skin Flap

CASE REPORT

A 27 year-old white male presents with a plantar wart on the plantar aspect of the L heel.

It has been present for four weeks and appears to have enlarged recently.

It does bleed when trimmed and the patient wants it treated today.
WHAT IS THAT LESION?

WHAT IS THAT LESION?

FOREIGN BODY REACTION: Many foreign body reactions look similar on the plantar foot and may be mistaken for warts. Human or pet hair, wood splinters, carpet fibers, other reactive materials, etc.
A 50 year-old white male presents with painful plantar warts on the both feet.

They has been present for many years and appears to have increased in numbers recently.

It does not usually bleed when trimmed.
WHAT IS THAT LESION?

Painful Plantar Warts: Ball of left foot.
WHAT IS THAT LESION?

PUNCTATE KERATOMA & KERATODERMAS: All of the smaller punctate keratomas may be misdiagnosed as plantar warts. Treat with debridement/emollients; cryotherapy; 4% alcohol injections; or, excision.
A 50 year-old white male presents with painful plantar warts on the both feet.

They has been present for many years and appears to have increased in numbers recently.

It does not usually bleed when trimmed.
WHAT IS THAT LESION?

Plantar Heel Wart: Just noticed last week.
WHAT IS THAT LESION?

**TALON NOIR:** Black Heel Syndrome
– irregular punctate hemorrhage due to sudden shear forces seen in running & other sports. No definitive edge noted.

WHAT IS THAT LESION?

Longstanding Plantar Wart on Right Foot (4 mm diam)
NOT EVERYTHING IS A WART

CARCINOMA: Both superficial Basal Cell and Squamous Cell CA can mimic plantar warts.
Not Everything is a Wart: But These All Are!

- Variegated
- Vulgaris
- Planar
- Digitate
- Subungual
- Mosaic
Not Everything is a Wart!

Don’t Always Put Warts at the Top of the Differential Diagnosis Lists

Think About Other Stuff As Well

Do Good Exam & Tests: Debride Carefully, Take Specimen(s), Biopsy Lesion(s)

If Your Treatment is Not Successful in a ‘Reasonable’ Amount of Time....Look at a Different Diagnosis

The End
Additional References: