Procedural Dermatology

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Conflicts

- I have no conflicts of interest
- I will be discussing some common off-label non-FDA approved approaches and treatments, as well as some Brand names.
Objective

- To review the different common dermatology procedures
- To create a thought framework in order to determine which procedures to perform, how to perform them, and how to approach results
- To be aware of common mistakes and pitfalls in procedural dermatology, and how to avoid them
At this end of this lecture:

- You will NOT become an EXPERT DERMATOLOGIC SURGEON...

- You WILL become aware of the thinking process required to perform small dermatologic procedures in your office on a regular basis

- You WILL become more likely to perform in-office procedures as you begin to gather information about all the tools needed

- You WILL become (hopefully!) more confident in your approach to dermatologic surgery and what is required to be successful.
Procedural Dermatology

- Includes all procedures performed in clinic
- Cryotherapy
- Electrocautery
- Intralesional injections
- Skin Biopsies
- Excisions
Cryotherapy

- Applying a cold substance in order to treat a lesion, usually through cold induced destruction.
- Most common cryogen substance: Liquid Nitrogen.
- Boiling point: -196 degrees.
- Some OTC cryotherapy devices exist: -30 degrees.
Cryotherapy mechanism

- Freeze-thaw cycle
- Freezing does not cause destruction of the cells
- It is the thawing that causes intracellular destruction through several mechanisms (volume expansion and osmotic gradients)
RAPID FREEZE, SLOW THAW!
For more precise cryotherapy

- Use a Q-tip dipped in liquid nitrogen!
- Not as cold, not as effective
24hrs after cryotherapy
24hrs after cryotherapy
48 hours after cryotherapy
96 hours (4 days) after cryotherapy
96 hours (4 days) after cryotherapy
3 months after cryotherapy
Temperature matters

- Melanocytes (cells that contain melanin in the skin) can be damaged at -5 and -10 degrees Celsius.
- Keratinocytes (cells that create the epidermal barrier) need a temperature of -50 degrees to be destroyed.
- Warts, AK are all in the epidermal keratinocytic layer.
- Otc cryogens that get to -30 degrees cannot be adequate for most dermatologic purposes.
One of the most common side effects of cryotherapy is hypopigmentation (loss of pigment) that results from the destruction of the pigment in the skin.

This is very common and patients should be warned of that side effect.
Postinflammatory hypopigmentation/hyperpigmentation
What to expect

- Patients should be informed of the temporal consequences of cryotherapy. The process can take two weeks!
- Pain
- Followed by a potential blister
- Scabbing
- Crusting
- Healing
Why use cryotherapy

- Noninvasive
- Quick
- Pain is temporary
- No aftercare or very little aftercare needed!
- No band-aids, no petrolatum, no antibiotic ointment.
Important considerations in cryotherapy

- Only use cryotherapy if you have a high degree of confidence in the diagnosis.

- Communicate with your patients regarding your suspected diagnosis and the expectations of resolution.

- Patients should be instructed to follow-up if the lesion does not resolve: this should be verbalized.

- Use cryotherapy only for circumscribed lesions.

- The timeframe should be explicit: “return to see me if the lesion is not completely resolved in 3 weeks.”
What to do if the lesion does not resolve with cryotherapy?

- Technique: did you freeze it well?
- Question the diagnosis: could it be something more serious?
- Is it still there? Or are you looking at a scar, postinflammatory changes?
What can cryotherapy be used for?

- Warts
- Seborrheic Keratoses
- Lichenoid Keratosis
- Granuloma Annulare
- Actinic Keratoses
- Superficial skin cancers!
How to freeze warts

- There are guidelines as to the number of seconds to freeze, but those are not accurate and depend on the lesion to be frozen.

- The most precise way to freeze involves using cryotherapy guns that have an integrated infrared temperature gauge of the lesion being frozen.

- Freezing an epidermal lesion should decrease the temperature of the lesion to be frozen to -50 degrees C.
Freezing warts II

- So how do you know? Without a temperature gauge, you have to use your experience.

- A useful measure would be to freeze the lesion until “white frost” forms on the lesion and 1 or 2mm beyond the lesion.
Remember: if you don’t freeze the wart beyond its visible presentation, you risk the formation of a “donut” wart or risk the significant spread of the wart.

In a large majority of cases of referrals from physicians for the treatment of recalcitrant warts, repeat cryotherapy is successful.

With some modifications!
Cryotherapy Success

- Pare down the wart prior freezing: low success rate otherwise. By far the most common reason for cryotherapy failure.

- Set the right expectations: I explain to patients that warts may need up to 3 treatments separated by a few weeks for success.

- If it looks like a wart and acts like a wart… don’t forget about verrucous carcinoma in adults with recalcitrant warts.
When to just say no to Cryotherapy

- Periungual warts: risk of damaging nail matrix risks permanent nail dystrophy
- Close to eyes, eyelids
- When cosmetic outcome matters, use topical therapies, NOT cryotherapy
Intralesional therapy

- Injecting a substance to treat a cutaneous condition
- Very common procedure
- Very satisfying: excellent results!
“Help! I have a tender pimple that won’t go away”

- Intralesional triamcinolone, a mid-potency steroid
- Very effective in helping resolve deep-seated tender lesions within 24-48 hours.
- Use very low doses: 2.0mg/cc is safe
- Inject only in the dermis; do not inject into the subcutaneous fat
- Otherwise: risk of atrophy, depressed scars, etc.
“Help! I have a tender pimple that won’t go away”

- Never inject:
  - In the glabellar area
  - Close to the eyelids
  - In areas you cannot visualize well: i.e. inside nose or inside ears.
  - When you are not sure of the diagnosis, or unsure of anatomy
  - When contraindications exist: allergy, uncontrolled diabetes, cataracts, glaucoma.
Intralesional triamcinolone is appropriate for small recalcitrant lesions.

For thickened lesions, may use 10 to 20mg/cc.

Higher doses mean increased likelihood of systemic absorption and systemic side effects.

This can also be used for circumscribed thickened eczematous dermatitis, prurigo nodularis, lichen simplex chronicus.
“Help! I have alopecia areata”

- Intralesional triamcinolone is the gold standard of care
- May use 5mg/cc
- Small aliquots
- Stay within the dermis
- Do not inject deep into the subcutaneous fat: risk of depressed scar!
- May repeat after 4-6 weeks. Remember: hair telogen cycles are 3 months long. Need 3 months to see full results.

NSFE: Dr Sandra Lee
“Help! I have warts that don’t respond to cryotherapy”

- Not FDA approved
- Work by stimulating the immune system to create a strong immunologic reaction which will help in the wart cell destruction.
- Inject 0.1cc of Candin into largest wart. Consider injecting 0.1cc in forearm as a test dose first to determine whether patient will mount allergic response to candida.
- Avoid on distal extremities due to risk of compartment syndrome from severe swelling
- Redness, swelling, and pain should be expected.
“Help! I have warts that don’t respond to cryotherapy”

- Bleomycin: not FDA approved
- Very effective
- Dilute to 1mg/mL with normal saline or lidocaine WITHOUT epi
- Inject 0.1 to 0.3ml: recommended dose has not been determined
- Always associated with some degree of pain, burning sensation, swelling
- Rare cases of vascular compromise, nerve damage, gangrene.
"Help! I don’t know what I am allergic to"
<table>
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<th>No.</th>
<th>Substance</th>
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<tr>
<td>1</td>
<td>Nickel sulphate</td>
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<tr>
<td>2</td>
<td>Wool alcohols</td>
<td>1000</td>
</tr>
<tr>
<td>3</td>
<td>Neomycin sulphate</td>
<td>600</td>
</tr>
<tr>
<td>4</td>
<td>Potassium dichromate</td>
<td>54</td>
</tr>
<tr>
<td>5</td>
<td>Caine mix</td>
<td>630</td>
</tr>
<tr>
<td>6</td>
<td>Fragrance mix</td>
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</tr>
<tr>
<td>7</td>
<td>Colophony</td>
<td>1200</td>
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<tr>
<td>8</td>
<td>Paraben mix</td>
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<tr>
<td>9</td>
<td>Blank patch</td>
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<tr>
<td>10</td>
<td>Balsam of Peru</td>
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<td>11</td>
<td>Ethylenediamine dihydrochloride</td>
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<td>12</td>
<td>p-tert-Butylphenol formaldehyde resin</td>
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<td>15</td>
<td>Black rubber mix</td>
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<tr>
<td>16</td>
<td>CI+Me-Isothiazolinone</td>
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<tr>
<td>17</td>
<td>Quaternium-15</td>
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<td>18</td>
<td>Methyl dibromo glutaronitrile</td>
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<td>19</td>
<td>p-Phenylenediamine</td>
<td>80</td>
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<tr>
<td>20</td>
<td>Formaldehyde</td>
<td>180</td>
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<tr>
<td>21</td>
<td>Mercapto mix</td>
<td>75</td>
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<tr>
<td>22</td>
<td>Diazolidinyl urea</td>
<td>550</td>
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<tr>
<td>23</td>
<td>Quinoline mix</td>
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<td>24</td>
<td>Tixocortol-21-pivalate</td>
<td>3</td>
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<td>25</td>
<td>Gold sodium thiosulphate (GST)</td>
<td>75</td>
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<tr>
<td>26</td>
<td>Imidazolidinyl urea</td>
<td>600</td>
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<td>27</td>
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<td>Hydrocortisone-17-butyrate</td>
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<td>29</td>
<td>Mercaptobenzothiazole</td>
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<td>30</td>
<td>Bacitracin</td>
<td>600</td>
</tr>
<tr>
<td>31</td>
<td>Parthenolide</td>
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</tr>
</tbody>
</table>
Local anesthesia

- Using the right local anesthesia prior to surgical procedures is crucial
- Usually: we use 1% lidocaine with epinephrine
Lidocaine allergy

- REAL lidocaine allergies do exist
- However, they are extremely rare
- Most patients who are “allergic” to lidocaine or novocaine are individuals who have reacted to the “epinephrine” component, usually during a dental procedure.
- Nevertheless, a careful history should be obtained
- Lidocaine allergy testing can be performed through Allergy and Immunology, if needed.
Lidocaine allergy

- Alternatives exist

- Use liquid benadryl to anesthetize the skin: should be a sterile bottle, not one that is store bought. Offers an adequate level of anesthesia for small biopsies.

- Can use normal saline for a minimal level of anesthesia that is very short lived. Use only for small shave biopsies, not for deeper biopsies or excisions.
Feel the “BURN”

- Lidocaine is acidic and causes a lot of discomfort when administered
- Strong burning sensation that is very uncomfortable
- To decrease that sensation, buffer the lidocaine with a buffering agent
- Time consuming: have to prepare a fresh batch daily as the lidocaine component disintegrates within 24 hours
Syringes and Needles

- Small syringes and smaller needles always improve patient’s experience and their pain.
- More costly, but extremely helpful.
- I use 1cc syringes rather than 3cc syringes.
- 30 gauge needles rather than 25.
syringe
Needles
Caution is advised

- If injecting close to a vascular structure, it is important to withdraw the plunger of the syringe prior to injecting.
- In order to make sure you are not injecting the lidocaine straight into a vessel.
Caution is advised:

- Avoid using epinephrine on distal extremities due to the risk of claudication.
- May use lidocaine WITHOUT epinephrine.
- More bleeding will result as epinephrine is a vasoconstrictor.
Caution is advised

- Obtain approval from OBGYN prior to using lidocaine with epinephrine in pregnant women.
- In general, avoid lidocaine with epinephrine in 1st trimester due to theoretical risk of vasoconstriction of blood flow to fetus.
- Some dermatologists ignore those rules for small biopsies, but will be more careful with larger surgical procedures.
Biopsying patients on anticoagulants: no need to discontinue medications

Do not stop anticoagulant or reduce the dose

For Coumadin: may want to confirm patient is in therapeutic range prior to biopsy

How about thrombocytopenic patients: in general a platelet count of 50,000 is adequate for a skin biopsy

The lowest acceptable platelet count for a small biopsy is 25,000. Patient has to be monitored and perfect hemostasis should be obtained. Risk of bleeding should be emphasized.
Some Danger Zones to keep in mind

TEMPORAL NERVE PROJECTED ON SKIN

STERNOCLEIDOMASTOID MUSCLE

ERB'S POINT

Medscape.com
Biopsy: when to do it

- when there is a clinical suspicion of malignancy
- A neoplasm of uncertain significance
- A concerning change in the clinical appearance or symptoms associated with a lesion
- An unexplained history of bleeding
Every Biopsy should have:

- Identified specific location
- Clinical description/presentation
- Clinical suspicion or impression
Shave biopsy: Location Location Location!

- Consider all biopsies as potentially needing further excision or a deeper biopsy.
- Identify the location of the biopsy as precisely as you can.
- Best SCENARIO: use photography to document the location of the biopsy. Do not use pictures taken for education unless you obtain clear written consent from patient.
Clinical Presentation

- Size of the lesion: use cm or mm.
- Color of the lesion: skin colored, tan, erythematous (red), brown, pigmented, dark, black, blue, yellow, purpuric (bruise-like)
- Is it: “Flat” or “raised”? 
"Flat"

- Macule: if flat and less than 1cm in size
- Patch: if flat and greater than 1cm in size
Raised

- Papule: if less than 1 cm
- Plaque: if greater than 1 cm
- Nodule: if larger than 1 cm and deep
Blisters

- Vesicle: if less than 1 cm
- Bulla: if greater than 1 cm
Describe this flat lesion
And this one?
Shave Biopsy

- One of the most common biopsy techniques used in a dermatology office
- Involves superficial removal of a sample of skin: stratum corneum (dead skin layer), epidermis and superficial portion of the dermis.
- Use a scalpel or a half blade: based on preference and training. Both are adequate
Steps:

Step 1: BD Alcohol Swabs

Step 2: Pen and scalpel
Step 3: mark the area, then anesthetize!
Step 3:
Curved half blade rocking motion
The “Why” and the “What” to biopsy

- To determine the nature of an epidermal or superficial lesion.
- Think about the pathology of the clinical lesion.
- Basal cell skin cancer
- Bowens disease (squamous cell carcinoma in situ)
- Angiokeratoma, Seborheic keratosis, ...etc
when to just say NO to shave biopsies

- “Rash”
- When melanoma is in the differential diagnosis
- The clinical process appears to be deeper
- Deeper dermis or subcutaneous fat layer: panniculitis, Sweet’s syndrome, leukocytoclastic vasculitis, ... etc.
The Punch Biopsy

- The most useful dermatologic surgical techniques
- Involves obtaining a sample of skin to the subcutaneous fat
- Allows a full pathologic evaluation of the dermatologic process
Punch biopsy
Punch Biopsy

- Different sizes available: 1mm to 8mm
- Think about the location of the lesion and the underlying structures: blood vessels, nerves, bone, cartilage
- Warn your patient of potential risk of complications of the procedure before proceeding.
Tools needed for a punch biopsy
Punch Biopsy Techniques

- Think about the skin tension lines: stretch the skin at a 90 degree angle of the natural lines of cleavage prior to obtaining the sample.
- Will allow easier closure of the biopsy site.
- Use sutures that are adequate for the thickness of the skin being biopsied and the level of skin motion: for example, above joints, on hands, etc.
Stretching the skin prior to biopsy
Punch Biopsy Steps
Examples of suture materials to use after a punch biopsy

- Reminder smaller numbers indicate thicker suture
- 3-0 ethilon: back
- 4-0 ethilon: forearm
- 5-0 ethilon: neck
- 6-0 ethilon: temple
Scalp biopsies

- Black sutures would not be visible
- Use Prolene instead.
- Why? Well, most of us don’t have blue hair 😊
Suturing with needle driver: right or left?
Neither!

Yes! 1/3 of the way
Not too close,
Not too far,
Just Right!
Suturing needle

- **Point**
- **Swaged end**
- **Body (shaft)**
Some punch biopsies are not amenable to closure due to skin tension or patient preference.

No sutures means no restrictions to movement and activity. No suture removal appointment.

Use electrocautery to achieve hemostasis.

Warn patient of expected resultant scar: less elegant scar.
What to do with the biopsy specimen
For the most common pathologic evaluation called H&E (hematoxylin & Eosin)

Stains can be used on those biopsy specimens to obtain more information: for example, PAS stains for fungal elements, immunostains such as HPV, treponemal, etc

Notoriously unreliable: useless results in negative findings
Direct Immunofluorescence

Extremely useful in determining the nature of a dermatitis

Same punch biopsy, different medium: Michel’s medium

In many cases, a complex dermatitis will require both a skin biopsy for H&E, and one for DIF

4mm size is adequate for each.
Direct ImmunoFluorescence

- The trick is to know where to biopsy, and when to biopsy.
- Despite clinician’s very adequate suspicions, the pathology findings sometimes fall short because of incorrect biopsy site or timing of biopsy.
- Very useful guide from the dermatopathology experts at UCSF (University of California San Francisco).
- Considered by many as the premier dermatopathology team in the United States.
- Used often as a preferred site for second opinion pathology evaluations.
Direct ImmunoFluorescence

- **BLISTERING DISORDERS:**

- Bullous pemphigoid, Epidermolysis Bullosa Acquisita and Pemphigus

  **BIOPSY:** the edge of an active blister or erythematous skin
  **AVOID:** having the epidermis come off, ulcers and the distal extremities

- Dermatitis herpetiformis:

  **BIOPSY:** normal appearing skin 3 mm from a blister

  Multiple biopsies may be required

  **AVOID:** active lesions
  **SPECIFY:** “involved” or “uninvolved”
Direct Immunofluorescence

- For DLE, SCLE and DM:

  BIOPSY: erythematous border of an established (>3 months) lesion

  AVOID: old lesions

  SPECIFY: “involved” or “lesional”
Direct Immunofluorescence

- VASCULITIS (e.g. Henoch-Schönlein purpura):
  - BIOPSY: fresh pink and/or active border of new lesion
    - ideal lesion should be less than 48 hours old
    - uninvolved skin may yield diagnostic information but is less sensitive
  - AVOID: ulcers, old lesions, and when possible distal lower extremities SPECIFY: “involved” or “uninvolved”
How to stop bleeding after a biopsy

- Most common approach in dermatology: Aluminum Chloride on a cotton tip
- Hemostatic agent
- Instant results
- Will only work for slow bleeding lesions or small biopsies
- Do not use close to eyes: can cause ocular toxicity
How to stop bleeding after a biopsy

- Monsel’s solution
- Ferrous subsulfate
- Created in the 19th century by Dr Monsel
- More effective for more pronounced bleeding
- Messy, but effective.
How to stop bleeding after a biopsy

- Electrocautery
- Different voltage levels
- Be aware: high voltage can cause damage to underlying structure (nerve and vascular damage)
How to stop bleeding after a biopsy

- Dissolving suture such as Vicryl
- Find the source of the bleeding first
- Look, evaluate, decide then place suture
- Ask assistant to distract patient to minimize his or her distress
How to stop bleeding after a biopsy

- When all else fails…. PRESSURE!
- Apply direct strong pressure for a full 5 mins
- Resist “peeking”
- Get help: surgeons are always ready to help when needed.
Now that we biopsied...What now?

- Lay out timeframe for pathology results: when to expect results and your plan to inform patient of results.

- Always ask patient to call you if they don’t hear back from you regarding the results after 2 weeks.

- Keep your own log of all the biopsies you perform in addition to asking your assistants to have a log.

- Weekly log evaluation should be performed to make sure you receive all path results you expected.
Wound care instructions

- Take the time to explain the steps or train your assistants to do that
- Hand the patient clear written postprocedure care instructions
- When should they return to your clinic for suture removal?
### Skin biopsy suture removal timeframe

- **NOT EXCISION timeframe**

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<th>Adult (days)</th>
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<tbody>
<tr>
<td>Face</td>
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<tr>
<td>Scalp</td>
<td>6 - 7</td>
</tr>
<tr>
<td>Trunk</td>
<td>7 - 10</td>
</tr>
<tr>
<td>Arm (not joints)</td>
<td>7 - 10</td>
</tr>
<tr>
<td>Leg (not joints)</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Joint</td>
<td></td>
</tr>
<tr>
<td>Extensor surface</td>
<td>8 - 14</td>
</tr>
<tr>
<td>Flexor surface</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Dorsum of hand</td>
<td>7 - 9</td>
</tr>
<tr>
<td>Palm</td>
<td>7 - 12</td>
</tr>
<tr>
<td>Sole of foot</td>
<td>7 - 12</td>
</tr>
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</table>
In order to ensure proper healing:

- Don’t get the wound wet for 24 hours
- No hot tubs, no swimming until healed
- After 24 hours, may let water and soap run over wound, no scrubbing allowed
Wound care basics II

- Apply sterile vaseline followed by bandaid. Use paper tape if patient allergic to adhesive
- No to Bacitracin or Neosporin
- 2% of patients are truly allergic to those: there is actually a risk of anaphylactic shock with topical application
- If the wound were to get infected, higher risk of resistance of bacteria due to antibiotic selection
Informing patients of results

- This is PRIMORDIAL!
- Patients with skin cancer need to be contacted as a PRIORITY!
Practitioner, BEWARE!

- The case of a family physician in MA:
  - Identified and biopsied an abnormal lesion, showed melanoma
  - Called patient 3 times unsuccessfully.
  - Patient presents 2 years later with metastatic melanoma
  - Patient did not want to sue physician. Family members filed a successful lawsuit once patient died!
Electrodessication and Curettage

- Excellent treatment option
- aka: ED&C
- “scraping and burning”
- Usually 3 cycles of using a curette followed by electrodessication
- 3 cycles shown to be most effective in treating lesions found in the epidermis
- Do NOT rely on it for destruction of Dermal lesions!
ED&C: tools needed

Curette and Hyfrecator
ED&C x3

- High cure rate for:
  - Warts
  - Hypertrophic Actinic Keratosis
  - Superficial BCC
  - Bowens Disease (SCC in situ)
Pros and Cons of ED&C

- Pros:
  - no restrictions to daily activities
  - no risk of dehiscence
  - fast in-office procedure: 5mins
Cons of ED&C

- Healing by secondary intention means delayed healing
- Patient hand holding needed
- Poor Cosmesis
- No confirmation of clear margins
- Continued monitoring of wound needed for any sign of regrowth or recurrence
What to do when things go wrong...
Risks to be considered in the first 24-48 hours:

- Bleeding
- Hematoma
- Nerve damage
- Dehisced wound: sutures did not stay, patient was active

Patient will need to be evaluated immediately
Bleeding

- Hemostasis should be the primary goal: anesthetize first!

- Electrocautery, sutures, pressure. The intact suture may need to be removed. Inform patient that the wound would not be closed again and would have to heal by secondary intention.

- If unable to achieve hemostasis: take patient to ER. Should be supervised throughout the process. Never send patient on their own to the ER.
Hematoma

- Hematomas form within “dead space” created during surgery that was not closed appropriately.
- Hematoma can resorb spontaneously. However...
- It is important to attempt to evacuate hematoma due to high risk of secondary infection.
- I recommend oral antibiotics for all patients with an identified hematoma.
Nerve Damage

- Extreme unexplained pain or complete anesthesia
- This needs to be evaluated immediately!
Dehiscence

- Wound edges are no longer approximated
- Can happen due to:
  - insufficient number of sutures
  - Inappropriate thickness of suture used
  - Not using buried dissolving sutures in high skin tension areas: intermediate repair closure
  - Patient noncompliance: running a marathon?
Dehiscence II

- Deshisced wounds should not be closed again with sutures due to high risk of infection.
- Have to be left to heal by second intention.
- Explain to patient the process: slow healing from the inside out. Same wound care techniques. Higher risk of infection.
- Set expectations: “ugly scar”, several weeks up to 2 months for full healing. Arrange for patient to be seen in clinic weekly or for a frequent visiting nurse who specializes in wound healing. Hand holding a MUST!
Risks to be considered in the first 3 to 7 days:

- Infection

- Signs:
  - Patient describes increasing or worsening pain, tenderness to palpation
  - Redness that is spreading
  - Wound that is warm to the touch and swollen
  - Fevers or chills
  - Pus: unreliable indicator of postop infection. 2 reasons: inability to correctly identify pus, or absence of pus in an infected wound!
Postop infection

- Ask patient to come in immediately for evaluation.
- Wear gloves when evaluating wound
- Look, smell, feel, press!
- Although bacterial cultures may not always be reliable, it is important to obtain one in order to rule out MRSA and possible mixed microbial infections.
Most common culprit: Staph

- Start patient empirically on antibiotics if clinical suspicion exists

- Choose antibiotics that penetrate the skin: Keflex, Clindamycin, Doxycycline

- Prescribe mupirocin ointment topically instead of vaseline

- Ask patient to monitor wound characteristics, symptoms, as well as constitutional symptoms. Enunciate a clear plan for patient if no improvement!
Feet, Ears, Perioral, Perianal, Genital

- Consider multibacterial infections
- Feet and ears: coverage for gram negative infections
  For example: consider Ciprofloxacin for ears.

Enlist the help of your friendly Infectious Diseases Colleague!
When wounds heal too well...

- Hypertrophic scars: raised scars that stay within the wound edges
- Keloids: hypertrophic scars that grow and extend beyond the wound edge margins
- Very itchy!
- Can be very tender!
- Uncomfortable!
Interventions for hypertrophic/keloidal scars

- Time: many raised scars improve over time, redness fades
- Massage daily with moisturizer
- May use Bio-Oil: some patients are allergic to ingredients
Next steps

- Silicone Scar Sheets: shown to help hypertrophic scars. Requires commitment, painless

- Intralesional triamcinolone: **gold standard** for treatment. Use 7.5 to 20mg/cc of Kenalog (triamcinolone) in small aliquots into scar. Improvements seen as soon as 2 weeks.
Hypertrophic/Keloidal Scars II

- More extreme treatment measures include:
  - Scar Revision through Plastic surgery
  - Reexcision with Aldara cream: shown to reduce risk of recurrence of keloid
  - Reexcision with radiation: very effective but real risk of skin cancer
Interpreting Pathology Results

- In order to improve patient care and outcome, open a channel of communication with your friendly local pathologist.
- For skin biopsies, dermatologists prefer dermatopathologists to interpret biopsy results rather than general pathologists.
- Contact the pathologist for clarification of pathology results.
- Consider second opinion pathology consultations if results are still confusing or unclear. Involve patient in decision making process!
Interpreting Path: “rash”

- Dermatitis, Eczema, Psoriasis, Psoriasiform dermatitis, Allergic dermatitis, Hypersensitivity reaction.

- If your differential includes any of the above conditions, chances are the pathologist will not be able to distinguish clearly between them.

- Remember: even tinea corporis will look like eczema. And the PAS stain used to identify fungal elements is almost always negative: FALSE NEGATIVE!

- Yes, there are classic distinctive features to each of those conditions, but they are rarely seen in “real” life. Many cases include mixed components and findings.

- This is where expert dermatopathologists shine!
Interpreting Path: “moles”

- Moles or nevi
- Normal findings: blue nevus, congenital nevus, Meyerson nevus, etc
- Abnormal findings: melanoma
- But, of course, there’s also....
Everything in between!

- “GREY” area findings
- Spitz nevus
- Dysplastic nevus
- Regressing nevus
Spitz Nevus

- Atypical nevus
- More common in children: used to be interpreted as “childhood” melanoma
- This is wrong! Spitz nevus is not melanoma!
- The concern is that Spitz nevi have a high likelihood of “metastasizing” to lymph nodes.
- Reexcision is advisable in children.
- Spitz nevi are never normal in adults: always reexcise, but also consider a second opinion. This may be melanoma!
Atypical Nevi

- Atypical = Dysplastic. Terms interchangeable
- What to do about them? Controversy exists.
- What is the likelihood that an atypical nevus will turn into melanoma?
- No one knows: no experiments can be constructed due to unethical nature.
- Are there documented cases of biopsy proven atypical nevi that evolve to melanoma? **Absolutely!**
Atypical Nevi

- Two schools of thoughts: West Coast versus East Coast

- West Coast: a mole is either normal, dysplastic, or melanoma. Dysplastic moles do not need to be excised unless they have atypical or concerning features.

- East Coast: a mole can be normal, mildly dysplastic, mild to moderate dysplastic, moderate, moderate to focally severe, severe, then melanoma... and everything is between!
That is the question!

Most dermatologists agree:

- if the word “severe atypia” or “severe dysplasia” is used, reexcision is advisable with Melanoma in situ margins. **5mm margins**

- A mildly atypical nevus with positive margins can be monitored and observed. No excision needed, unless nevus regrows or patient is at high risk of melanoma.
No consensus

Reexcision may be the conservative approach, but many advocate for continued observation as a very safe option.

Case by case basis: discuss the options with the patient. Consider the risks and benefits of the procedure. Is the patient willing and/or able to monitor the biopsy site for any regrowth?
Melanoma in situ

- Excision with 5mm margins is sufficient
- If pathologist notes a margin less than 5mm, consider further reexcision
- No need for radiation, chemotherapy, or other treatment modalities
- Patient should be evaluated head to toe every 3 months for the 1st year after diagnosis.
- No cure until the 5 year mark.
Melanoma: less than 1mm

- Reexcision with 1cm margins sufficient in many cases.
- 5% risk of lymph node involvement: still a low risk.
- New suggestions, not guidelines, seem to suggest sentinel lymph node evaluation might be helpful in patients whose melanoma is greater than 0.75mm in depth.
- Other factors should be considered: mitotic rate, age of patient, level of actinic damage, comorbidities.
- Sentinel lymph node biopsy is NOT without real risk! Infection, pain, swelling.
Melanoma: greater than 1mm

- Sentinel lymph node biopsy (SLNB) in addition to wide excision is highly recommended: performed at the same time.

- Consider referring patient to melanoma surgeon who is knowledgeable about melanoma treatment guidelines and sentinel lymph node biopsies.

- Many surgeons would not perform sentinel lymph node biopsies after a wide excision of the melanoma is performed: they consider the SLNB results to be misleading in those cases.

- Consider a referral to an oncologist for evaluation in addition to your close monitoring.
In Summary…

- Practice makes perfect!
- Know when you don’t know…
- Know your surgical skill limits!
- Ask for help when unsure
- You can do this: you will make a big difference in your patient’s life!
And now... Final Advice:

- Don’t forget to ALWAYS look at the WHOLE picture!
- What do I mean?
SEE the WHO LE picture! 😊

With my daughter Sophie!
Thanks for listening!

My daughter Sophie!!!

8 weeks old!