CRYOTHERAPY, SHAVE BIOPSIES, AND PUNCH BIOPSIES: WHEN AND HOW?

ADVANCED PRACTICE PREP, LLC
DISCLOSURE

• NONE OF THE SPEAKERS/INSTRUCTORS FOR THIS PROGRAM HAVE ANY COMMERCIAL BIAS FOR ANY PRODUCTS INVOLVED IN THIS PRESENTATION.
OBJECTIVES

BY THE END OF THIS COURSE, THE PARTICIPANT WILL BE ABLE TO:

1. IDENTIFY WHEN IT APPROPRIATE TO ADMINISTER CRYOTHERAPY
2. VERBALIZE PROPER TREATMENT WITH CRYOTHERAPY
3. DEMONSTRATE PROPER TREATMENT WITH CRYOTHERAPY
4. IDENTIFY WHEN PUNCH AND SHAVE BIOPSIES ARE USEFUL IN PRACTICE
5. VERBALIZE WHEN IT IS APPROPRIATE TO UTILIZE PUNCH AND SHAVE BIOPSIES
6. DEMONSTRATE PUNCH AND SHAVE BIOPSY TECHNIQUES
CRYOTHERAPY

A “freezing technique” typically used for benign lesions.

Heat Transfer (from lesion to liquid)
Cell Injury
Inflammation (response to cell death)
WHEN CAN CRYOTHERAPY BE USED?
<table>
<thead>
<tr>
<th>Skin Lesion</th>
<th>Another Skin Lesion</th>
<th>Another Skin Lesion</th>
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<tbody>
<tr>
<td>Warts</td>
<td>Cutaneous Horns</td>
<td>Solar Lentigos</td>
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<tr>
<td>Actinic Keratoses</td>
<td>Molluscum</td>
<td>Keloids</td>
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<tr>
<td>Skin Tags</td>
<td>Pyogenic granulomas</td>
<td>Oral mucoceles</td>
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<td>Seborrheic Keratoses</td>
<td>Dermatofibromas</td>
<td>Hypertrophic scars</td>
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<td>Cherry Angiomas</td>
<td>Granulation Tissue</td>
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HISTORY OF CRYOTHERAPY

In use for over 100 years

Initial use was with compressed air and compressed CO snow

Liquid Nitrogen was first used in the 1940’s and is still the most popular cryogen today.

LIQUID NITROGEN

• Boils at -196 degrees C (-320.8 F)

• Destruction of benign lesions can occur at about -25 to -30 C

• Removal of malignant tissue can occur at about -40 to -50 C

HOW IT WORKS

• Leads to intracellular ice formation which causes irreversible damage.

• Inflammation develops over the 24 hours after treatment, which activates immunologically mediated mechanisms.
  
METHODS

• Spray Technique: Most commonly used method.
  • Typically done with a cryogun
  • Liquid nitrogen
  • Often done with a cone
TIMED SPOT FREEZE TECHNIQUE

• Gun is held about 1.5 cm away from the lesion and is sprayed until an ice ball forms.

• The ice ball should form on the lesion.

• It is important to freeze the lesion and 1-2 mm around the lesion.

• Two Freeze-thaw cycles.
DIPSTICK APPLICATOR TECHNIQUE

- Styrofoam cup
- Dipstick Applicator
- Liquid nitrogen
CONTRAINDICATION TO CRYOTHERAPY

- A lesion where tissue pathology is necessary.
- A lesion in an area with poor circulation.
- In a patient (or in an area) where potential pigment changes could be devastating.
- In a patient with cold intolerance.
COMPLICATIONS/SIDE EFFECTS

- Pain at the time of freezing
- Blistering after the freezing
- Occasionally scarring
- Occasional changes in pigmentation
- Sometimes hair loss
- Alteration in sensation (not common)
SHAVE EXCISIONS

• A technique to remove certain types of lesions
SHAVE BIOPSIES

• When is it appropriate to use a shave biopsy?
WHEN?

• Elevated lesions that are uncomfortable or causing concern.
  • Skin tags
  • Actinic keratosis
  • Seborrheic keratosis
  • Benign nevi
WHEN NOT TO!

• If you are suspicious of melanoma, do not perform a shave biopsy as it is not a full thickness specimen.

• If there is infection at the site
SUPPLIES

- Gloves/Protective equipment
- Anesthesia with 25 gauge needle (depending on site but 5/8” is typically fine).
- Depending on site, lidocaine 0.5-2% with or without epinephrine
- Antiseptic solution
- Plenty of gauze
- #15 scalpel or dermablade
- Forceps
- Formalin container
- Hemostatic agent (e.g. silver nitrate sticks)
- Dressing supplies
SCALPELS
DERMABLADE
PUNCH BIOPSY

- When is it appropriate to use a punch biopsy?
WHEN?

• To remove certain lesions
• To obtain a specimen to send to pathology
• To clarify a diagnosis of a dermatosis
WHEN NOT TO!

• Infected site
• Certain bleeding disorders
• When unsure of diagnosis and margins not big enough
SUPPLIES

- Nonsterile gloves (sterile also if sutures to be placed)
- Cleansing solution (chlorhexidine or povidone iodine/alcohol)
- Local anesthetic (1 ml of 1% lidocaine w/ or w/out epi)
- 25 gauge needle with syringe (18 gauge to draw)
- Punch biopsy tool (choose size)
- Plenty of gauze
- Forceps/18 gauge needle
- Formalin container
- Hemostatic agent (e.g. silver nitrate sticks)
- Dressing supplies
- If 4 mm or more, need suture supplies
PUNCH BIOPSY TOOLS
REFERENCES
