BIOPSIES & SKIN CANCER

Charles Darragh, MD

Board Certified Dermatologist

Fellowship Trained Mohs Surgeon

Carolina Dermatology of Greenville

TRAINING

OUTLINE

- Types of biopsies and situations they should be used in
- Common Types of Skin Cancer
- Common Treatments
- Mohs micrographic surgery
- Basics of Suturing (if there is time)

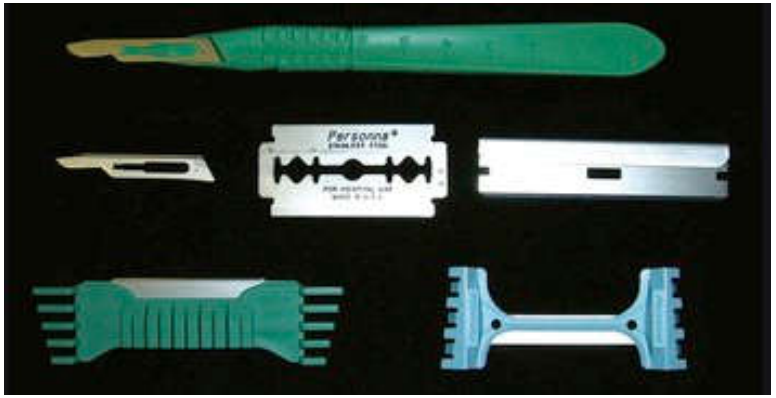
2 MOST COMMON TYPES OF SKIN BIOPSIES

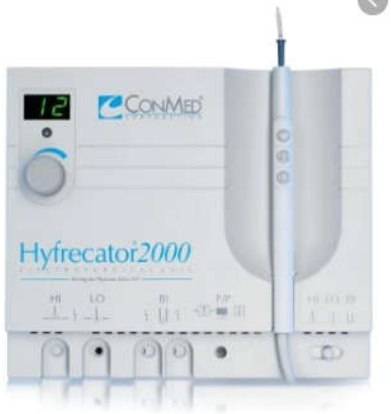
Shave Biopsy

- Injectable Lidocaine
- Skin cleanser
- Gauze
- Shave biopsy blade
- Cautery (Chemical or Electrocautery)
- Vaseline
- Bandage

Punch Biopsy

- Injectable Lidocaine
- Skin Cleanser
- Gauze
- Punch Biopsy Tool
- Needle Driver
- Forceps
- Suture
- Vaseline
- Bandage



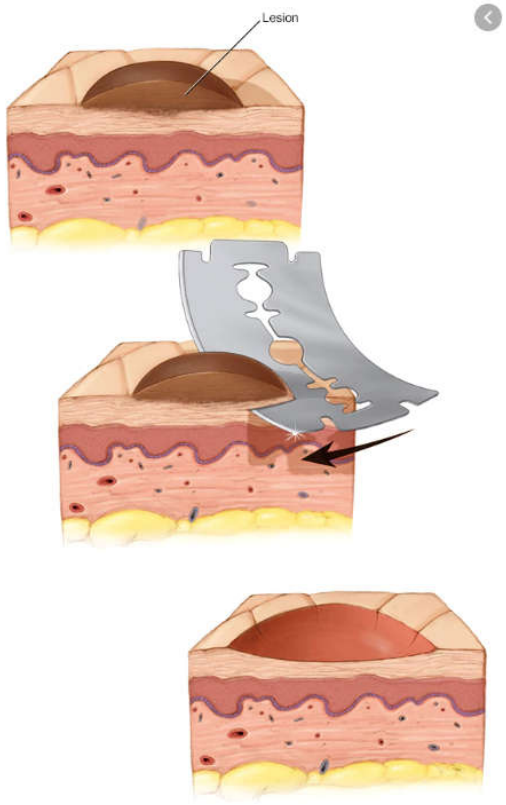


SHAVE BIOPSY

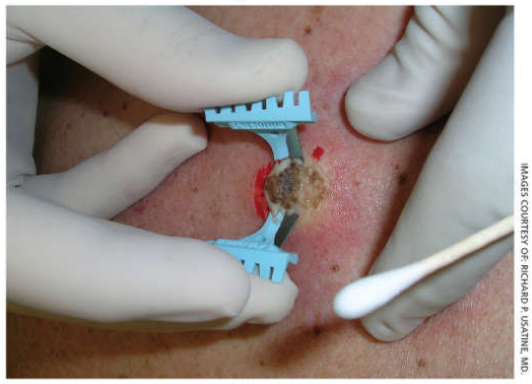
- 1% lidoacaine with 1:100 epinephrine
- Skin Cleanser
- Biopsy Blade
- Cautery

SHAVE BIOPSY TECHNIQUE

- Want to Sample the entire lesion without leaving a large indentation (especially in cosmetically sensitive areas)

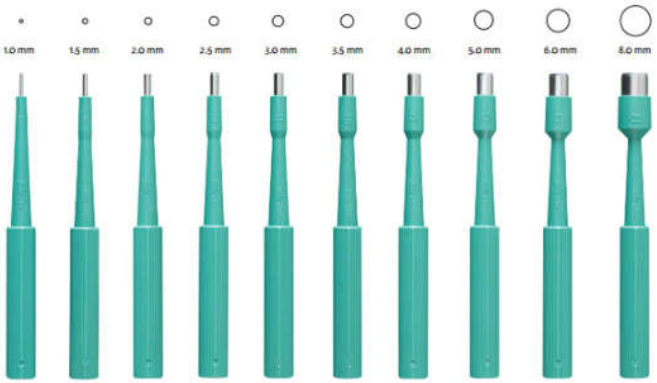


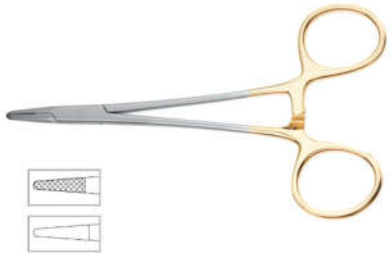
Saucerization of a suspected melanoma

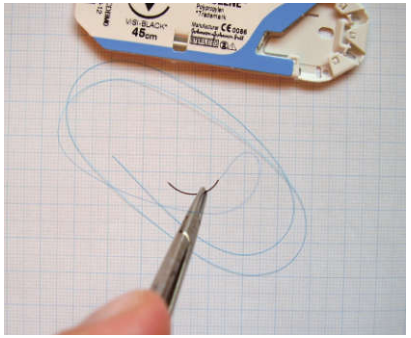


IMAGES COURTESY OF: RICHARD P. USATINE, MD.

- Used mostly on growths (lesions)
- 90-95% of the biopsies I perform
- FYI: Sampling the ENTIRE lesion is especially important for pigmented lesions when ruling out melanoma
  - Old Dogma is to use a punch biopsy to get the entire depth
  - Now pathologist prefer "scoop shaves" to evaluate the entire lesion





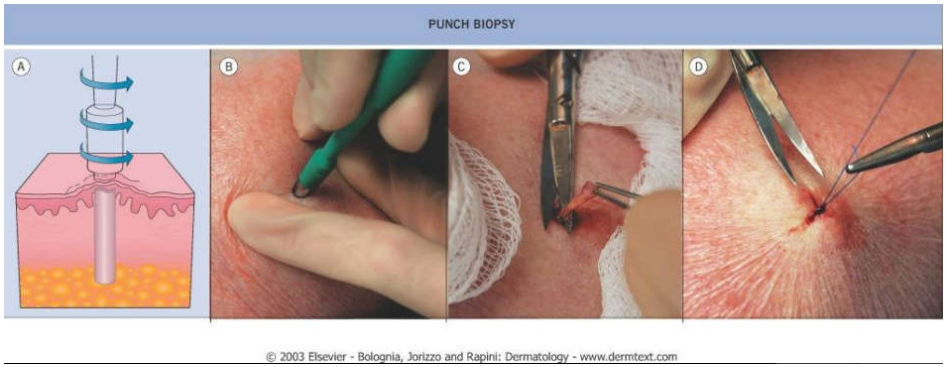


PUNCH BIOPSY

- Punch Biopsy Tool (commonly use 3, 4, or 5 mm)
- Needle Driver
- Forceps
- Suture

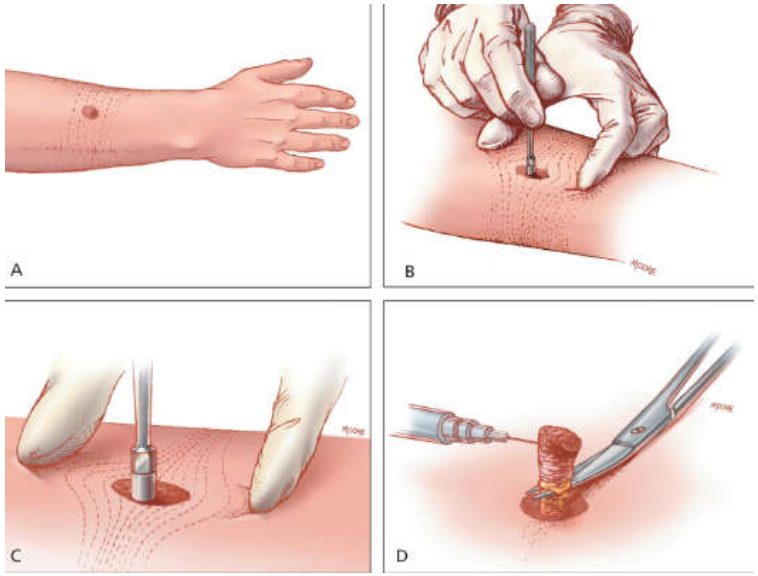
PUNCH BIOPSY TECHNIQUE

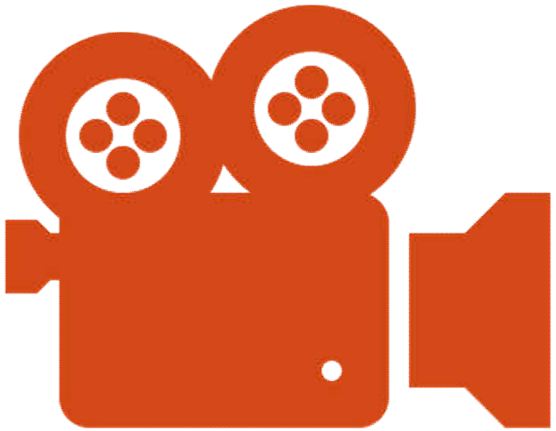
- Spread skin perpendicular to relaxed skin tension lines
- Advance Punch biopsy tool in a twisting back and forth motion
- Depth depends on site
- No need to cauterize, sutures stop bleeding
- Simple Interrupted stitches



WHEN TO USE

- I use almost exclusively for
  - ”Rashes”
  - Certain cosmetic sites where a small 3mm linear scar will hide better than a indented circular scar
- 5-10% of the biopsies I perform





WHAT WILL THESE BIOPSIES SHOW?

SKIN CANCER!

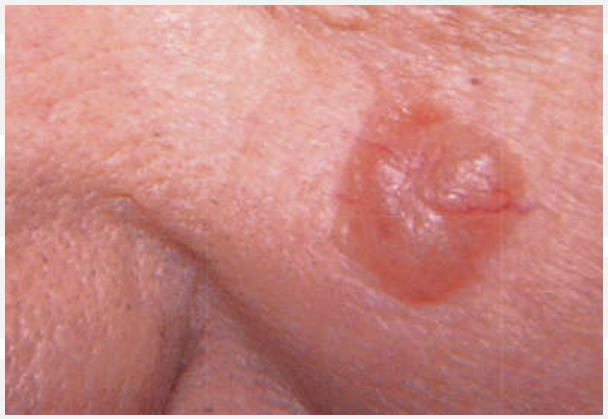
MAJOR TYPES OF SKIN CANCER

- Non-Melanoma skin cancer (NMSC)
  - Basal Cell Carcinoma (BCC)
  - Squamous Cell Carcinoma (SCC)
- Melanoma
  - Invasive Melanoma vs Melanoma in situ

1 IN 5 AMERICANS (20%) WILL DEVELOP A BCC OR SCC IN THEIR LIFETIME

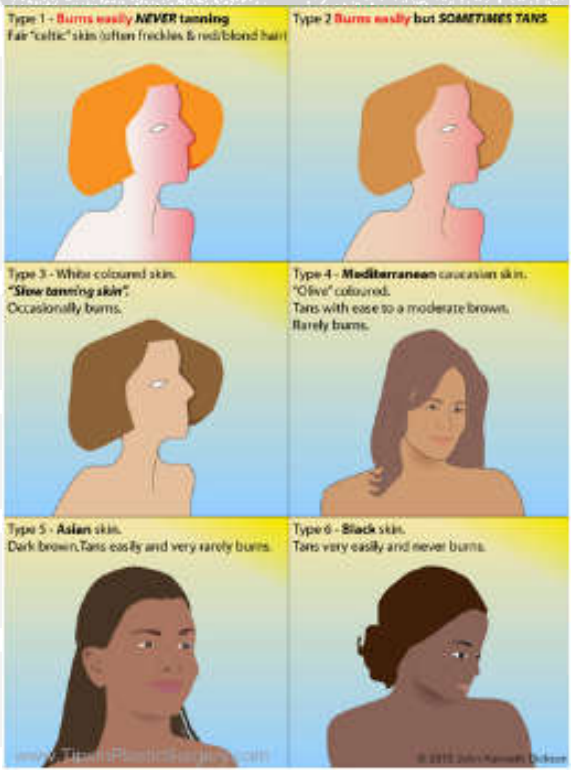
BASAL CELL CARCINOMA(BCC)- THE FACTS

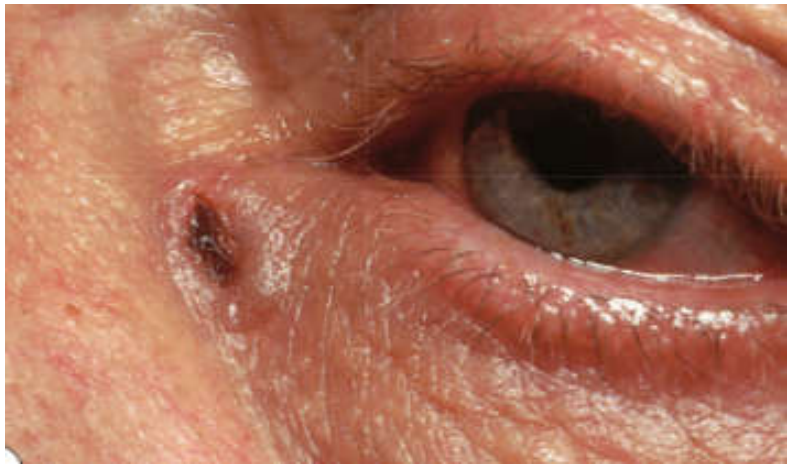
- The most common cancer in the entire world
- 80% of all NMSC
- ~3 million diagnosed per year in the USA
- Men more commonly affected than women (2:1)
- Mortality is very rare
- After the 1st BCC, there is about a 40% chance to develop a 2nd one
- Subtypes Include: superficial, nodular, infiltrative, morpheaform, micronodular

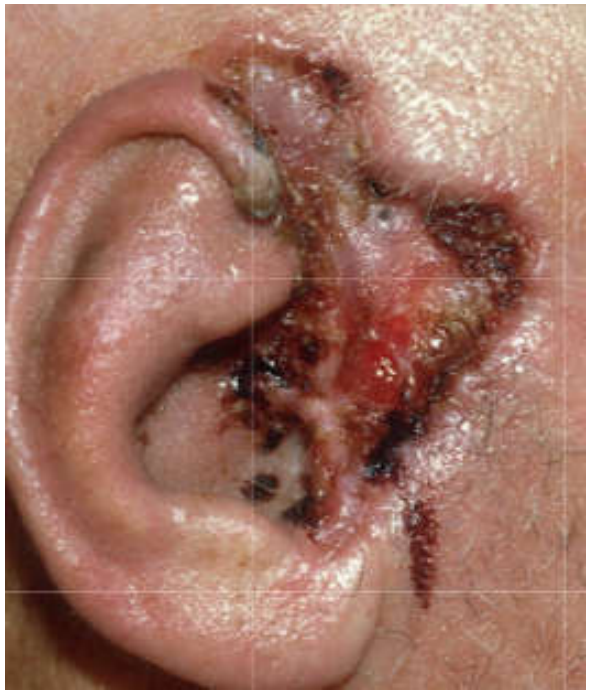


BCC- RISK FACTORS

- Intermittent/ intense sun exposure
- Sunburns at any age
- Fair skin
- Always burns in the sun (Type I Fitzpatrick skin)
- Red hair, blue eyes, freckling
- Immune suppression such as transplant patient







BCC- WHAT TO LOOK FOR?

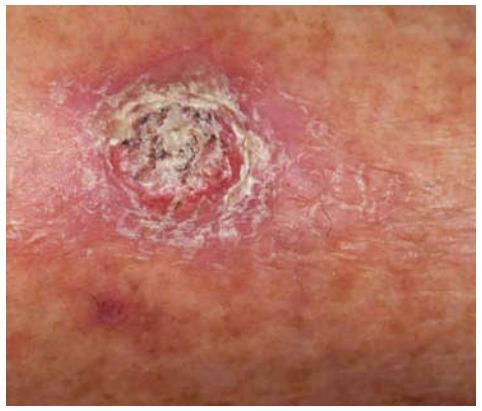
- Most commonly flesh colored papule with no extra pigment
- Shiny, pearly appearance
- Sometimes with increased vasculature
- Elevated or raised
- Can ulcerate and bleed
- Most commonly on the face

BCC- PRACTICAL ADVICE

- Typically presents as wounds or bumps that "just won't heal"
  - " Hey Doc I have this place on my face that started as an acne bump and it wouldn't heal for a few weeks, so then I tried Neosporin and it came very close to healing. Then 3 weeks later I woke up and there was blood on my pillowcase that I noticed was coming from this spot."
- Think of these like cavities. They are unlikely to spread to bad places, but can locally be aggressive causing pain, bleeding, discomfort, and sometimes disfigurement.

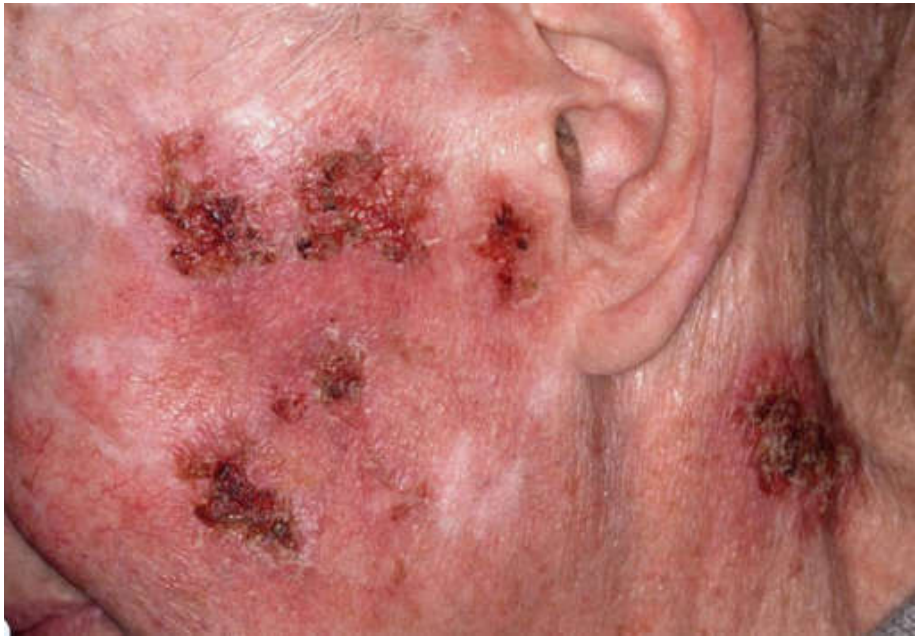
SQUAMOUS CELL CARCINOMA (SCC)- THE FACTS

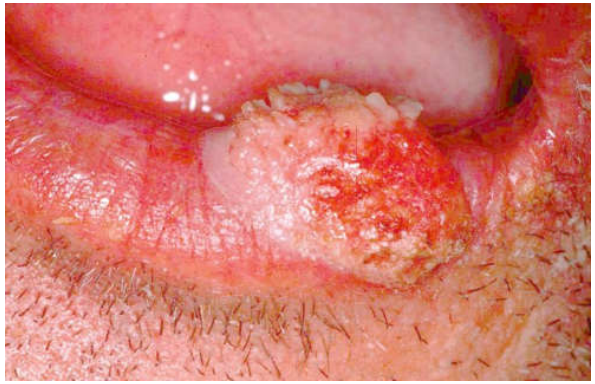
- 2nd most common cancer in the world
- 20-25% of all non-melanoma skin cancer
- ~1 million cases diagnosed per year
- Men more commonly affected (up to 5:1)
- Incidence increases significantly over the age of 60
- Mortality is rare, but more common than Basal Cell
  - Roughly 5% can spread to lymph nodes
- Subtypes include:
  - Invasive (well, moderate, or poorly differentiated
  - In Situ
  - Basosquamous
  - Keratoacanthoma

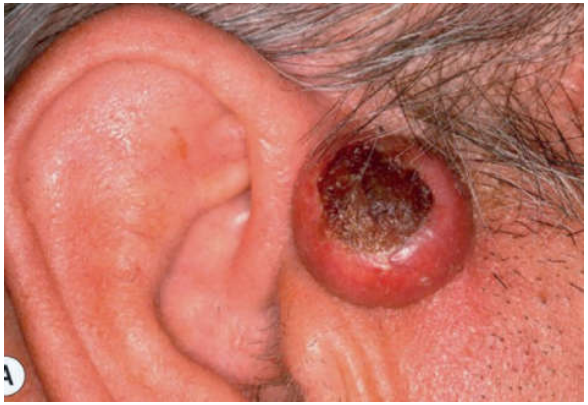


SCC- RISK FACTORS

- Cumulative long-term sun exposure
- Childhood sunburns
- Fair skin
- Red hair, blue eyes, freckles
- Areas of chronic trauma, such as burn scars
- Immunosuppression such as organ transplant



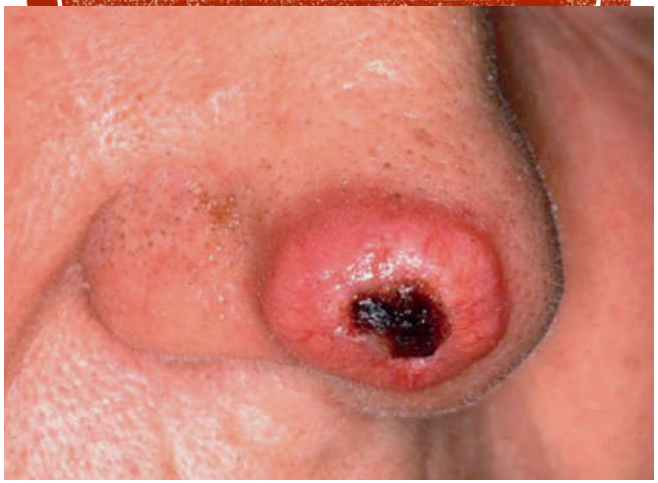




SCC- WHAT TO LOOK FOR?

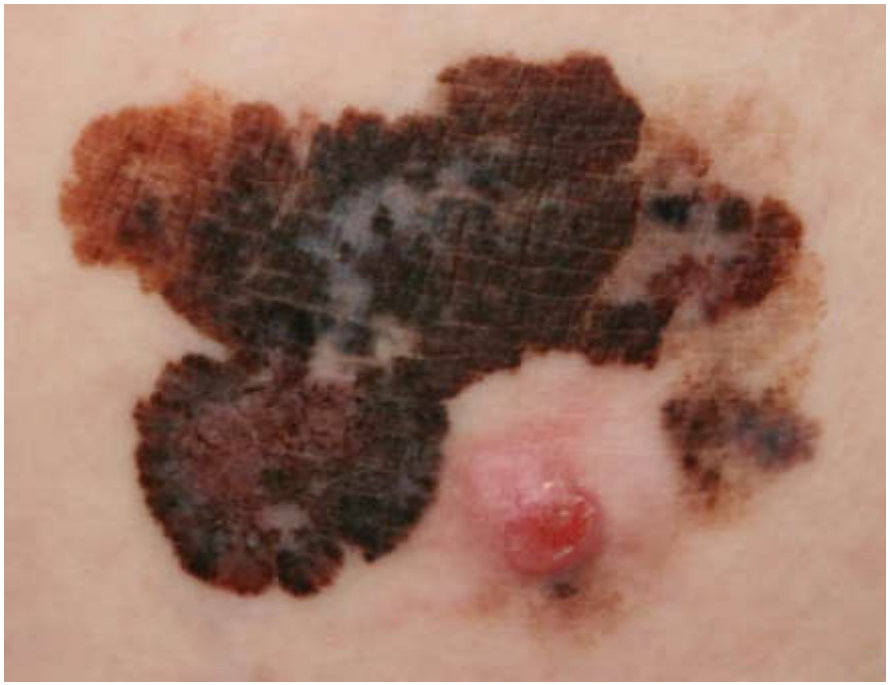
- Most commonly on the scalp, face, neck, forearms, hands, and shin (areas exposed to sun)
- Usually red to skin colored
- Usually feel like hard bumps with some induration or "substance" under the skin
- Can grow slowly or enlarge quickly depending on the type of SCC

SCC- PRACTICAL ADVICE



- Similar to basal cell carcinoma, the classic story is "a spot that just wont heal, despite numerous home remedies"
- The vast majority of SCC that I see everyday are easily treatable, like basal cell
  - However, a small subset can spread to lymph nodes and be dangerous to your health
- I worry most about ones that grow rapidly, evolve quickly and are in higher risk areas such as the ear or lip

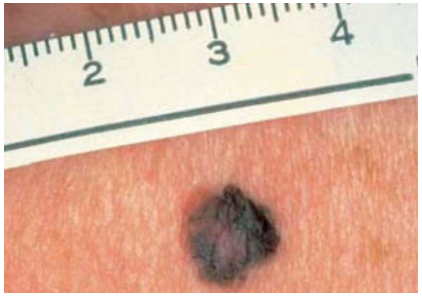
MELANOMA- THE FACTS

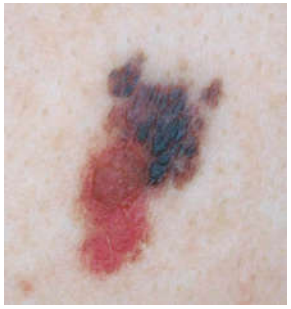


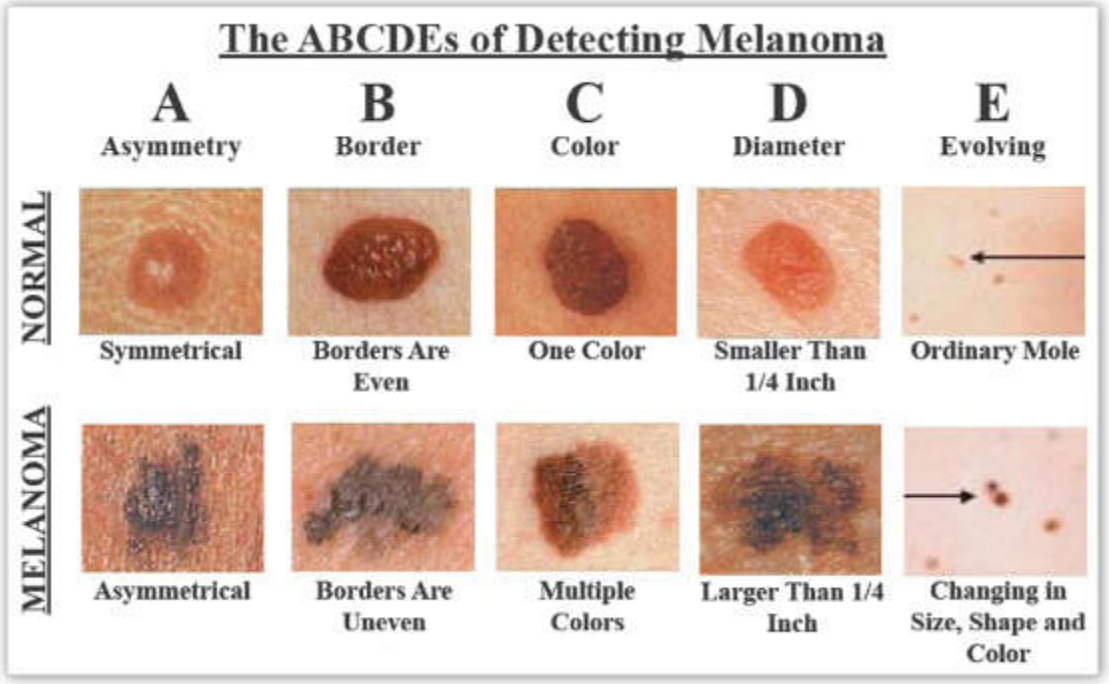
- Most commonly arises from skin
  - Can also arise from mucosa (mouth, etc.), Uveal tract (back of the eye), or anywhere with pigment cells
- One of the most common cancers in younger adults
- Affects men more than women
- Amount of cases diagnosed has risen, mortality has been stable and recently improving
  - Most rapidly increasing cancer in Caucasians
- Much higher risk of mortality compared to NMSC
  - Most important predictor is depth of tumor invasion
- Represents less than 5% of all skin cancers diagnosed, Lifetime risk around 1-2%

MELANOMA- RISK FACTORS

- Stronger genetic component than NMSC
  - Family history more important
- Fair skin, red hair, inability to tan
- Intense intermittent sun exposure
- Tanning bed usage
- Persons with >100 moles
- Persons with >5 atypical moles
- Previous self history of melanoma

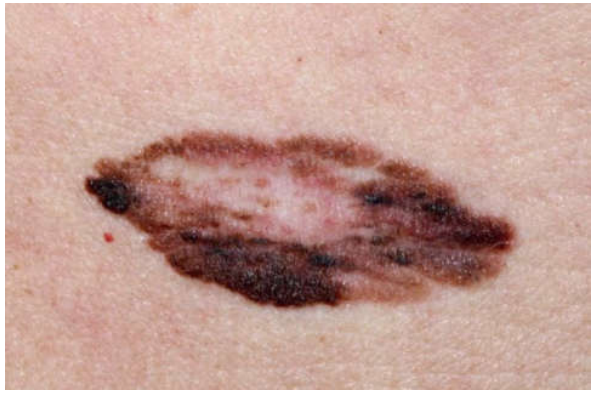


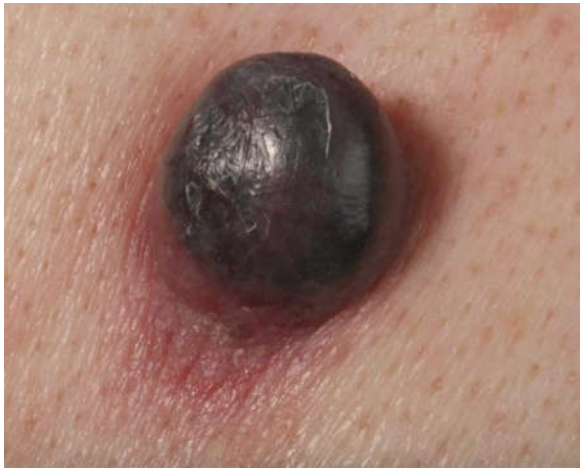




MELANOMA- WHAT TO LOOK FOR?

ABCDEs of melanoma





MELANOMA- PRACTICAL ADVICE

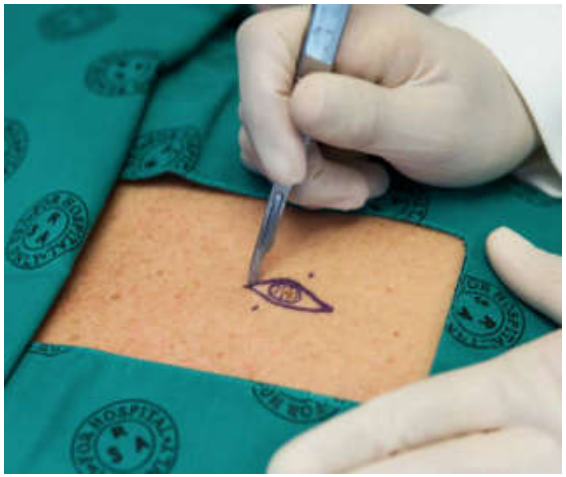
- Monthly self skin exams are important. If you notice a mole changing, bleeding, getting darker, don't hesitate to call your dermatologist for an appointment
- When caught early melanoma is most likely treatable with no long-term issues, but it does have a much higher risk of spreading once it has grown deeper in the skin

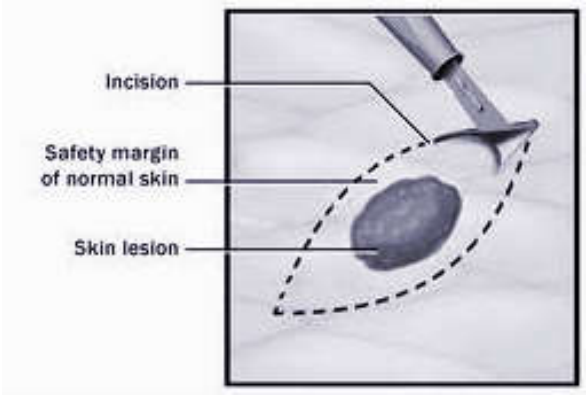
MELANOMA IN SITU

- Early melanoma (non-invasive), confined to only the upper most layer of the skin
- Occurs very often in sun damaged skin
- Once treated, overall survival is great
- Patients with history of MIS, have close to same survival as someone who has never been diagnosed
- Risk factor for development of unrelated invasive melanoma
- Marker of significant lifetime sun exposure

TREATMENT OPTIONS NMSC (BCC/SCC)

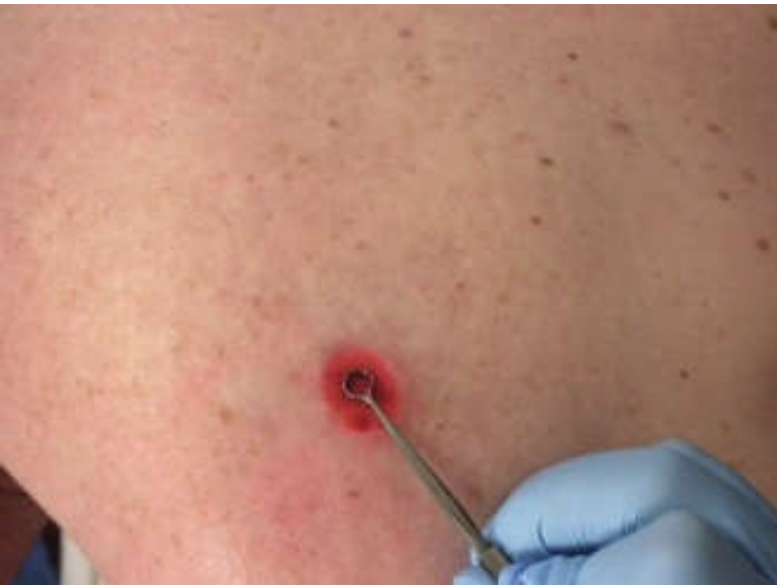
- Depends on location of the tumor
- For head and neck skin cancers Mohs surgery is the standard of care
- Other options include:
  - Wide Local Excision
  - Electrodessication and Curretage
  - Certain Subtypes can be treated with 5-fluorouracil (topical chemo)or imiquimod (topical immune modulator)
  - If patient cannot undergo surgery (very few) can send for radiation treatment
- All are in office procedures with incredible safety, cost effectiveness, and the requirement of only local numbing medicine

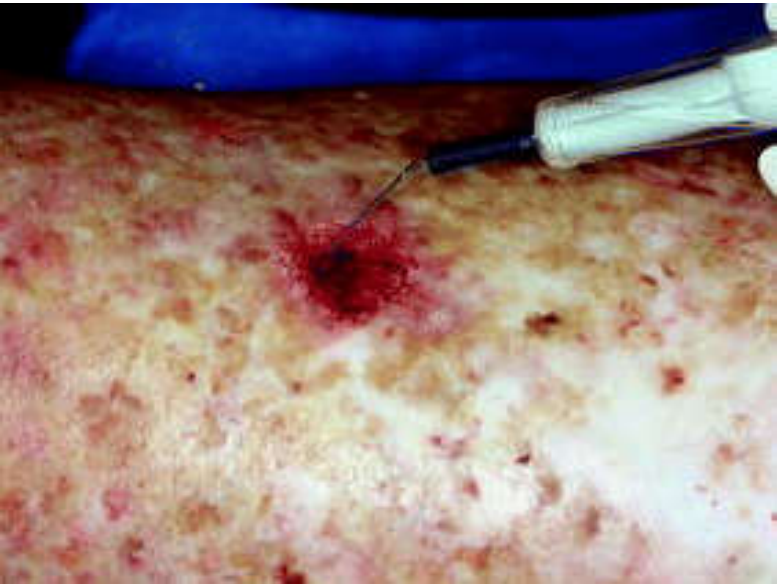




WIDE LOCAL EXCISION

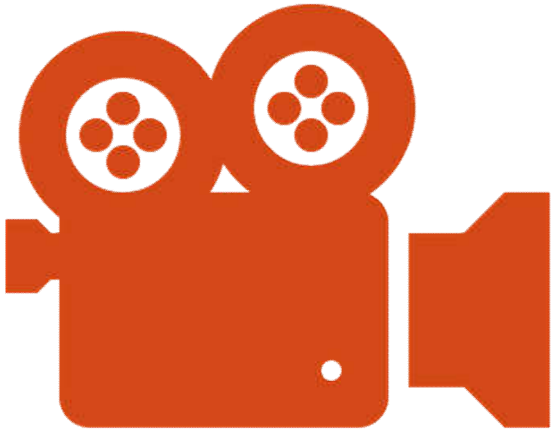
- Standard margins is taken around the skin cancer, wound is sutured, pathology is sent off, wait to here back with results
- 5mm margin for BCC and SCC
- At least 1cm for melanoma
- Cure rate is around 97%
- Limiting factor is that only about 1% of true margin is evaluated

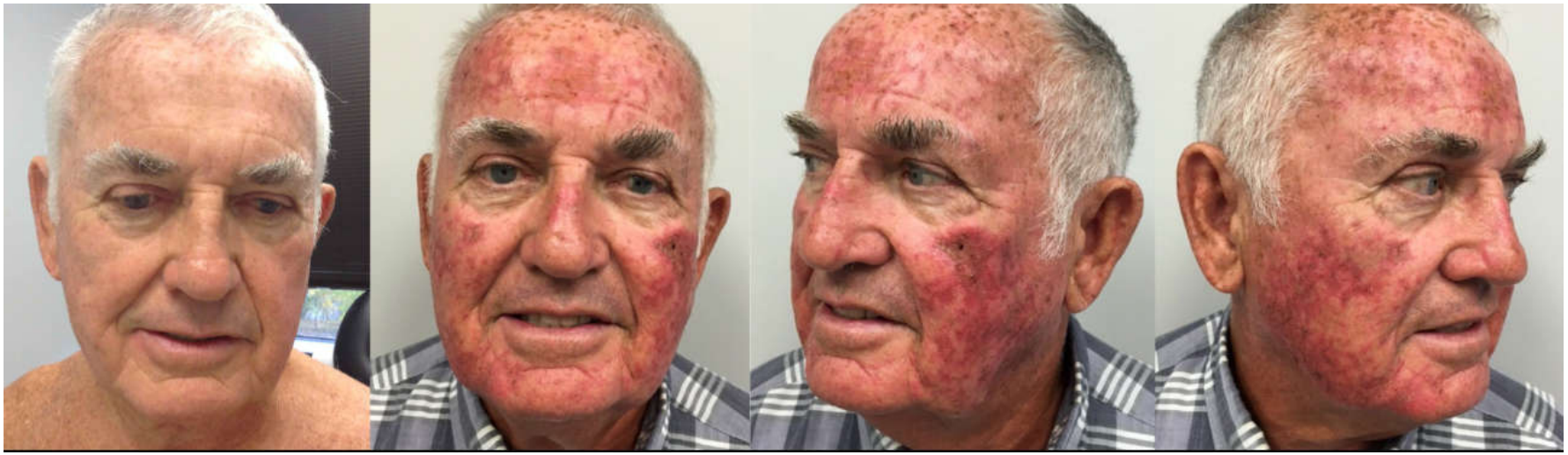




ELECTRODESSICATION AND CURETTAGE (EDC)…. AKA "SCRAPE AND BURN"

- Skin affected by skin cancer is friable and can be curreted ("scraped") easily
- Only indicated for non dangerous NMSC that measure smaller than 2cm
  - Subtypes eligible for EDC include superficial BCC, nodular BCC, SCC-IS, and occassionally well-differentiated SCC
  - Location important
- More commonly used on non-cosmetic sensitve areas because the scar is circular and more visible
- Cure rate i~ 90-93%, higher in experienced hands
- Okay with lower cure rate because these subtypes are non aggressive and can be monitored
- Procedure takes 1-2 mins





TOPICAL CREAMS

- Most common are 5-fluoruracil and Imiquimod
- Work very differently
- Indicated only for superficial BCC, Squamous cell carcinoma in-situ, or actinic keratoses
- 5-fluorouracil is applied BID x 2-3 weeks depending on site
- Imiquimod is applied M-F x 2-4 weeks
- Cure rate is ~60-90% or lower depending on which study

MOHS MICROGRAPHIC SURGERY (MMS)

- The standard of care on head and neck NMSC
- Cure rate over 99% for most tumors
- This is due to 100% margin control

ACMS American College of Mohs Surgery

Fellowship trained skin cancer and reconstructive surgeons

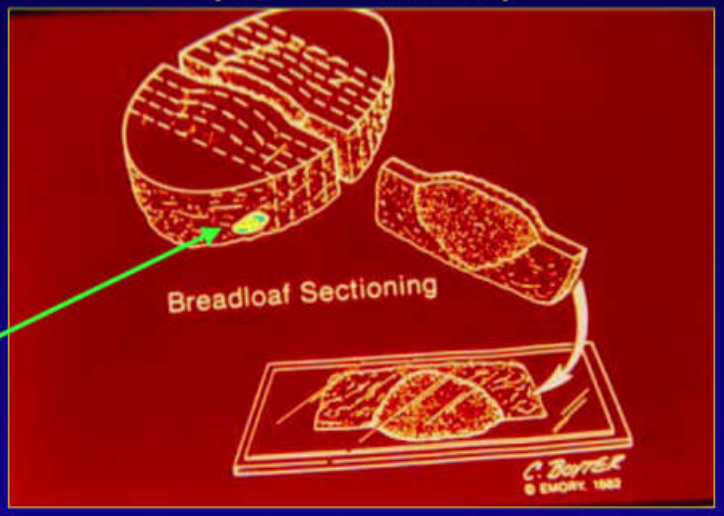
Dr. Frederick Mohs

Conventional surgery

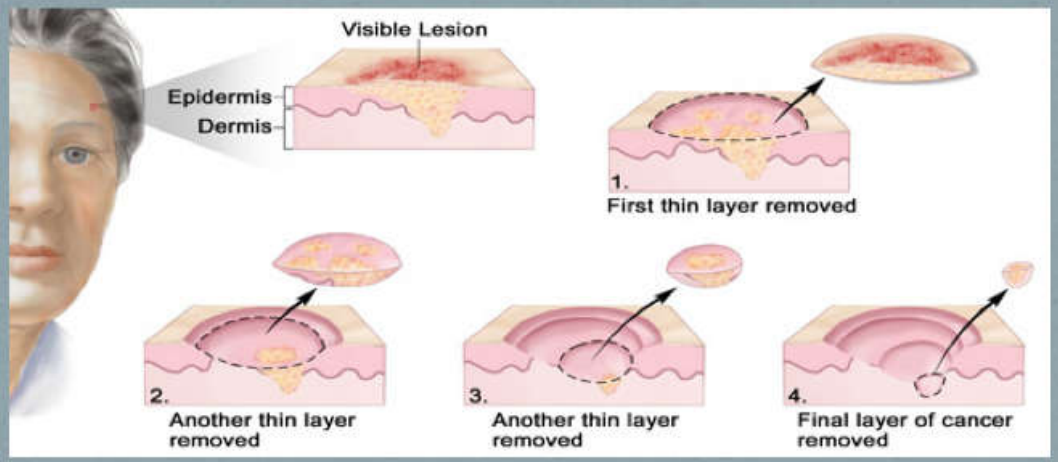
Mohs micrographic surgery

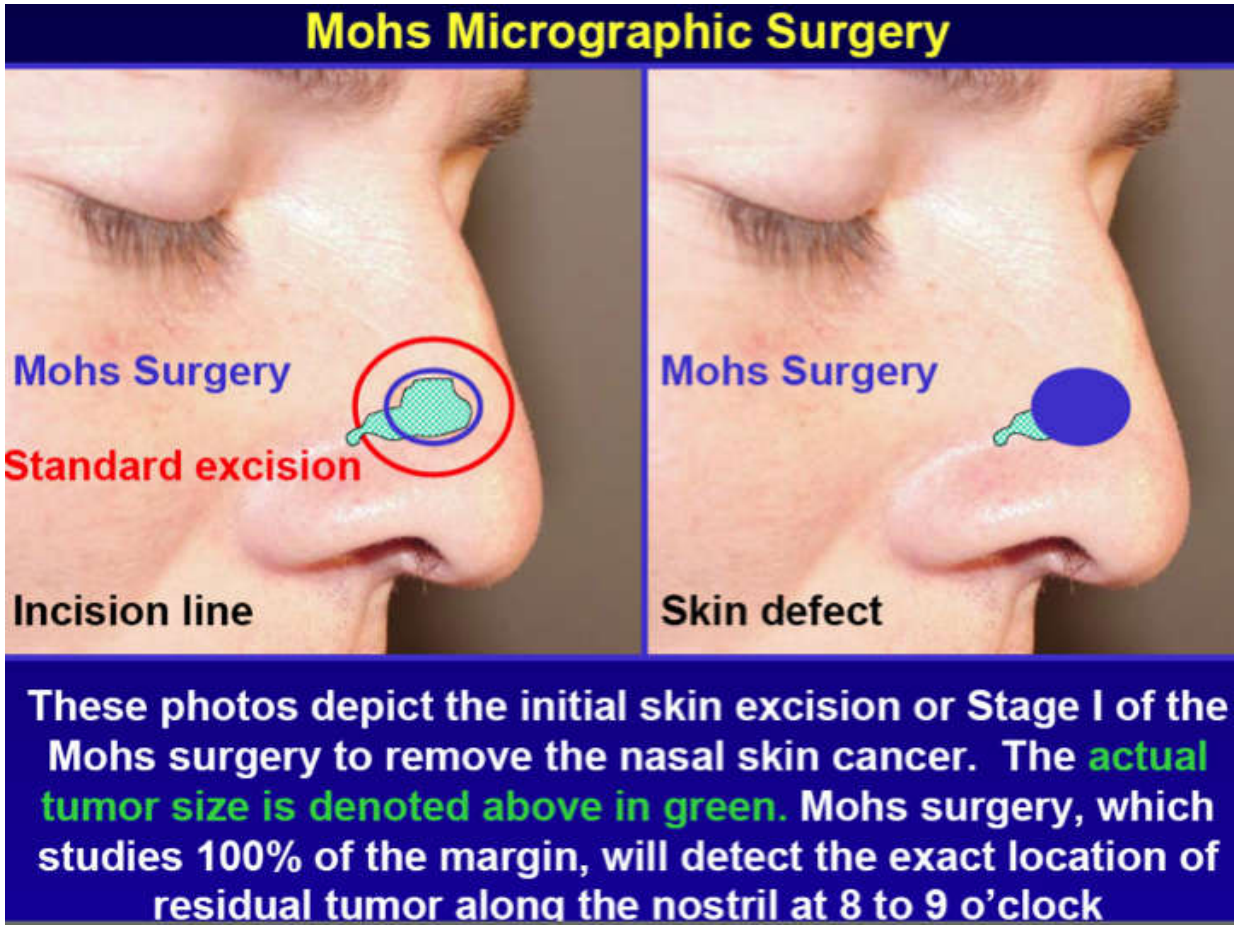
100% MARGIN CONTROL

Breadloaf Sectioning (most common)



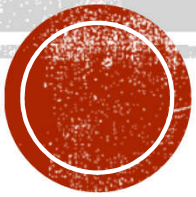
The tissue is sliced like a loaf of bread. The tentacle (yellow area) is missed so the tumor will not be cured.

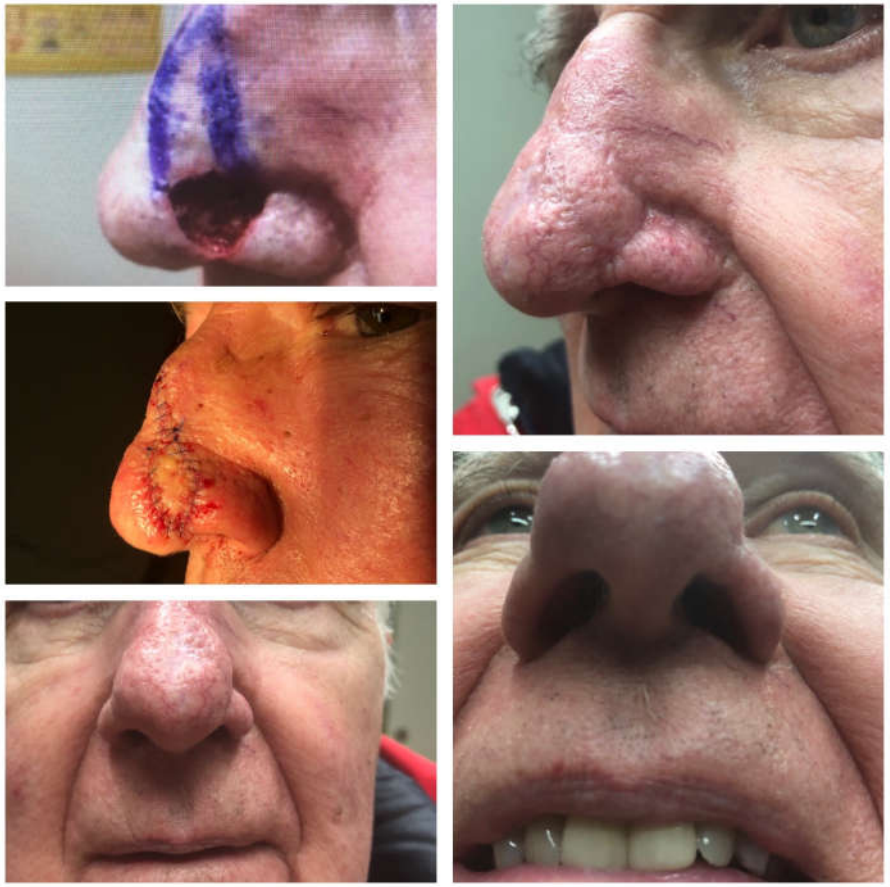

Visible Lesion
Epidermis
Dermis
1.
First thin layer removed
2.
Another thin layer removed
3.
Another thin layer removed
4.
Final layer of cancer removed

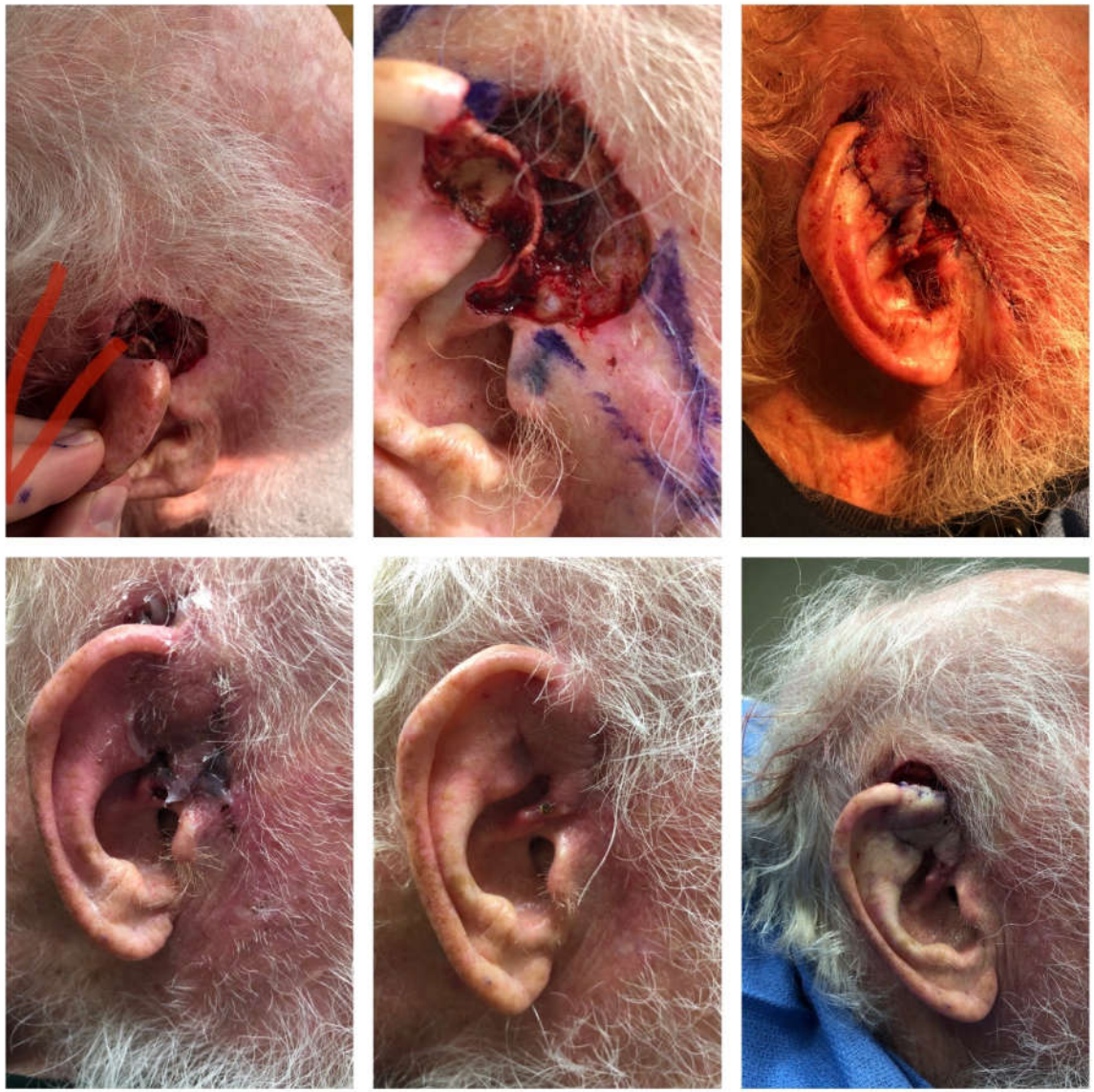

Mohs Micrographic Surgery
Mohs Surgery
Standard excision
Incision line
Mohs Surgery
Skin defect
These photos depict the initial skin excision or Stage I of the Mohs surgery to remove the nasal skin cancer. The actual tumor size is denoted above in green. Mohs surgery, which studies 100% of the margin, will detect the exact location of residual tumor along the nostril at 8 to 9 o'clock

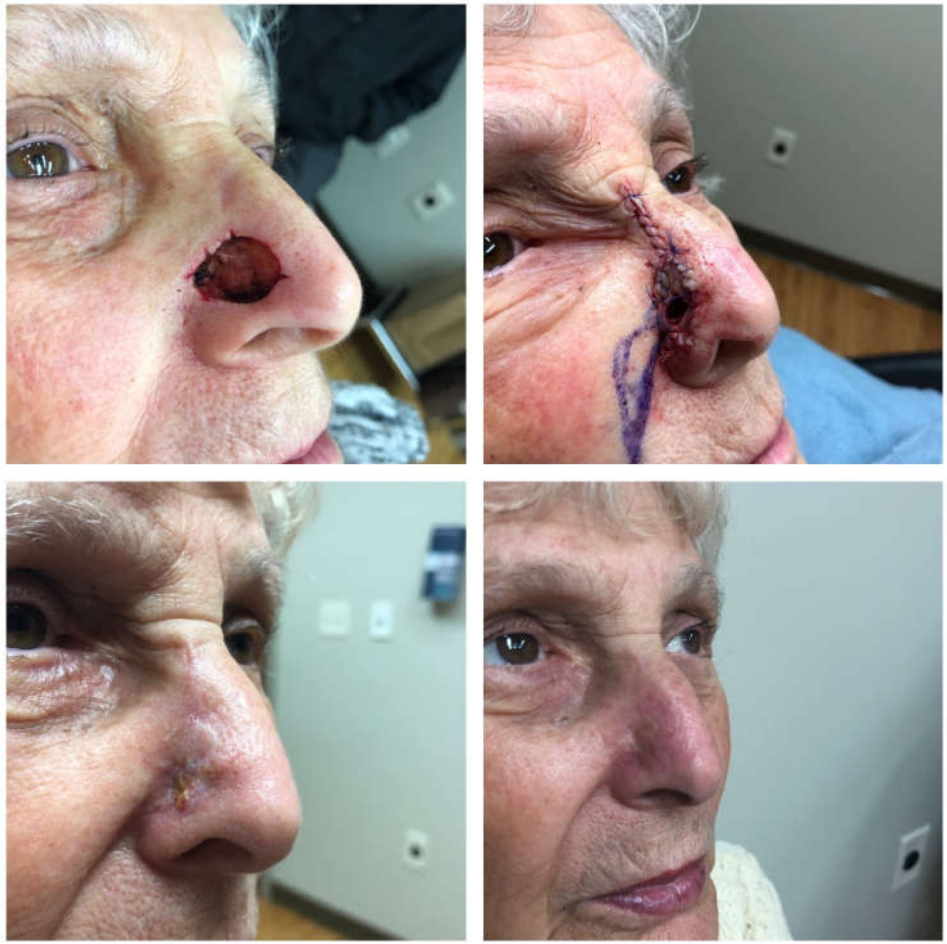
FAVORITE PART OF MY JOB!!!

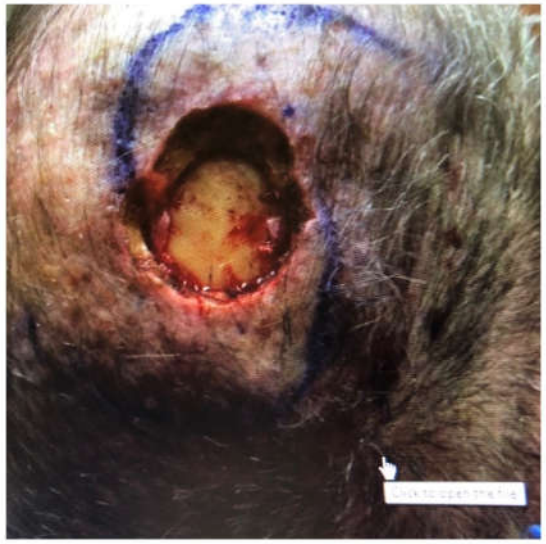
Reconstruction and advanced suturing

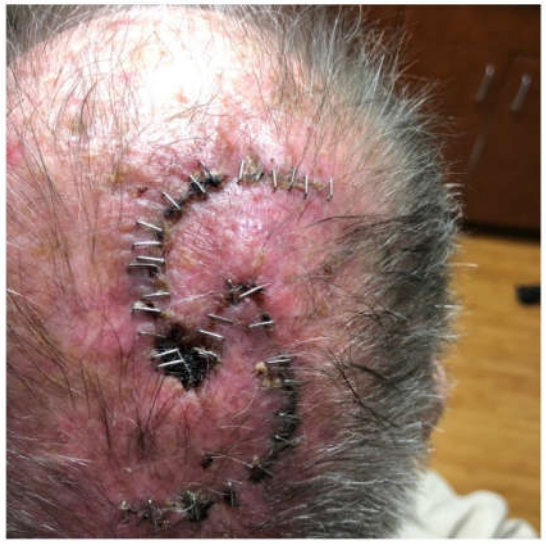


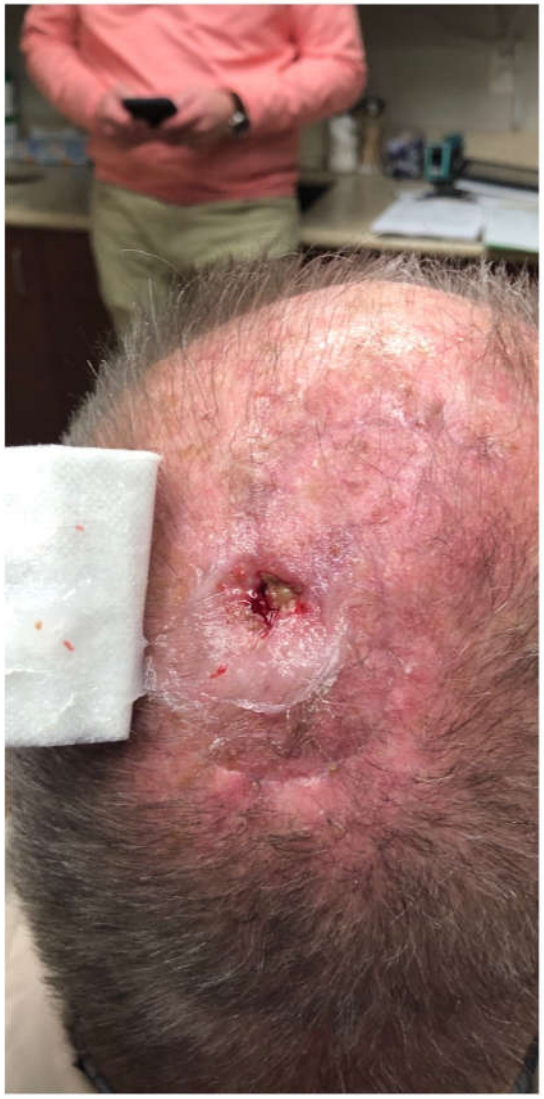


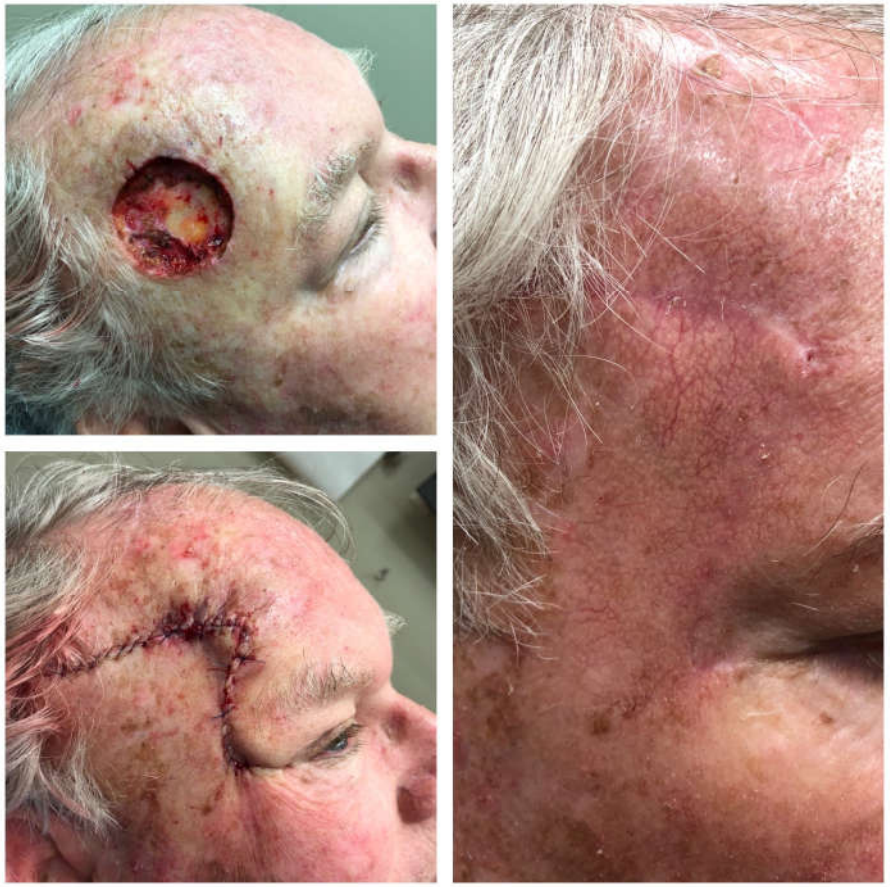


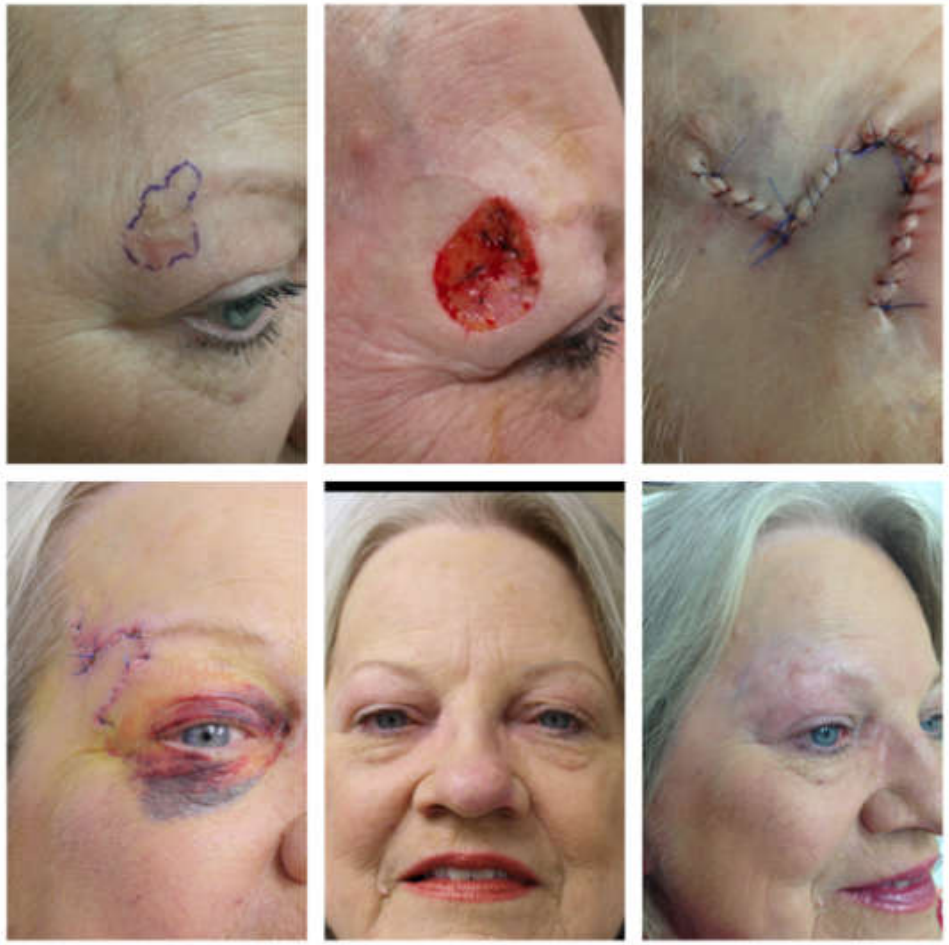


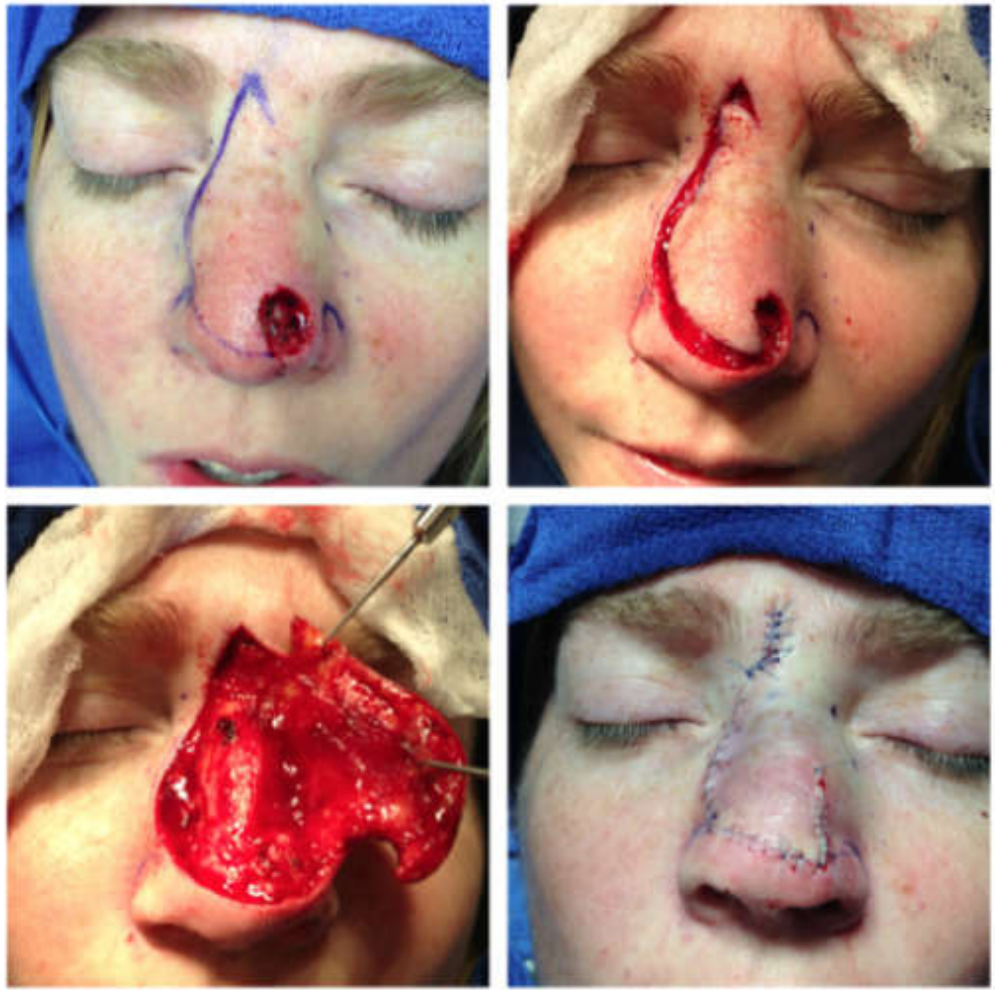


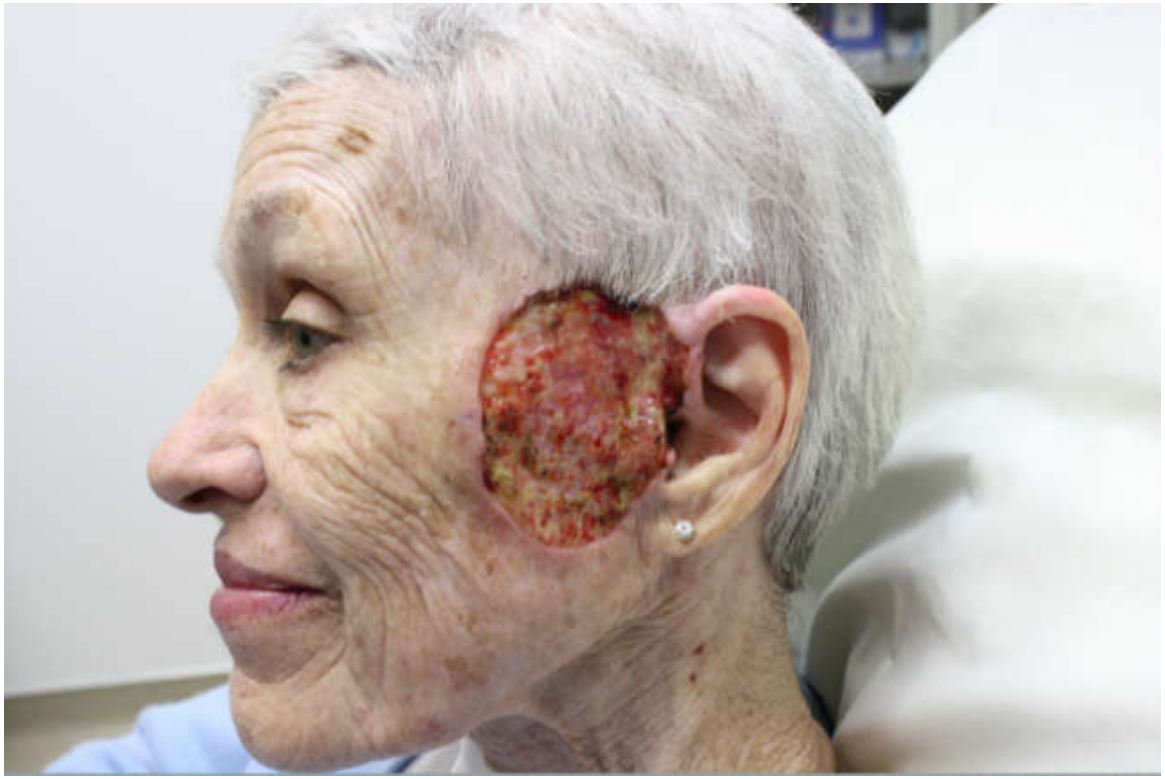


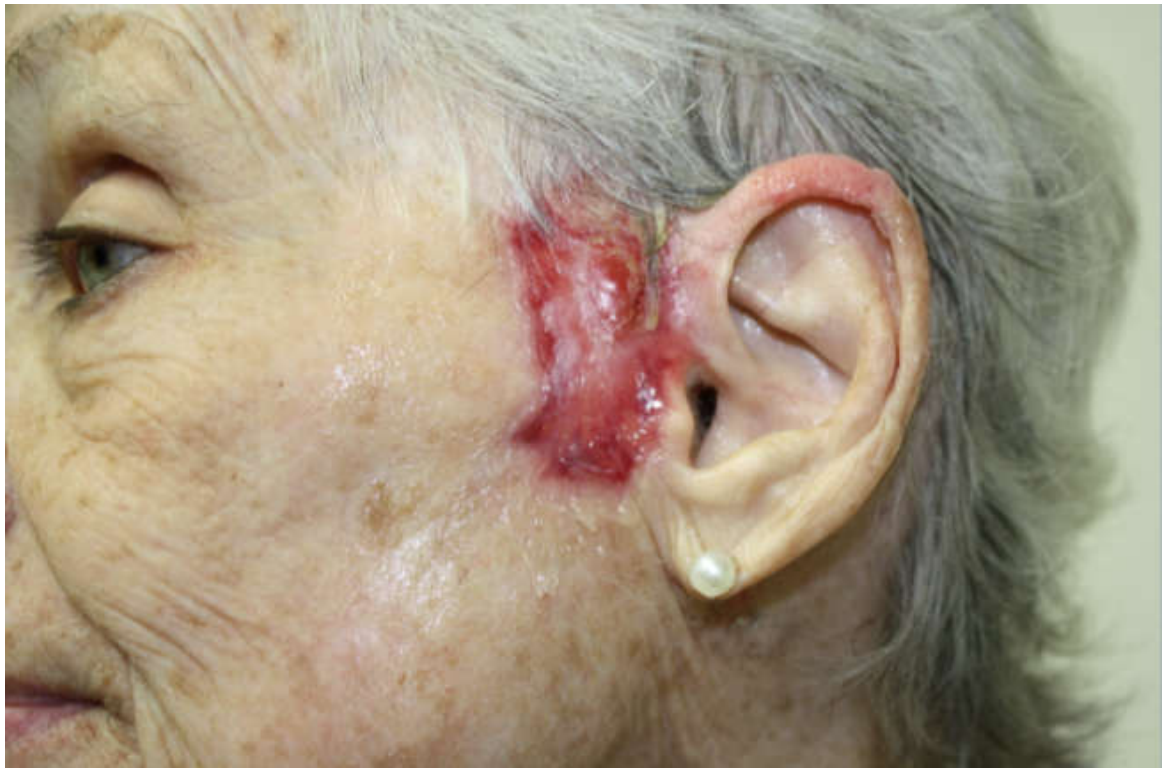


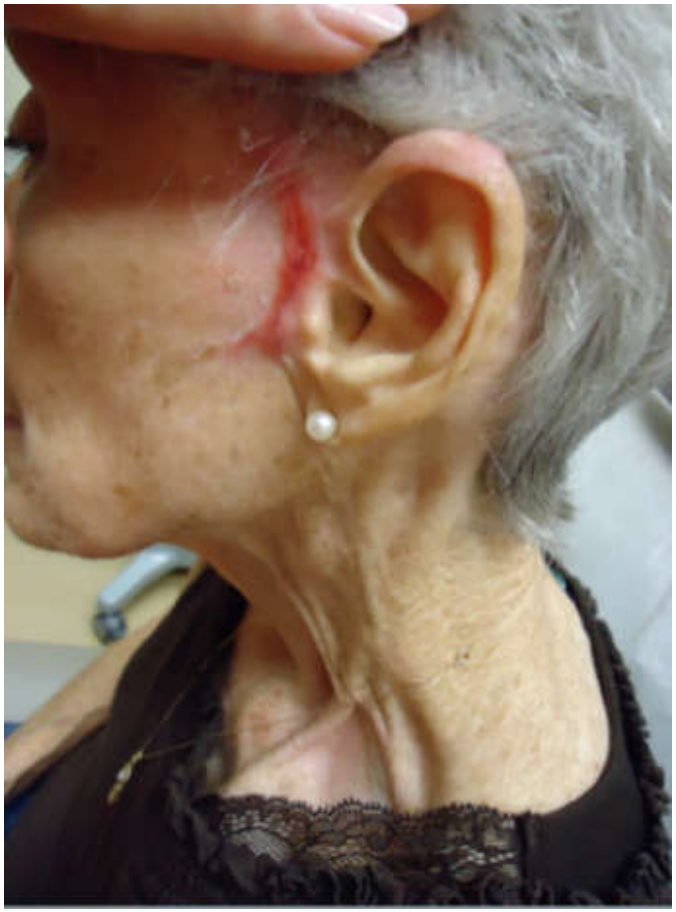


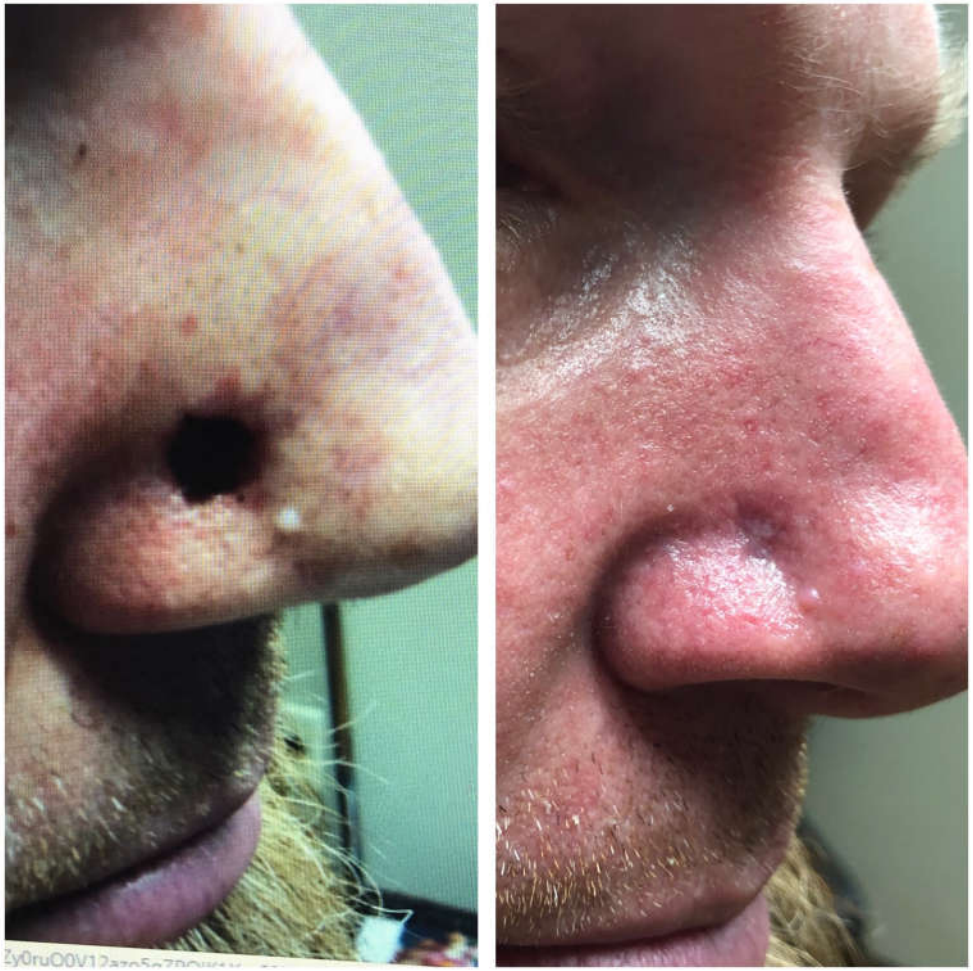


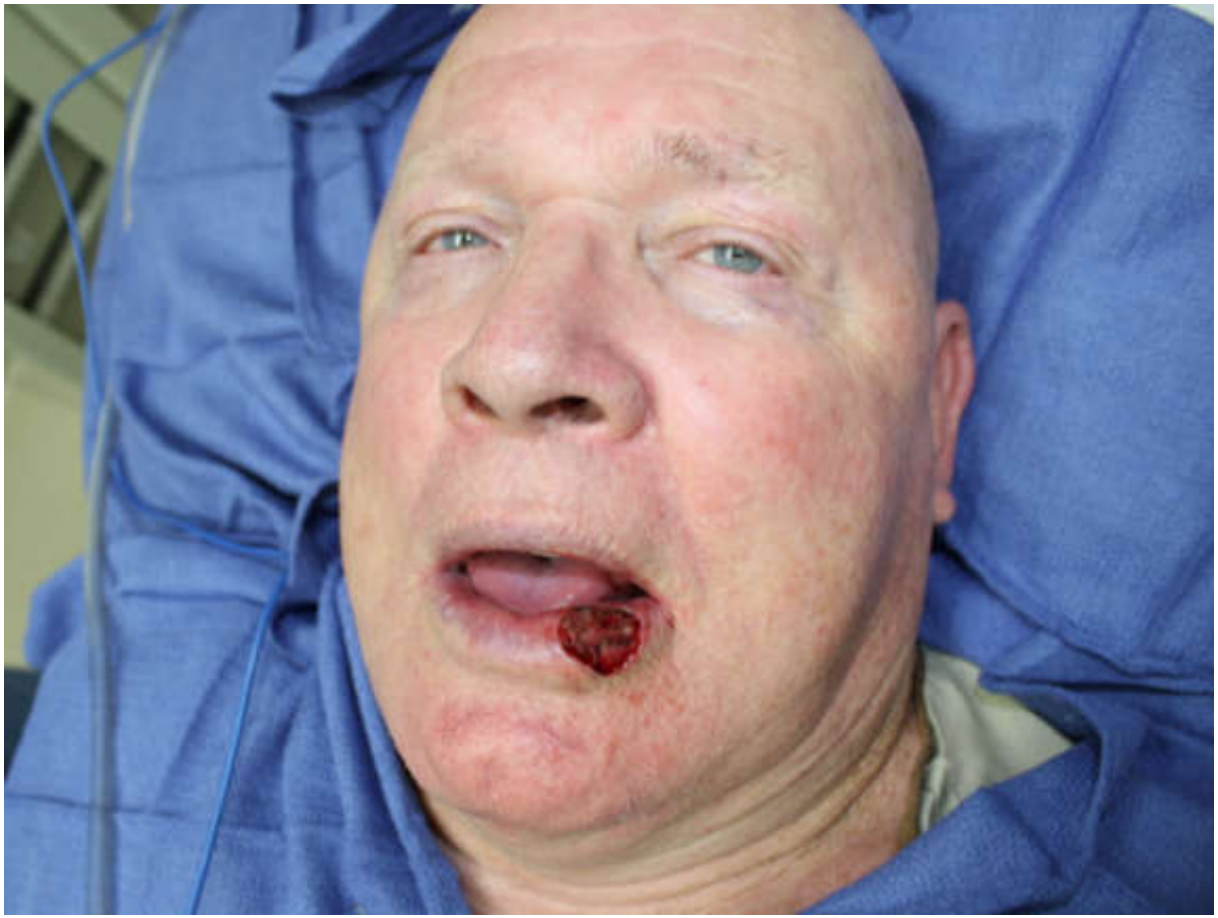


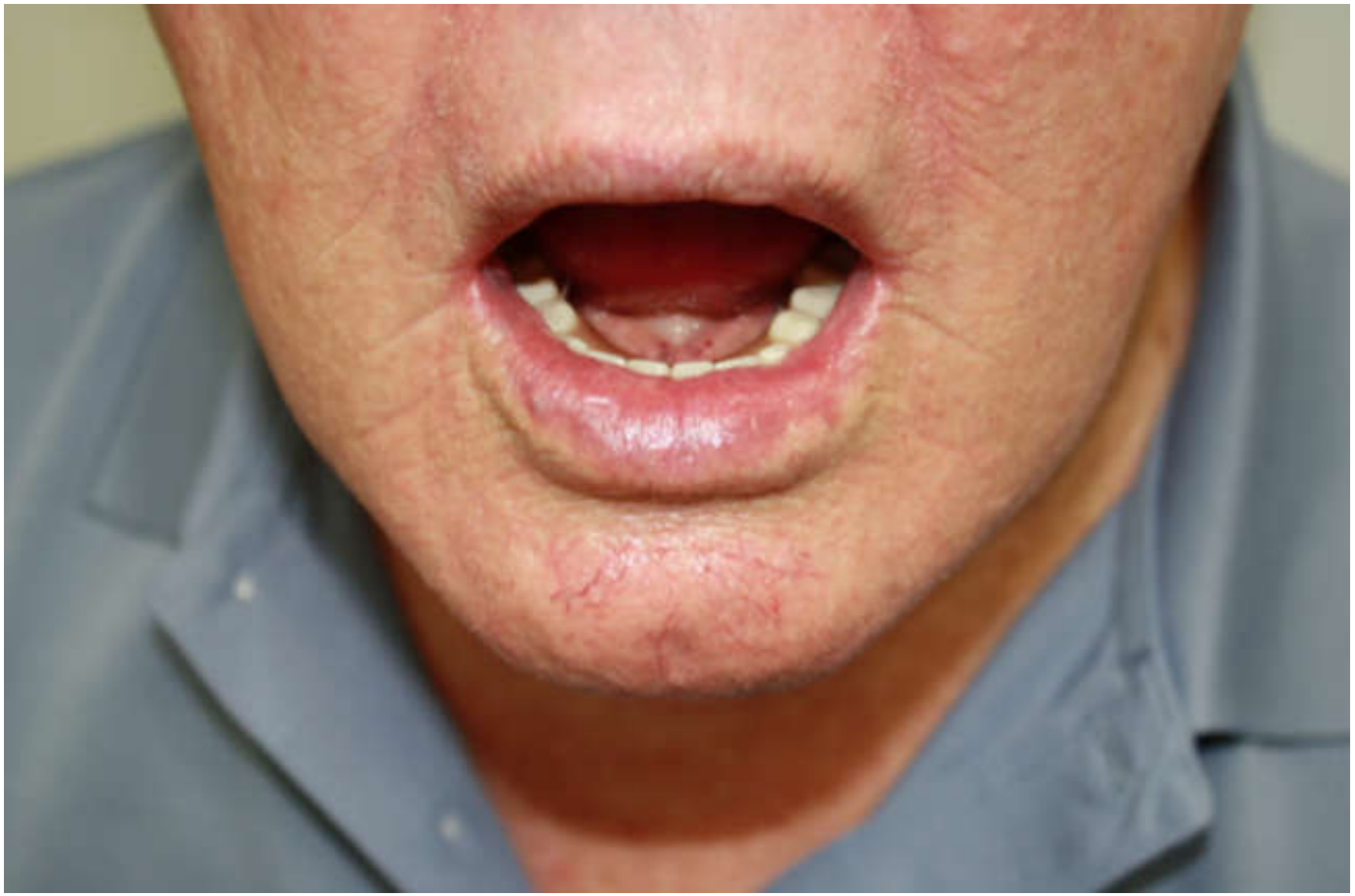












SUTURING

- My whole life and career is built around suturing
- The MOST important part of a good stitch job is the deep dermal stitches that will dissolve with time
- THINK of top visible sutures like window dressing
- When possible try to hide suture line in Relaxed skin tension lines and cosmetic boundaries

CONTINUING MEDICAL EDUCATION

Surgical technique for optimal outcomes

Part I. Cutting tissue: Incising, excising, and undermining

1. Surgical technique for optimal outcomes
   Miller, Christopher J. et al.
   Journal of the American Academy of Dermatology, Volume 72, Issue 3, 377 - 387

Surgical technique for optimal outcomes

Part II. Repairing tissue: Suturing

1. Surgical technique for optimal outcomes
   Miller, Christopher J. et al.
   Journal of the American Academy of Dermatology, Volume 72, Issue 3, 389 - 402

BEST ARTICLES ABOUT SKIN SURGERY AND SUTURING

QUESTIONS??