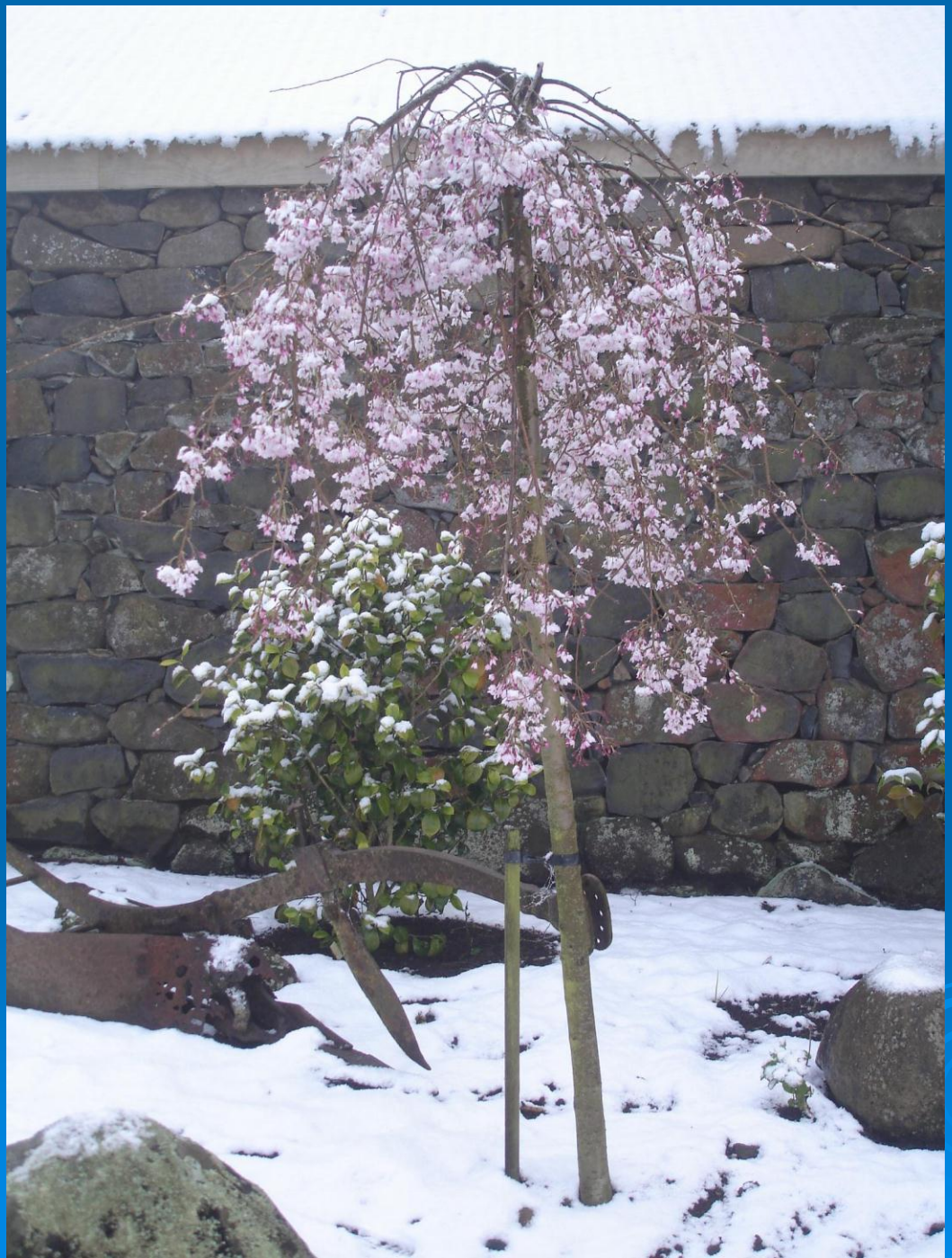


Skin Surgery Skills Workshop

GPCME Meeting
Dunedin July 28th 2011

Dean Ruske

Martyn Fields

Jamie Ryan

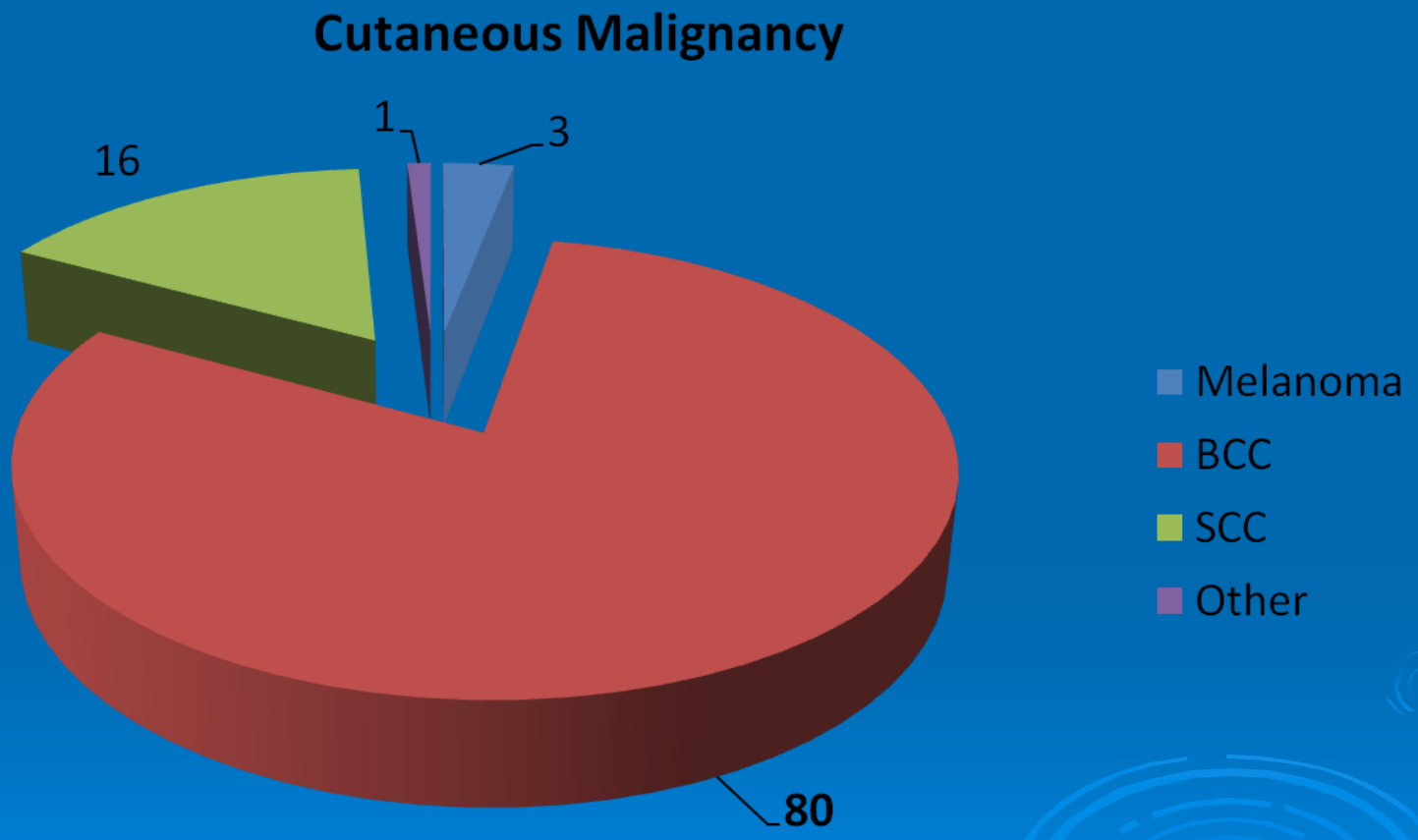
Peter Chapman-Smith

Incidence – non melanomatous

- 67,000 new cases per year
- Approx $33.4 million cost per year

The Costs of Skin Cancer to New Zealand. Des O'Dea; *Cancer Update in Practice;* Issue 2 2000

Cutaneous Malignancies

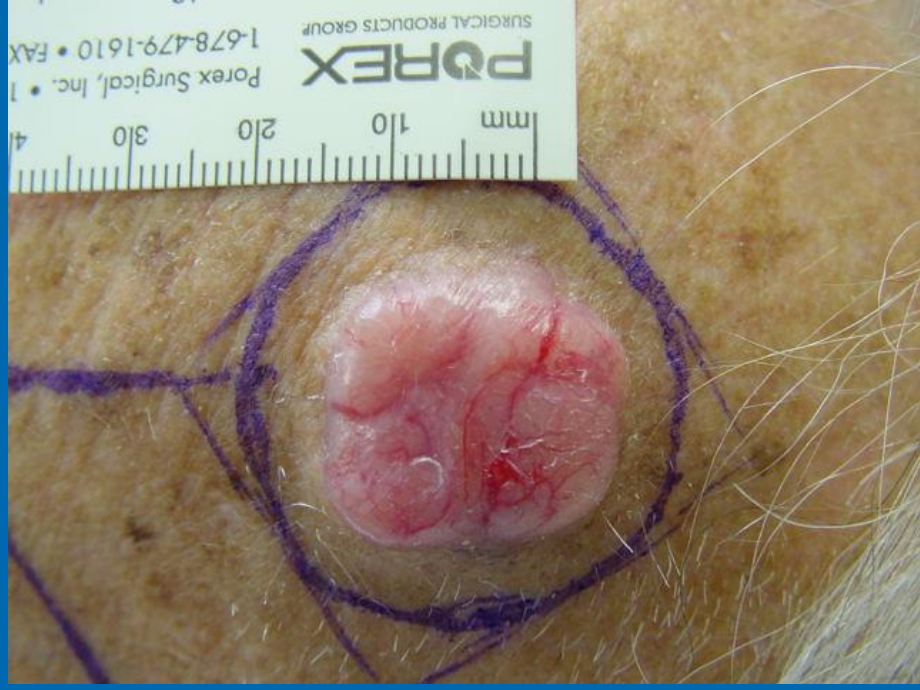


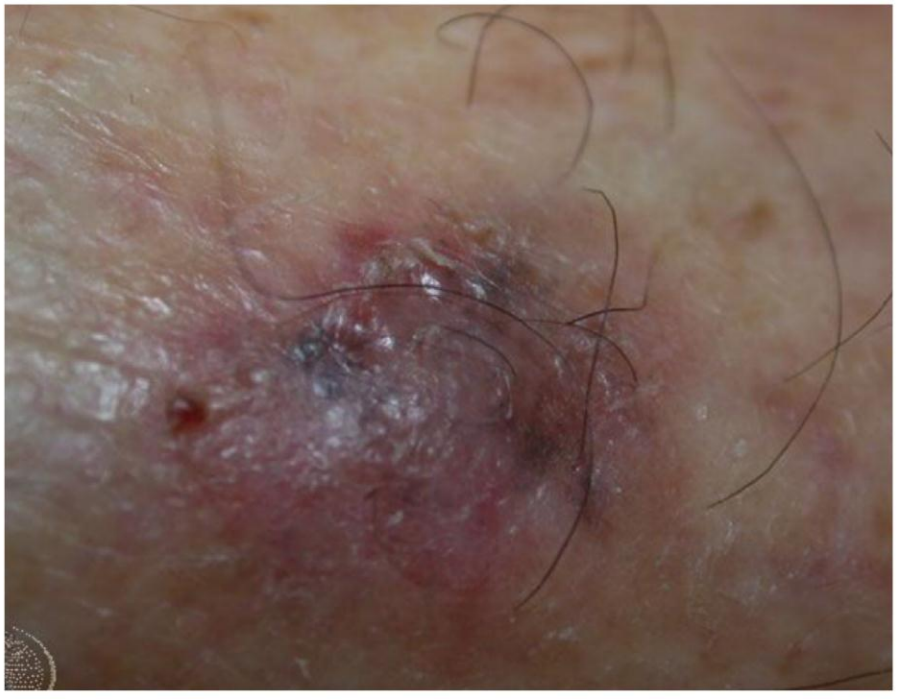
Risk factors

- Ultraviolet light
  - Sunlight
  - PUVA
- Age > 40yrs
- Male > Female
- Skin type
- HPV (36)
- Precursor lesions/ Previous NMSC
- Lowered Immunity
- Trauma and burns
- Arsenic exposure
- Rare:
  - Recessive dystrophic epidermolysis bullosa
  - Basal cell naevus syndrome (Gorlin Syndrome)
  - Xeroderma Pigmentosum
  - Albinism

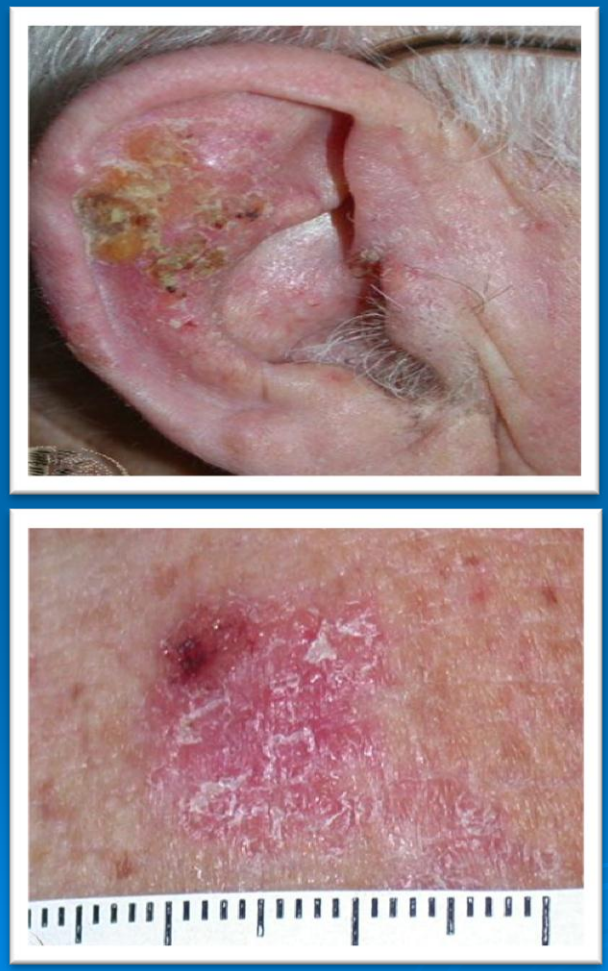
BCC

- Rodent ulcer
- Most common facial carcinoma
- Nodular
- Morphoeic
- Ulcerative
- Pigmented
- Very low metastatic potential





Squamous Cell Carcinoma In Situ

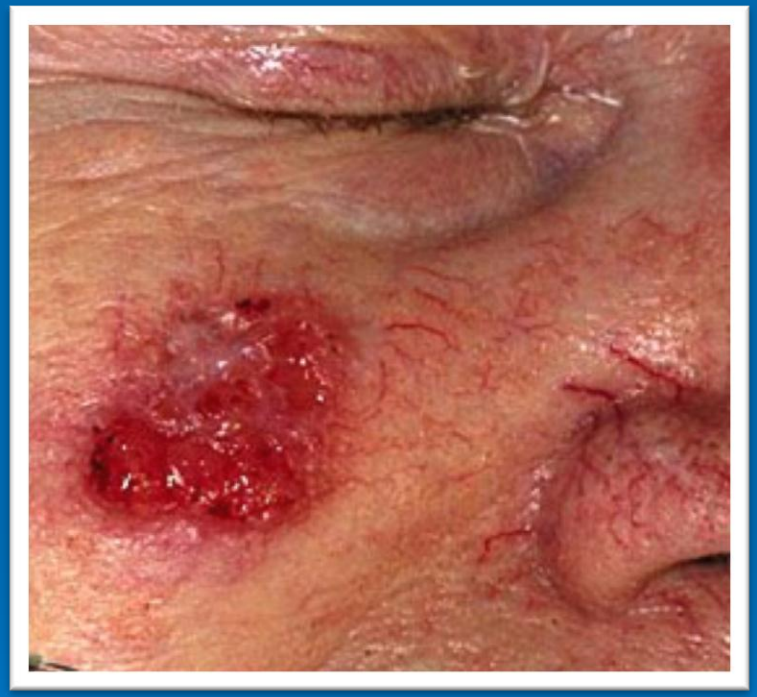


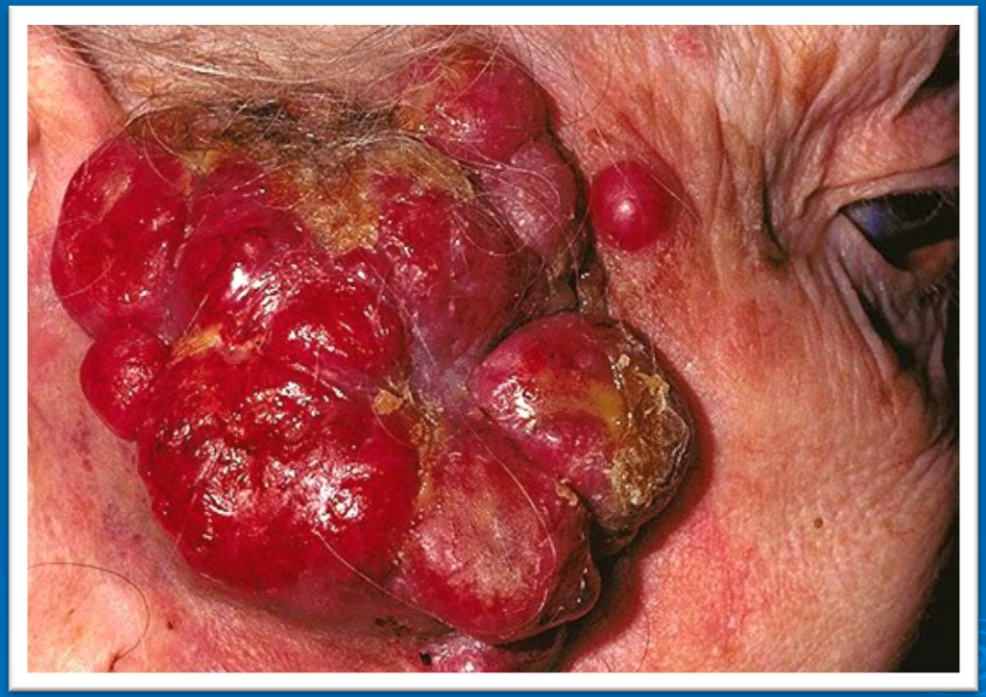
- Intra-epidermal SCC
- Bowen's Disease
- 5% progress to invasive SCC
- Cells with atypical nuclei (enlarged hyperchromatic) at all levels of epidermis

SCC

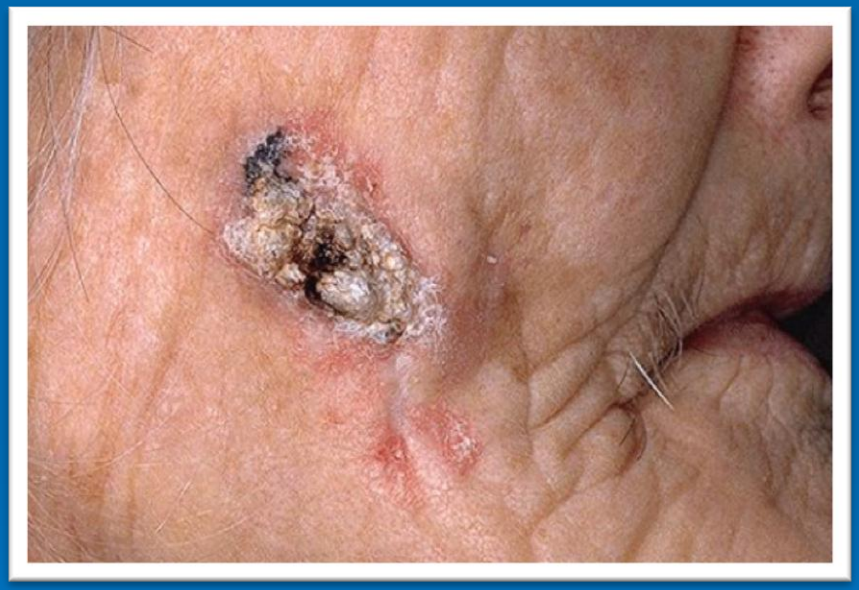
- Common
- Orderly metastatic potential
- Prognostic features
  - Perineural spread
  - Vascular invasion
  - Incomplete excision
  - Dedifferentiation
  - Large size >2cm
  - Depth >4-5mm
  - Recurrence
  - Site – ear, temple, scalp
  - Immunosuppressed
  - Rapid increase in size

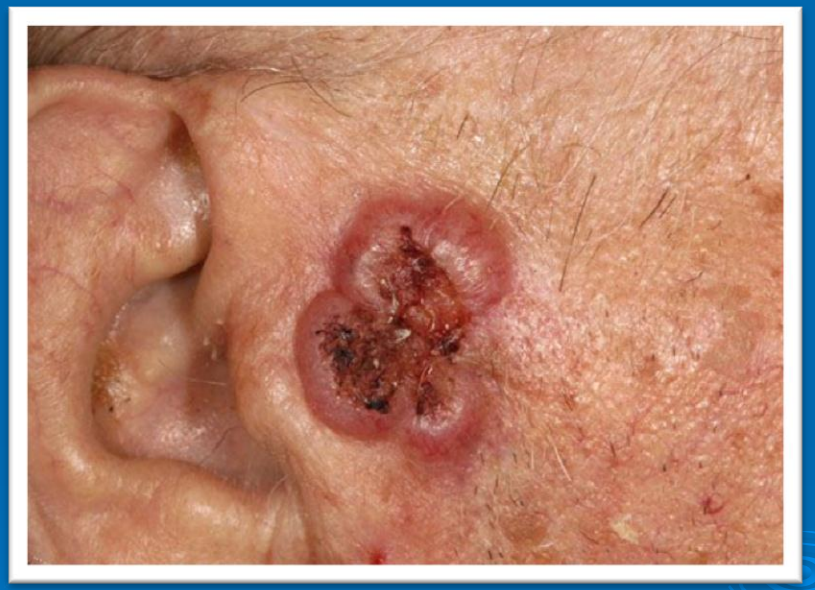
Squamous cell carcinoma



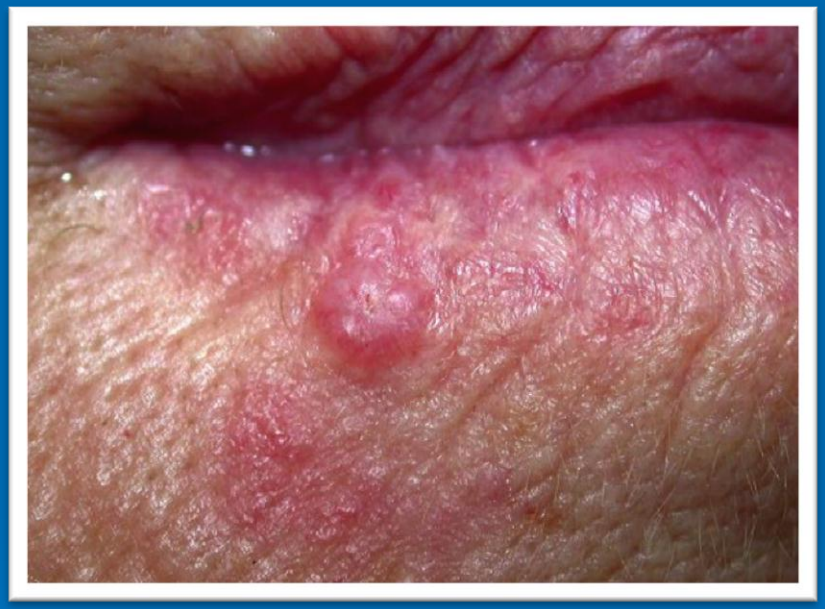


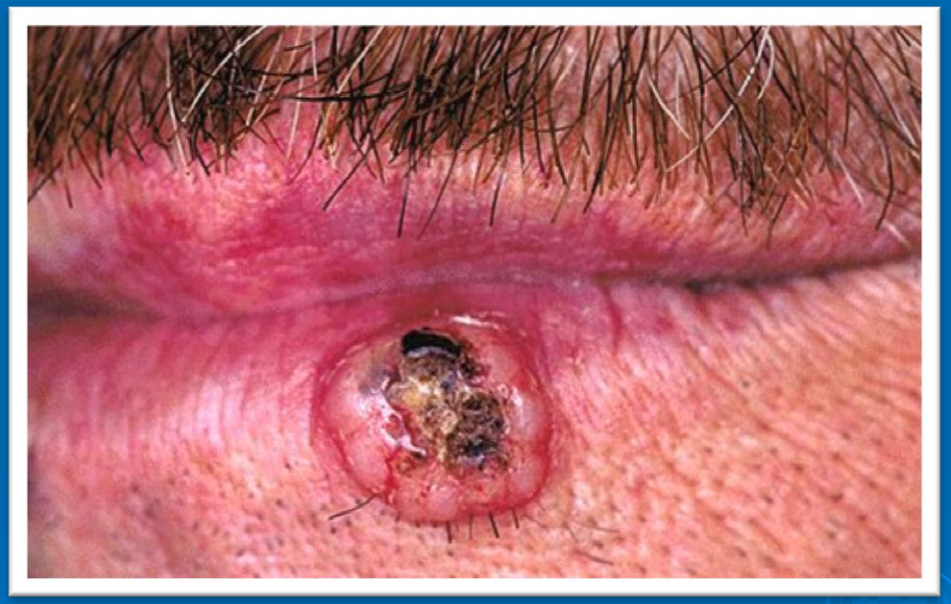
Squamous cell carcinoma





Squamous cell carcinoma



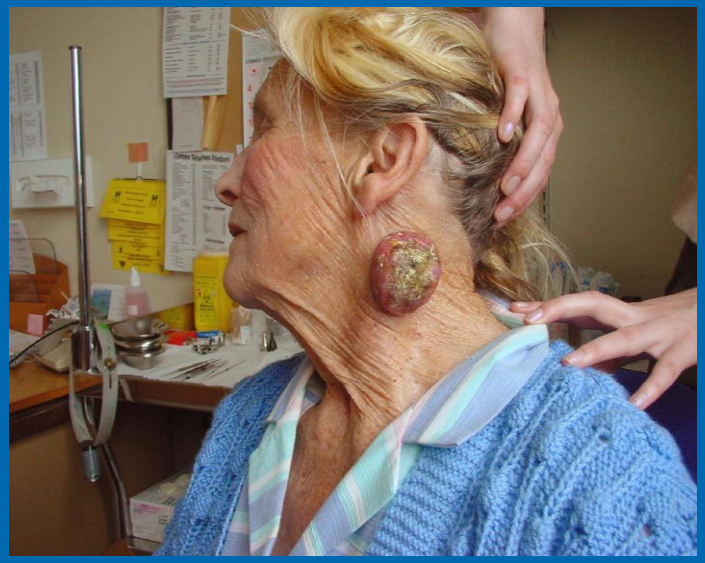


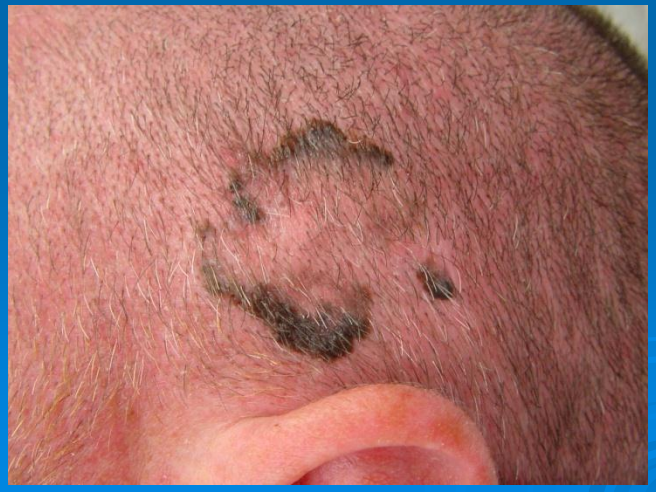
Poor prognostic factors

- Large size >20mm
- Thick or deeply invasive lesion (>4-5mm)
- Incomplete excision
- Recurrent setting
- High grade or desmoplastic growth
- Presence of perineural invasion
- Presence of lymphovascular invasion
- Located near the parotid gland (eg ear, temple, forehead or anterior scalp)
- Immunosuppressed state (eg transplant recipient or haematological malignancy)
- Rapid growth

Veness MJ (2008) Time to rethink TNM staging in cutaneous SCC. Lancet 9: 702-3

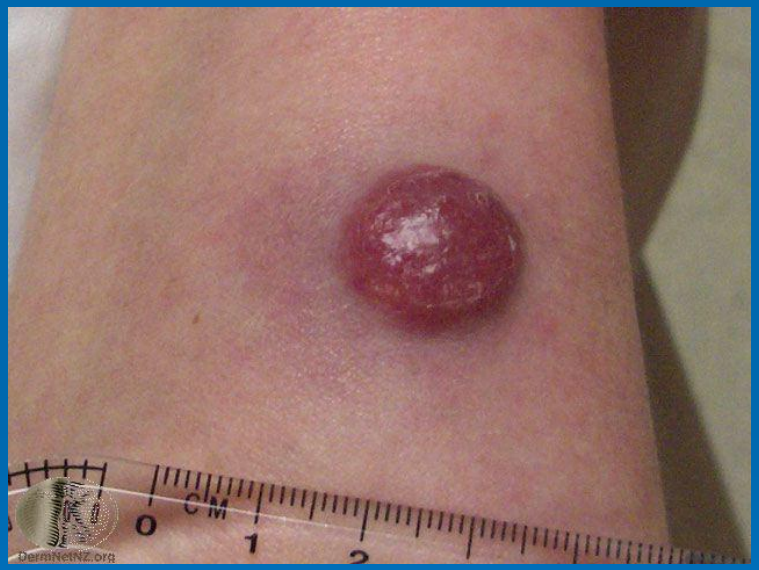
Melanoma





- Unpredictable
- NZ has highest rate in world
- Solar damage
- Subtypes
  - Nodular
  - Superficial spreading
  - Hutchison's Freckle
  - Lentigo Maligna
  - Acral
- Prognostic factors
  - Breslow depth
  - Ulceration
  - Nodal status
- Sentinel Node biopsy

Merkel Cell Carcinoma



- Tumor of presumed mechanoreceptor origin arising in dermis
- Poorly differentiated histology
- High rate of recurrence and lymph node metastasis requires excisional surgery with adjuvant radiation and treatment of lymphatic drainage in most cases
- solitary erythematous to deep purple plaque or nodule of up to several centimeters in size

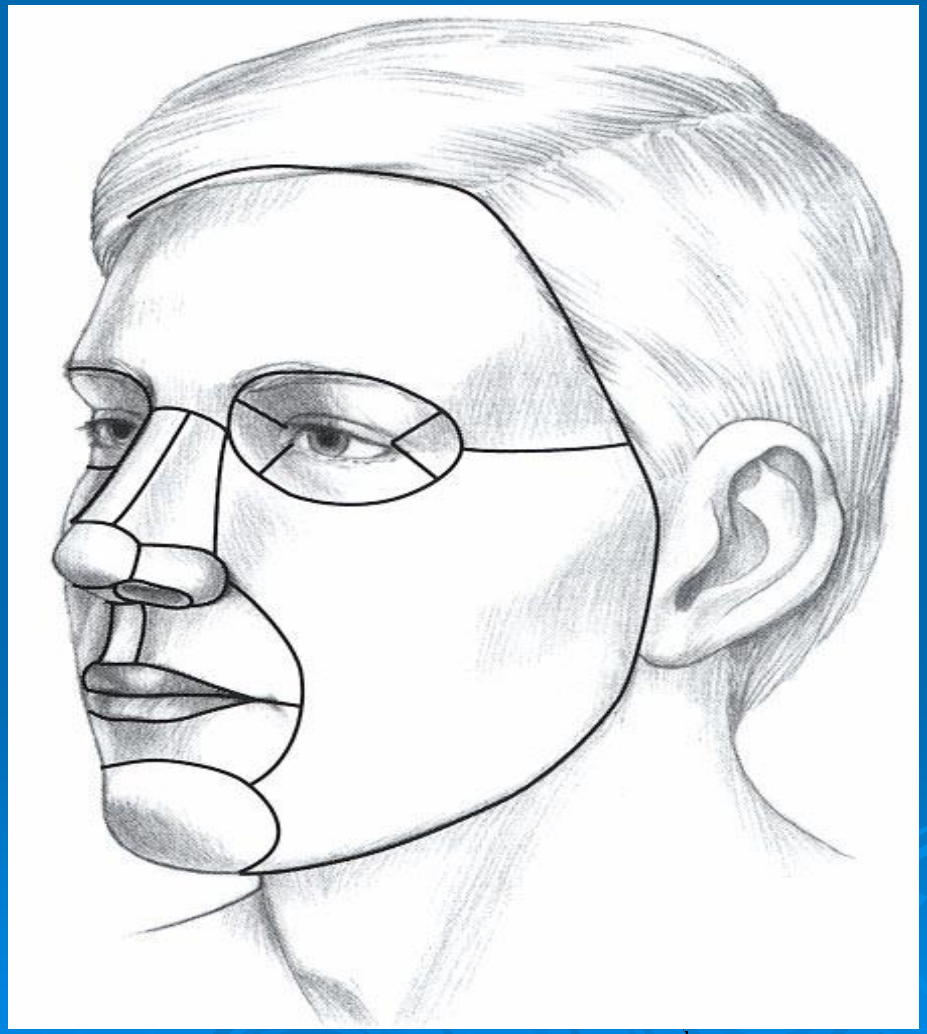
ASSESSMENT OF A LESION

- Site
- Size of lesion
- Condition of skin
- Age patient
- Previous surgery/XRT
- Surgical expertise/ availability of operating equipment
- Patients choice

EXCISION PRINCIPLES

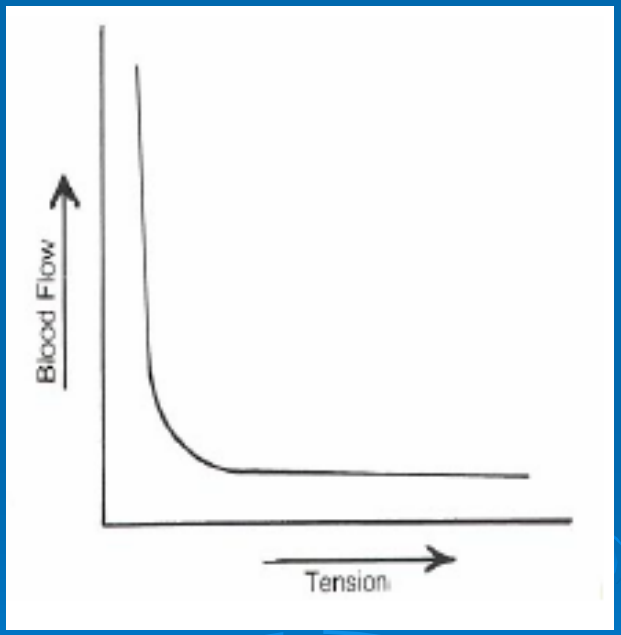
- Subunits
- Primary pathology dependent
  - Melanoma > SCC >BCC
- Margins -3mm or 4mm (non melanoma)

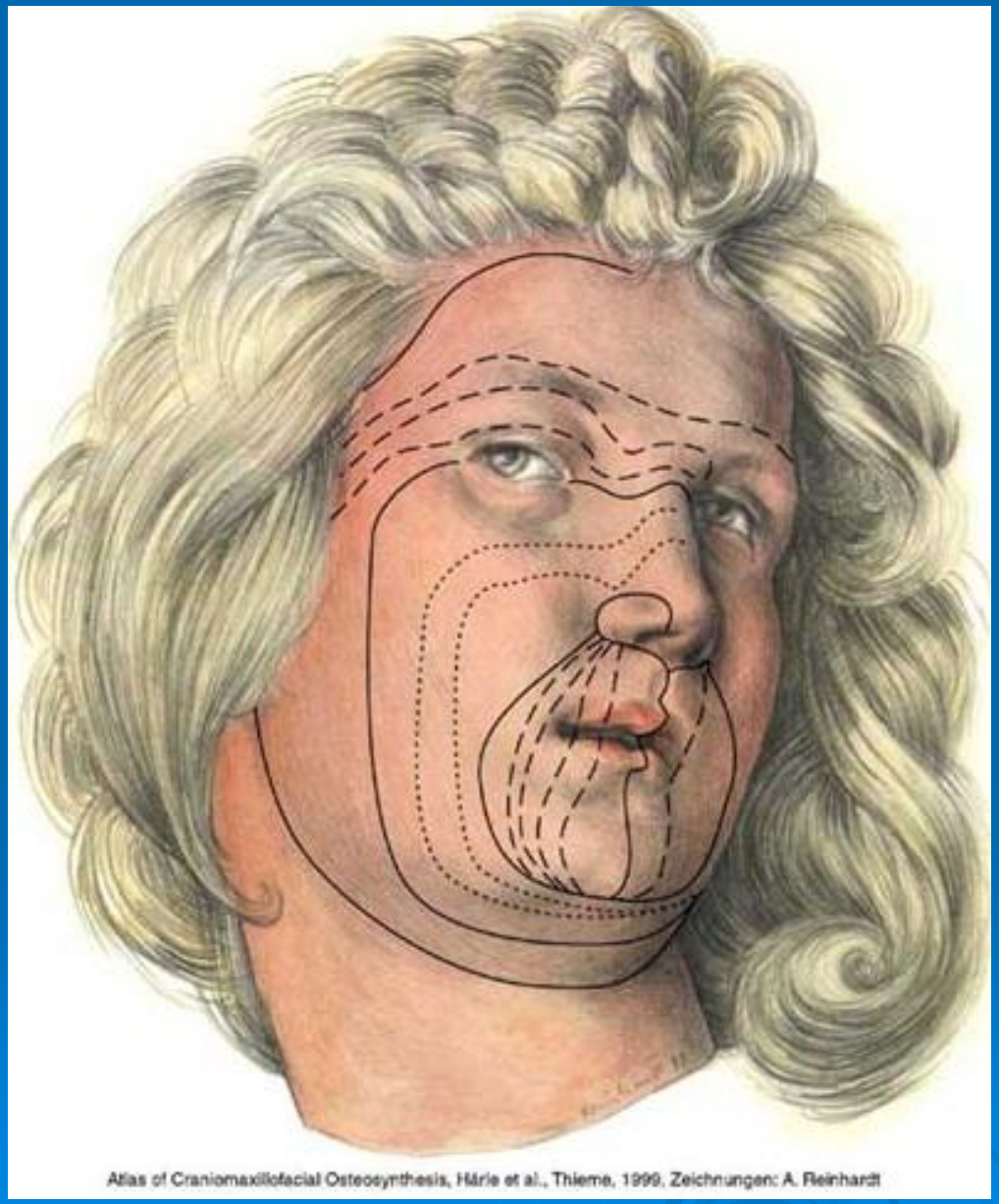
Facial Aesthetic Units



RECONSTRUCTIVE PRINCIPLES

- Like with like
- Colour match
- No tension
- Good vascularity
- Not previously irradiated
- Local vs distal





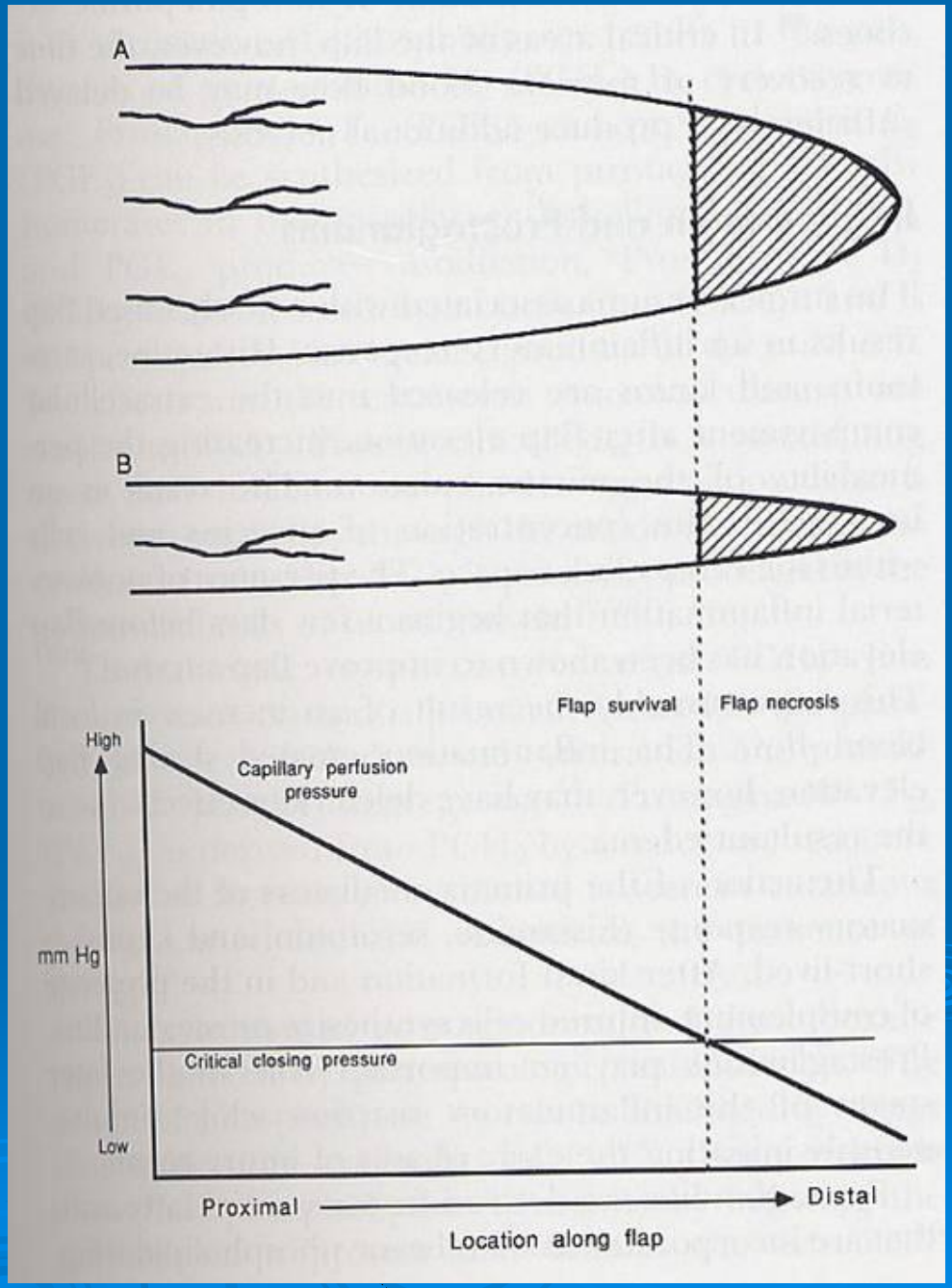
Relaxed skin tension lines

(Borges and Alexander)

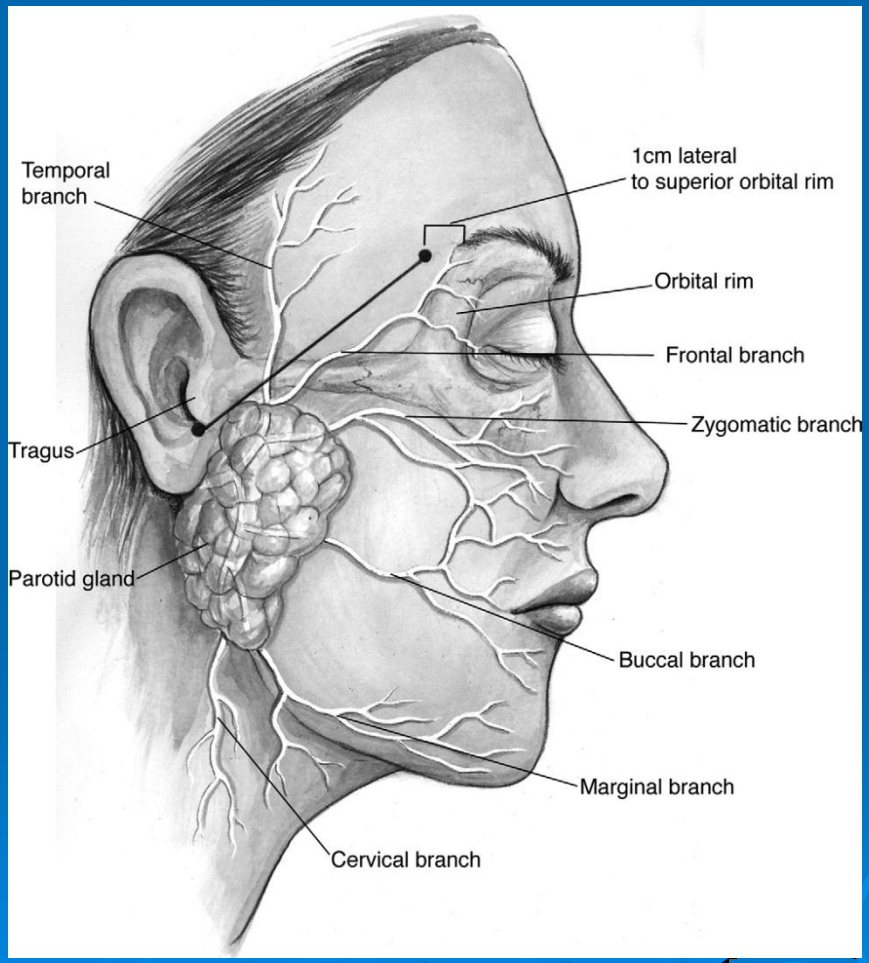
- Skin tension lines followed during elective incision
  - Offers best cosmetic result
  - Most narrow and strongest scar line
- Parallel to dermal collagen bundles
- Perpendicular to muscle contraction

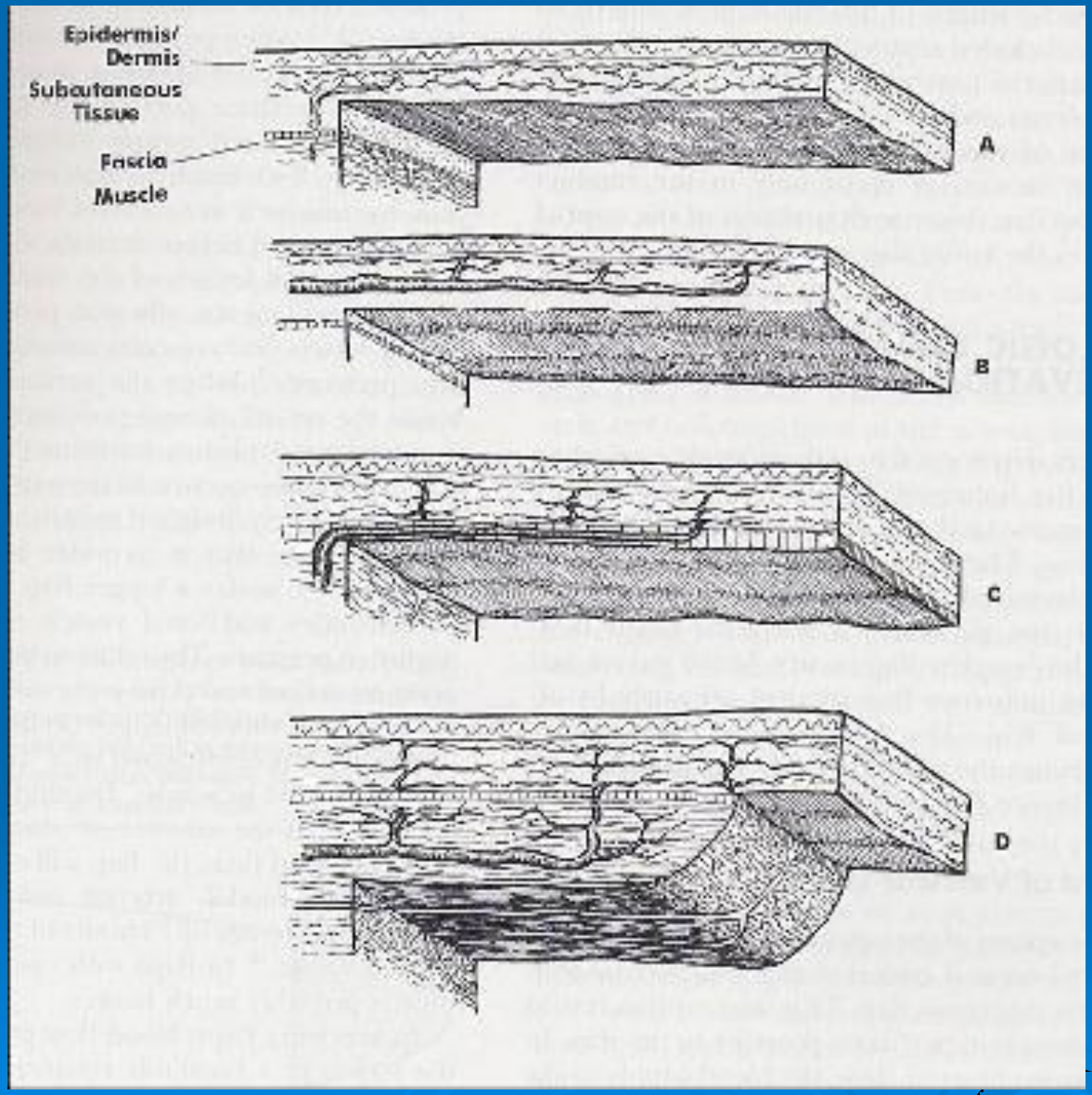
CRITICAL CLOSING PRESSURE

Length:Width ~3-4:1



Facial Nerve





Random pattern

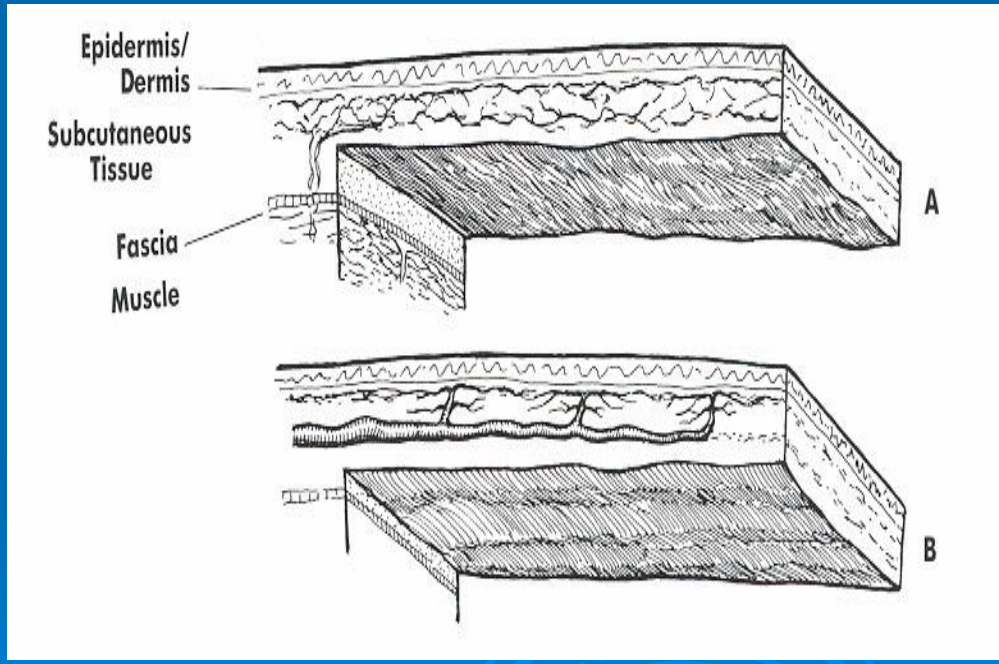
Axial cutaneous

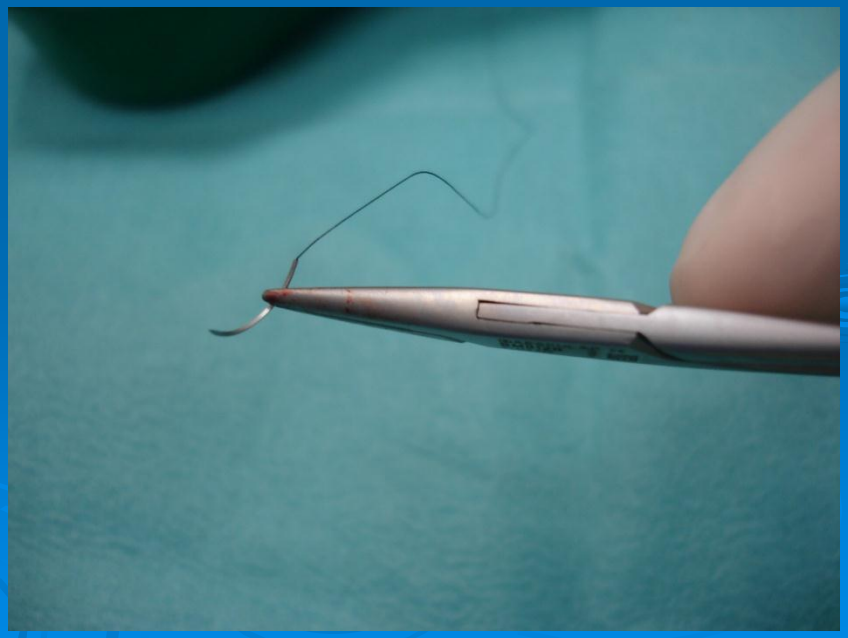
Fasciocutaneous

Myocutaneous

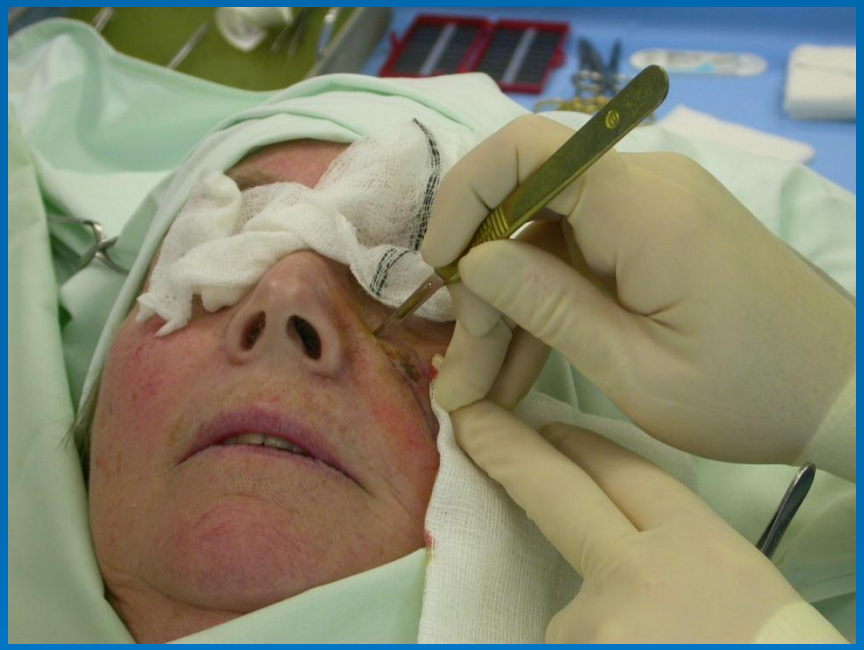
Local flaps - classification

- Blood supply
  - Random
    - Subdermal plexus
    - unpredictable
  - axial
- Tissue movement
  - rotation
  - advancement
  - transposition

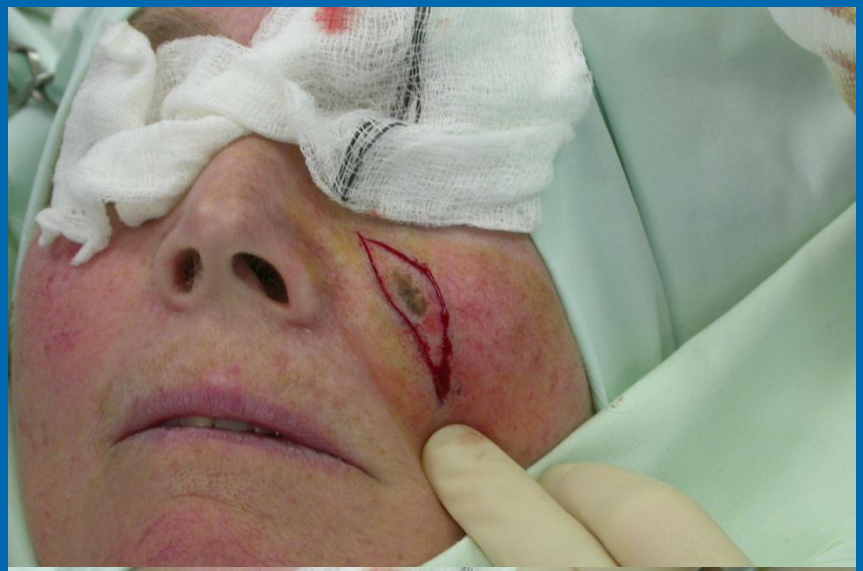


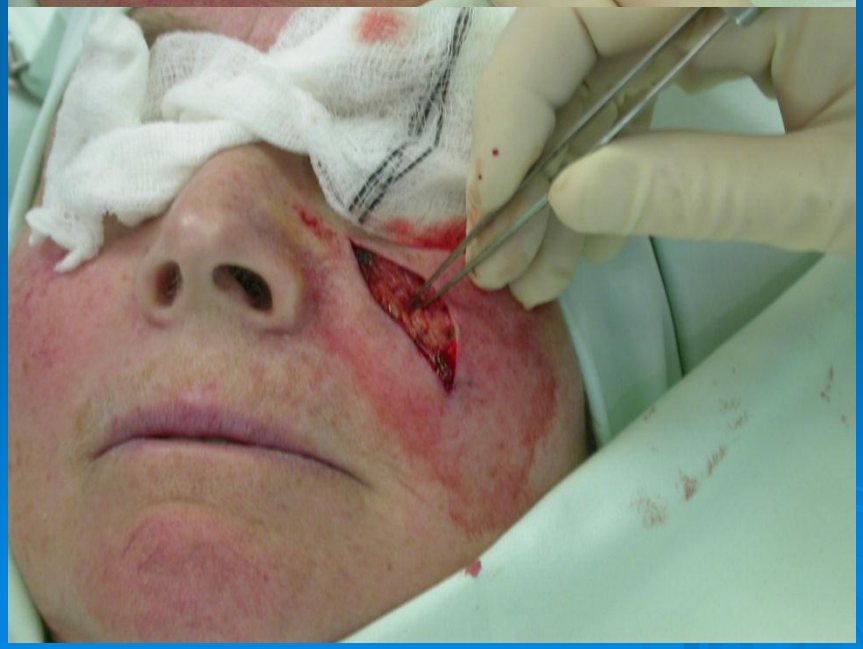


SURGICAL TECHNIQUE

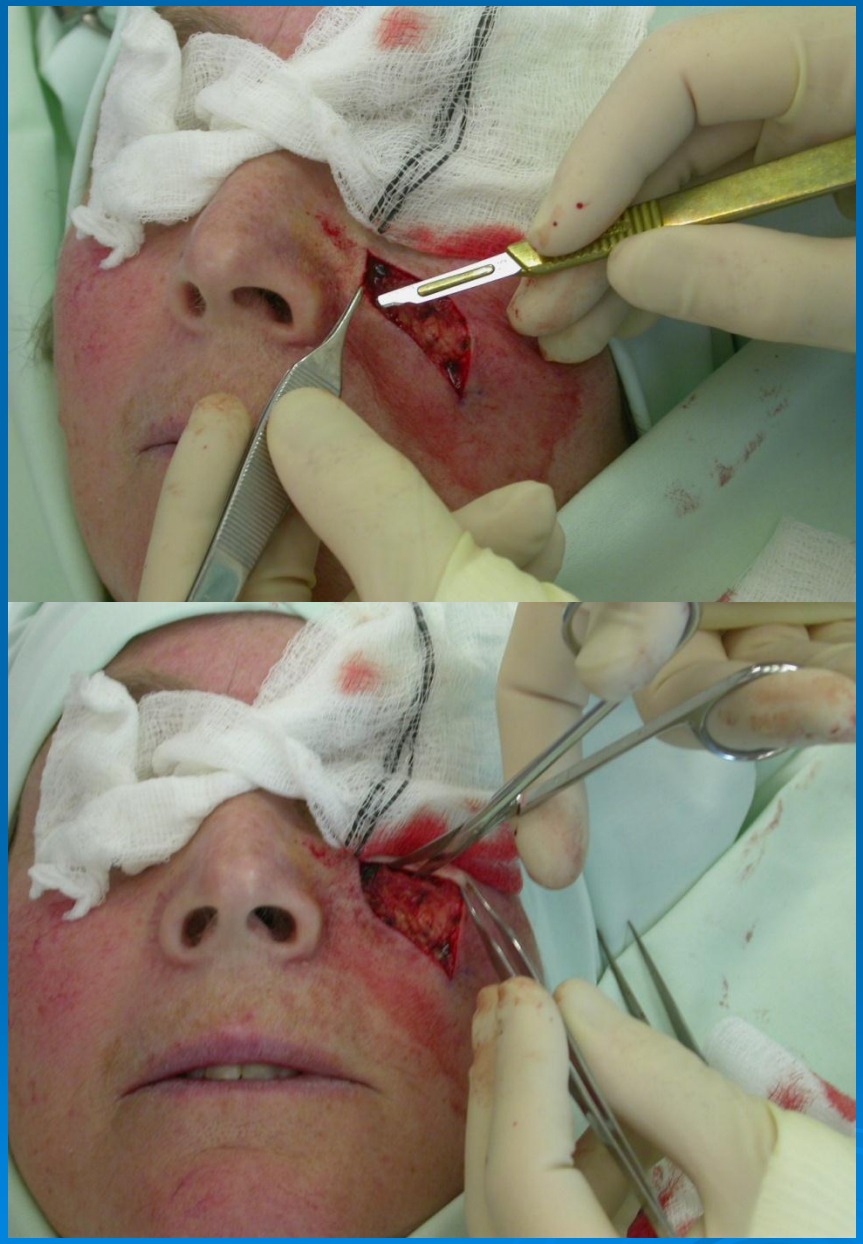


- Scalpel blade at 90^0
- Skin under tension

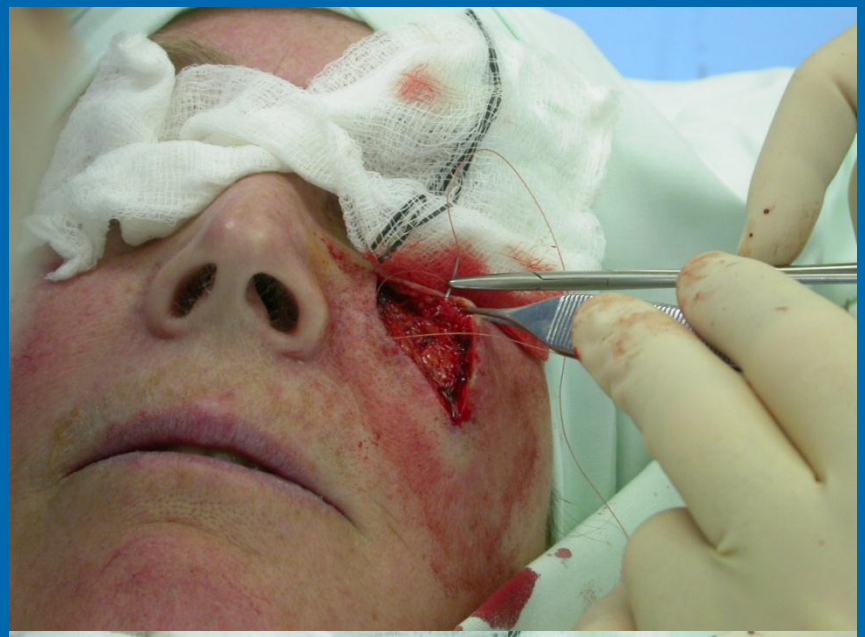


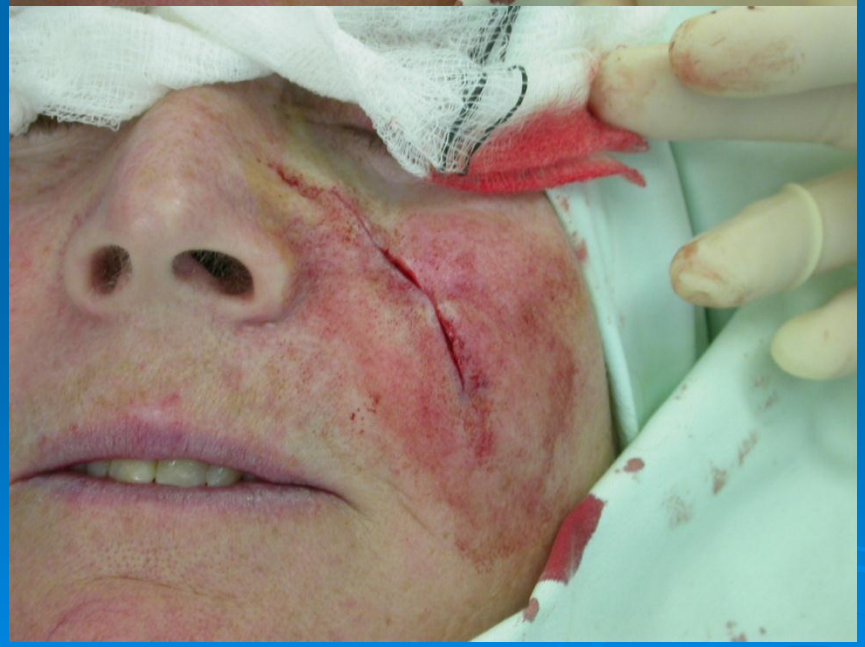


- Excise the lesion
- Use diathermy to get haemostasis.
- This reduces the risk of haematoma, and failure of a full thickness skin graft



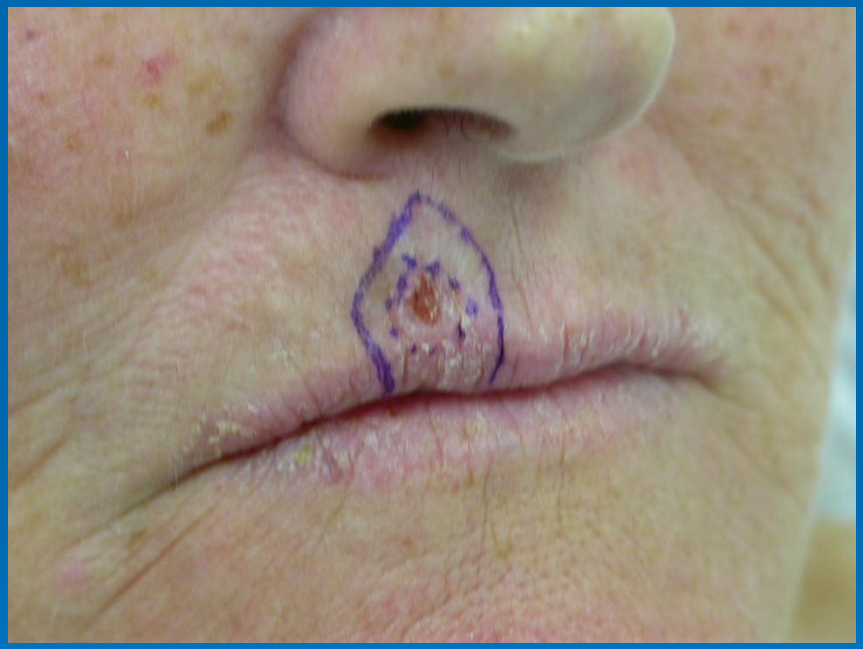
- Undermining the skin edge helps reduce skin tension at the closure



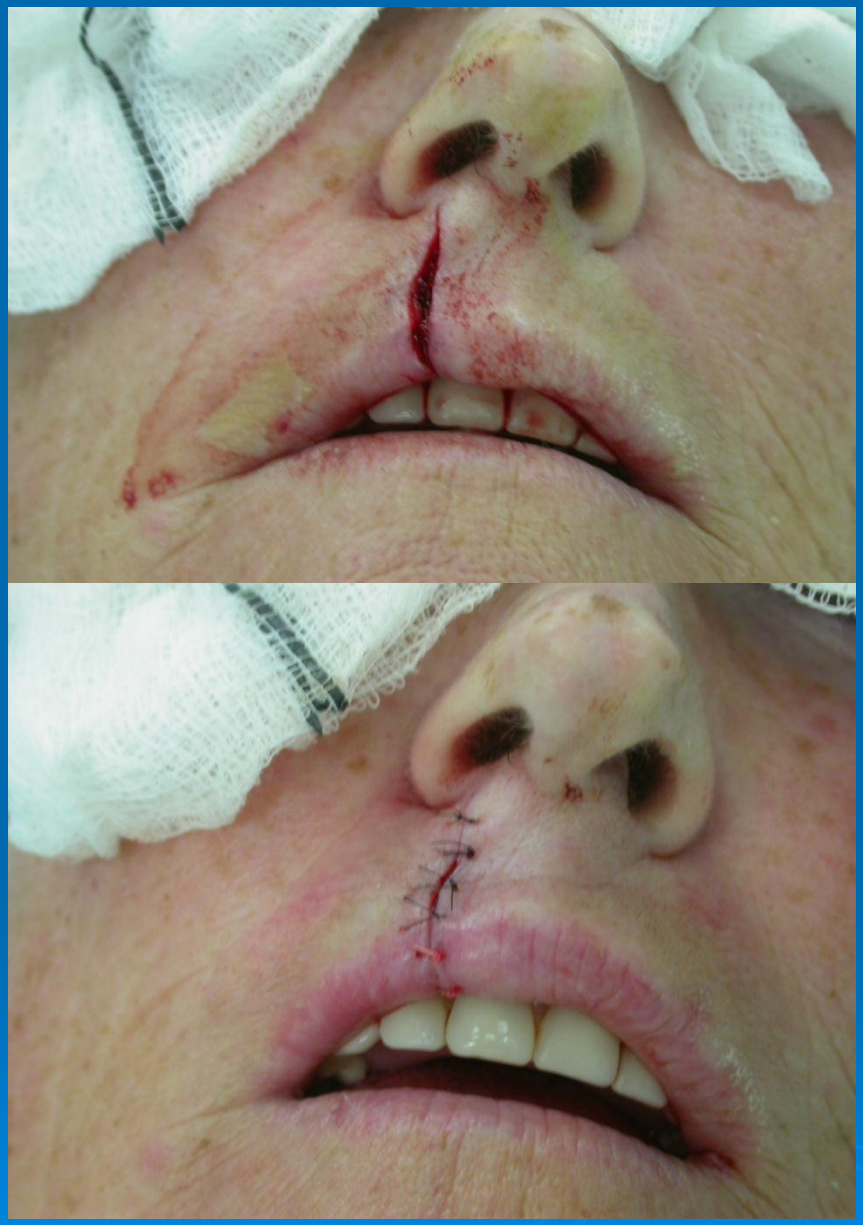


- **Subcutaneous sutures may be used to allow better approximation of the skin edges.**

WEDGE EXCISION LIP



- Lesion marked
- Margin required then marked
- NB- buccal incision is not the same shape as external skin incision

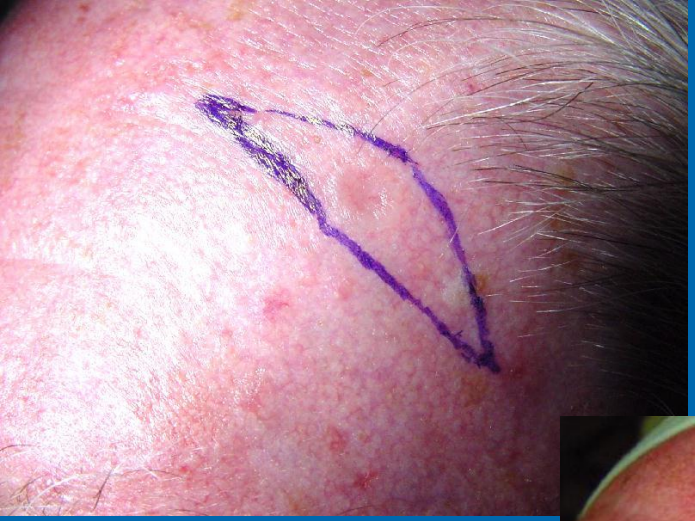


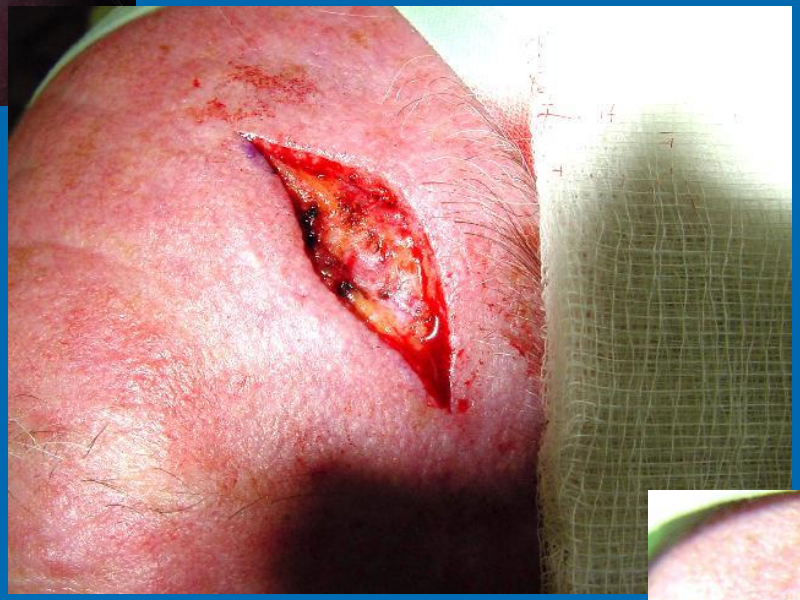
- **Wound closure**
  - 2-3 layers depending on thickness of excision
  - 4-0 undyed vicryl
  - 5-0 or 6-0 nylon to skin
  - Vicryl to buccal mucosa
- **NB – Importance of vermillion border alignment**

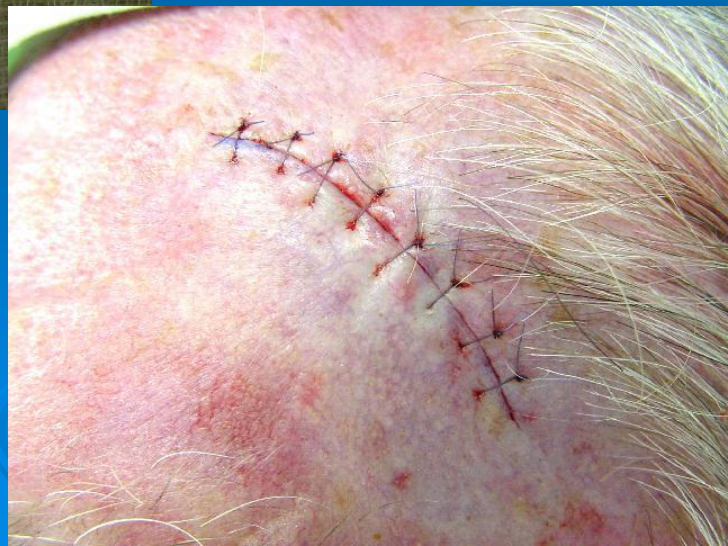
SECONDARY INTENTION

- Pinna
- Medial Canthus

PRIMARY CLOSURE



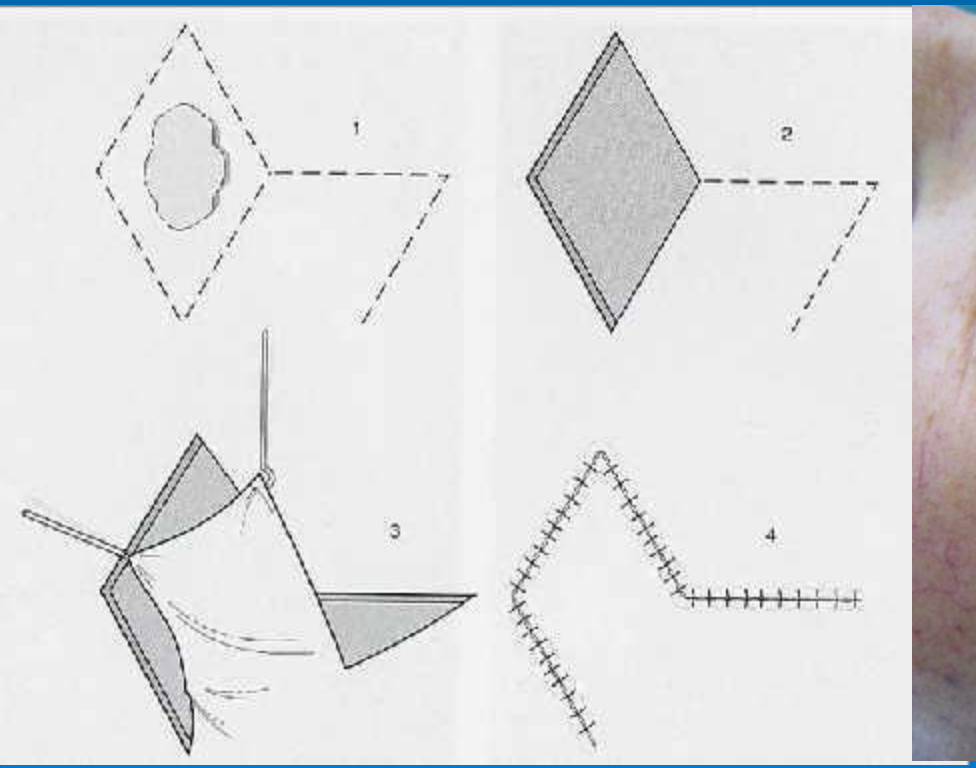


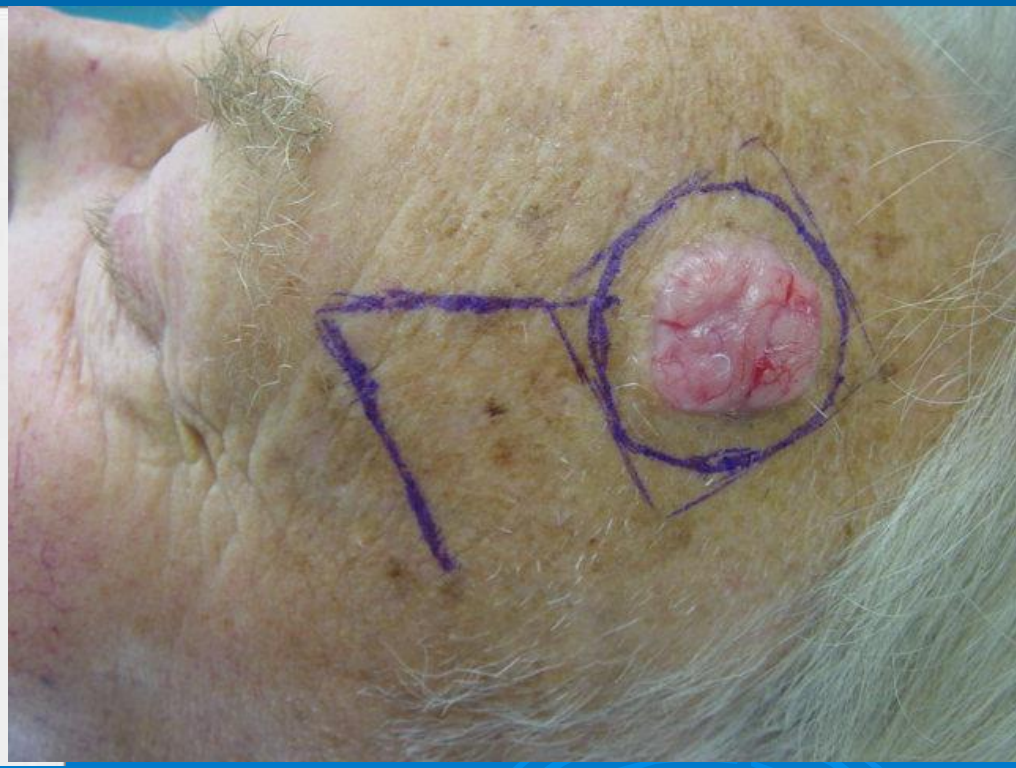


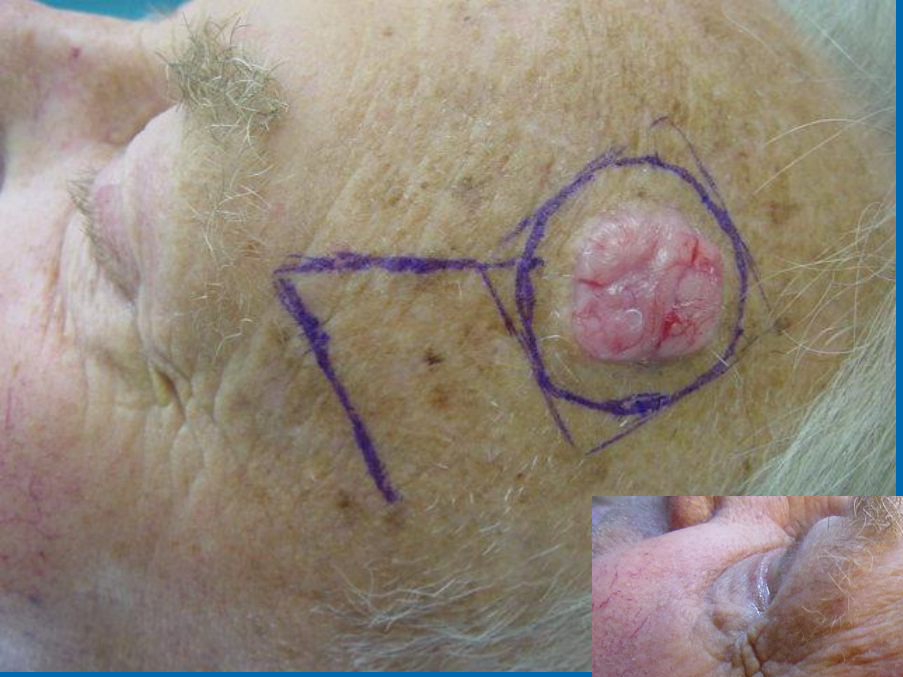
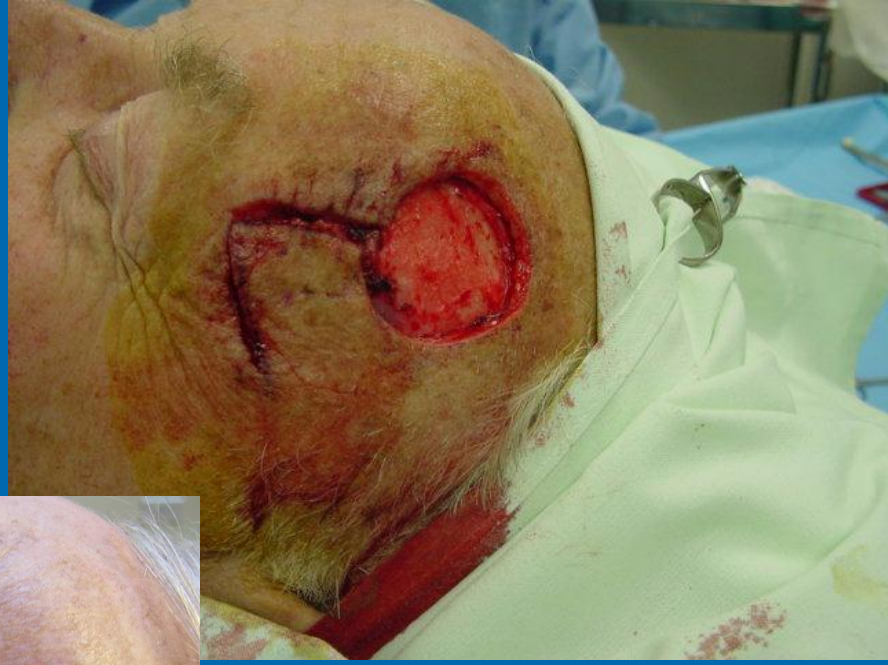
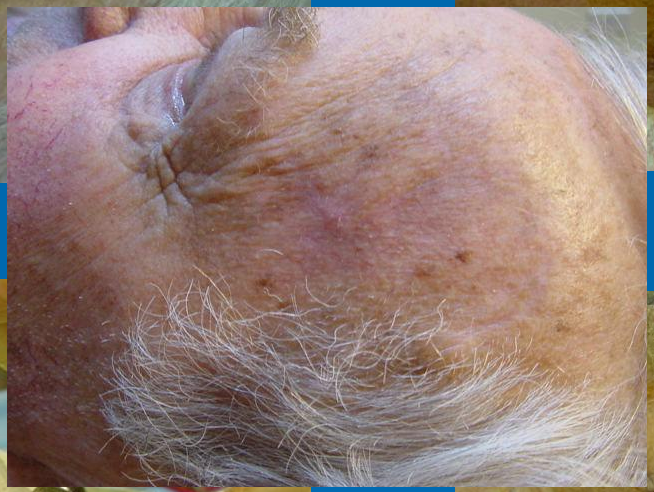
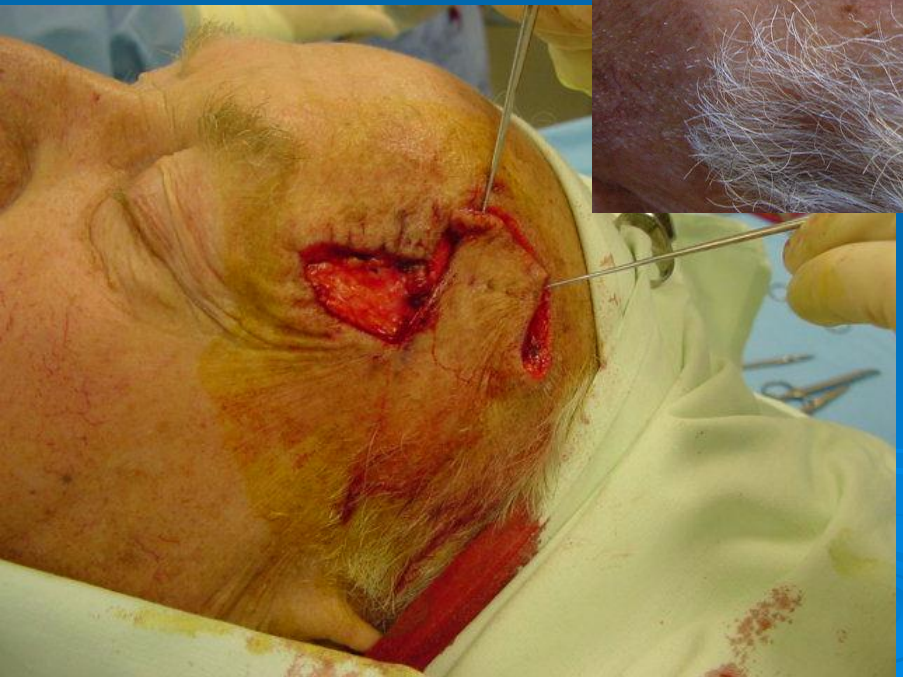
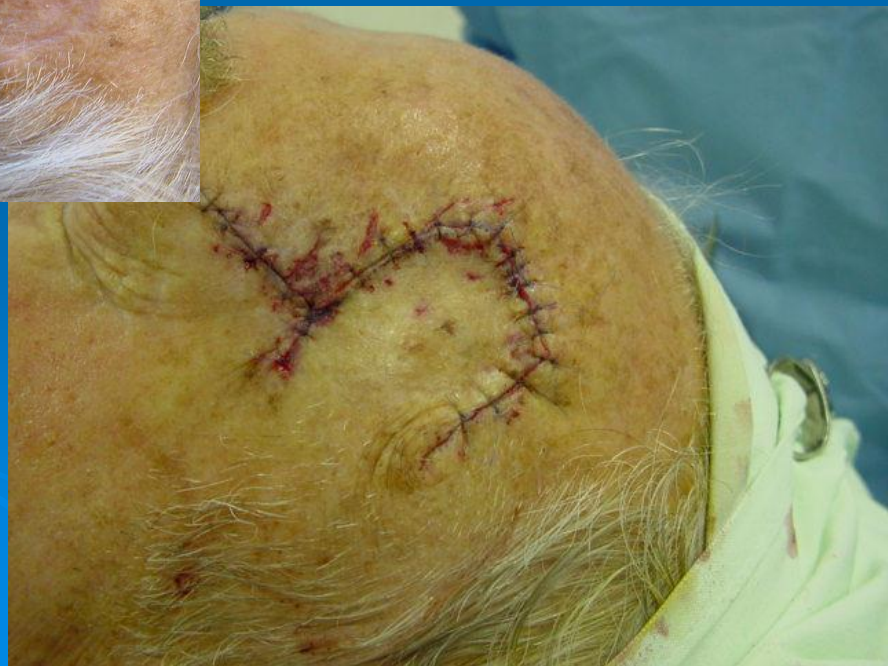
FLAPS

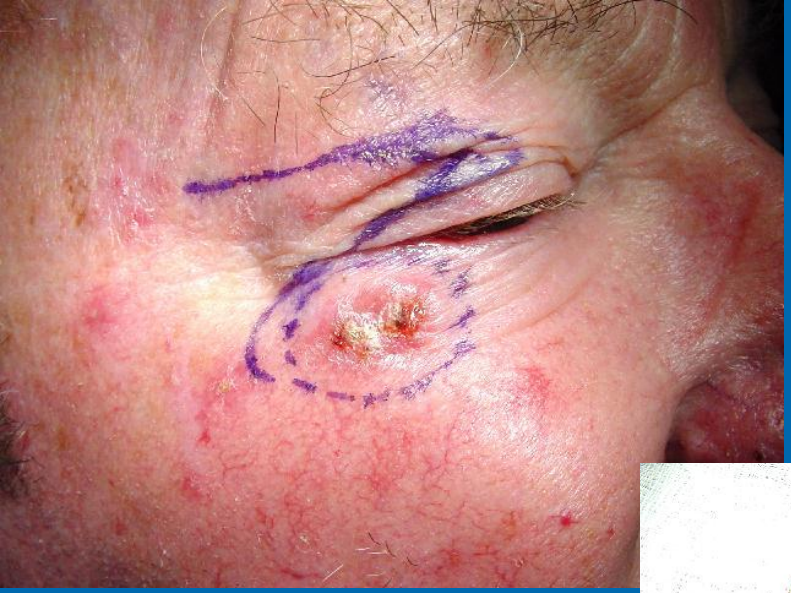
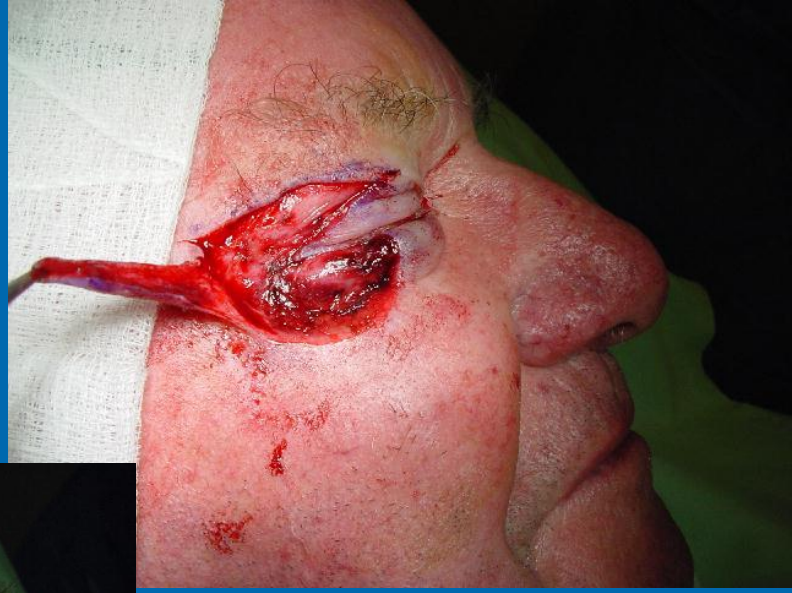
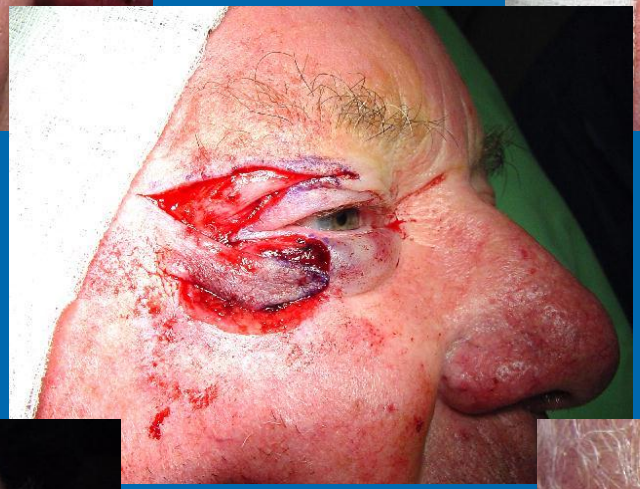
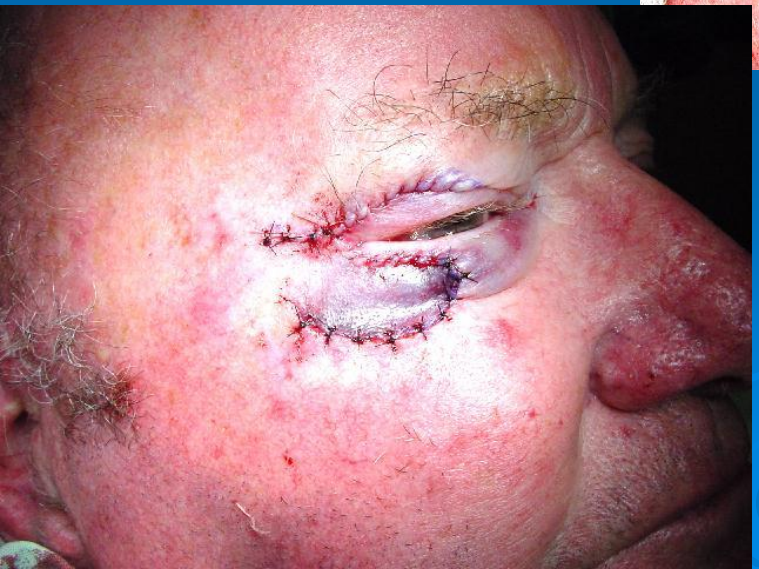
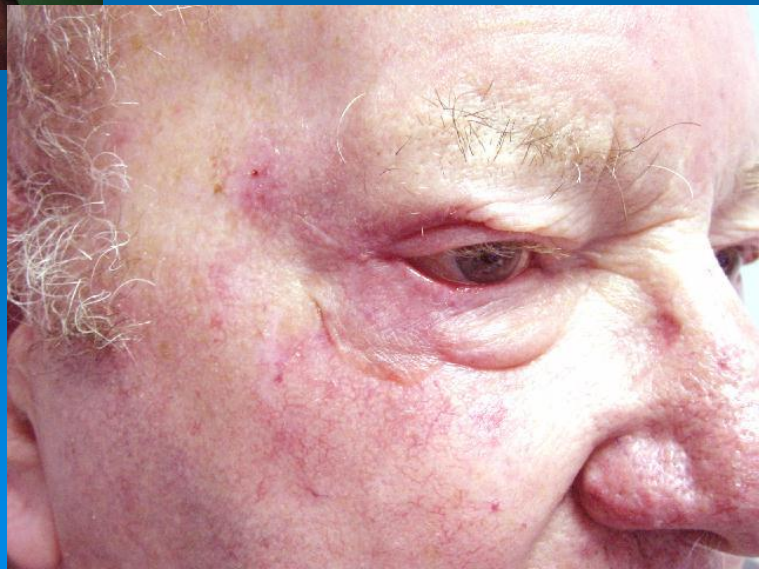
- Transposition
- Bilobe
- Rhomboid
- Advancement
- V-Y
- Hatchett
- Nasal Dorsal

RHOMBOID FLAP





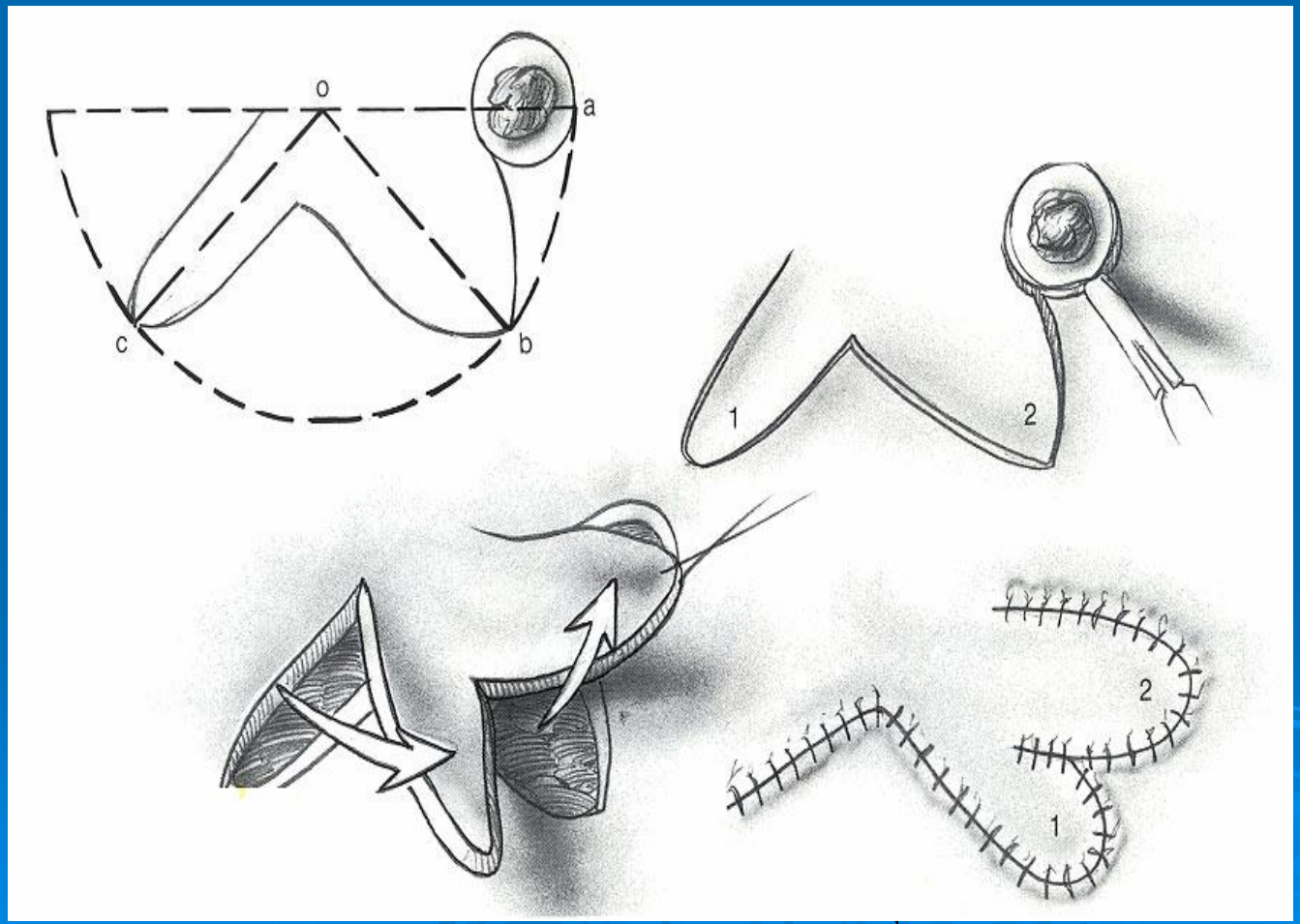






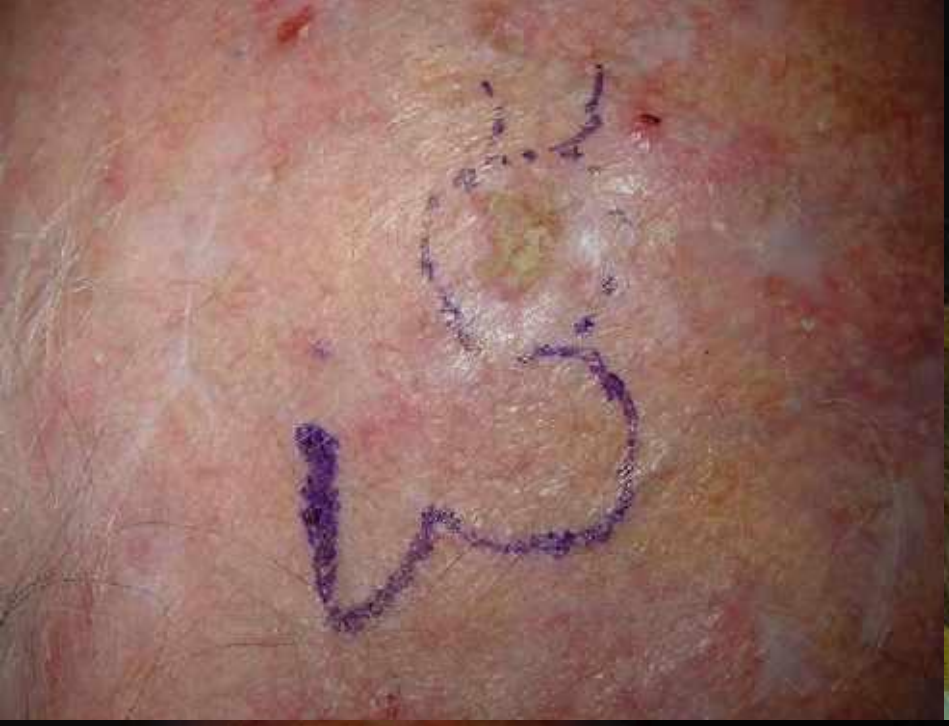
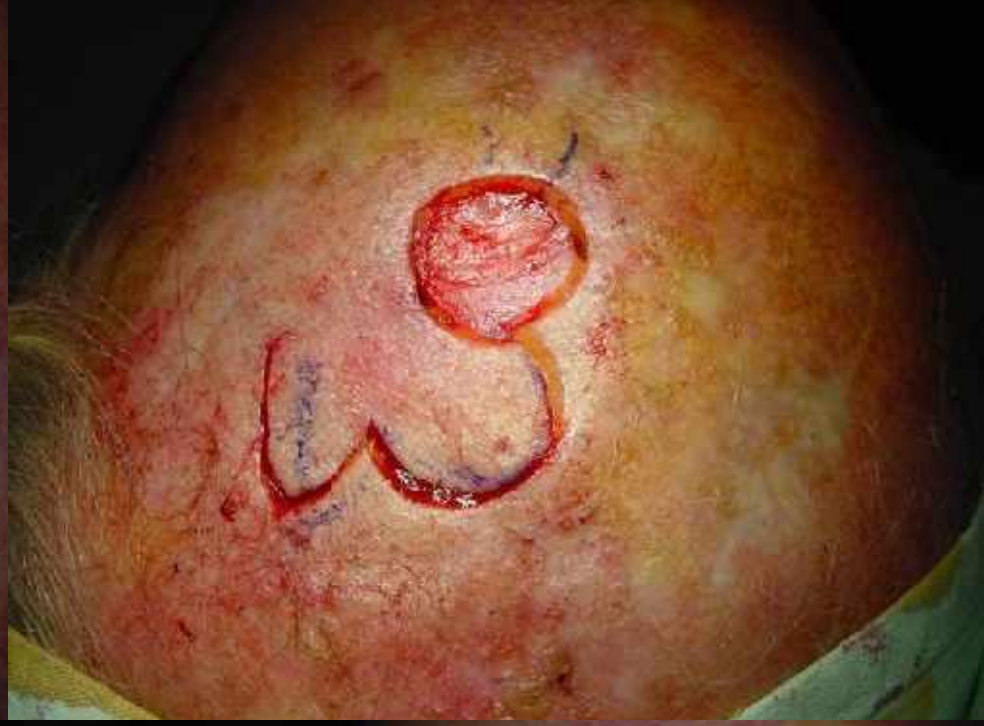
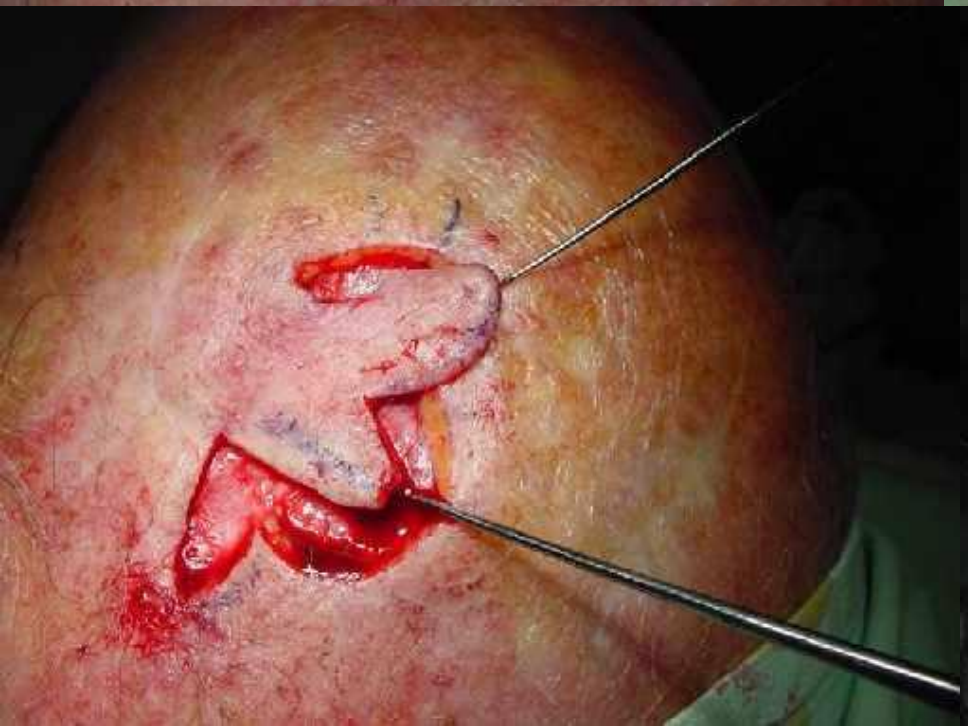
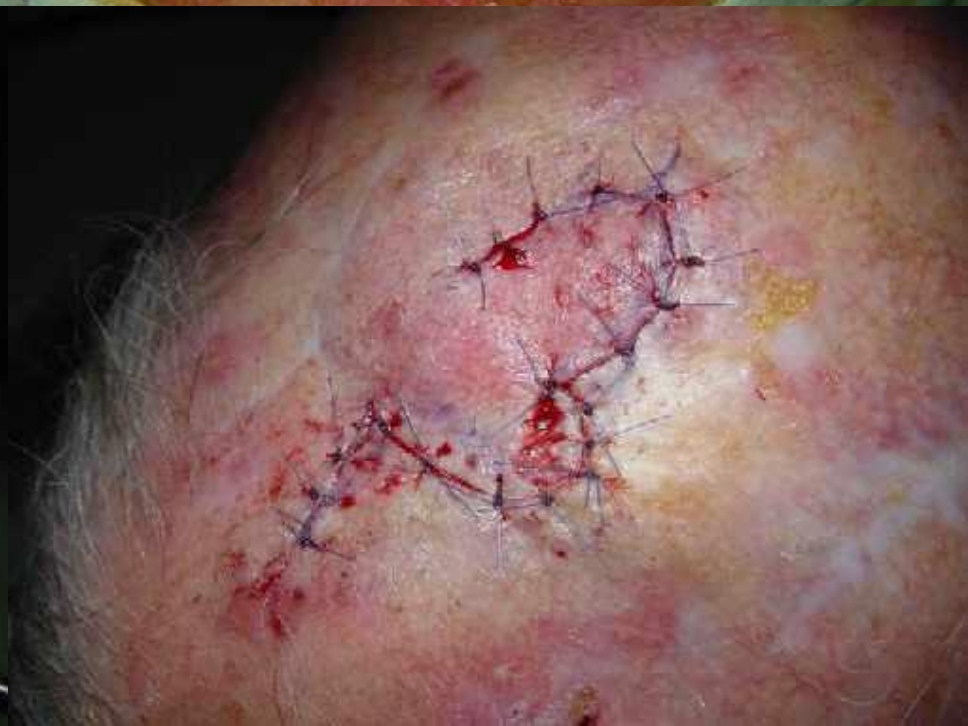






Bilobe Flap

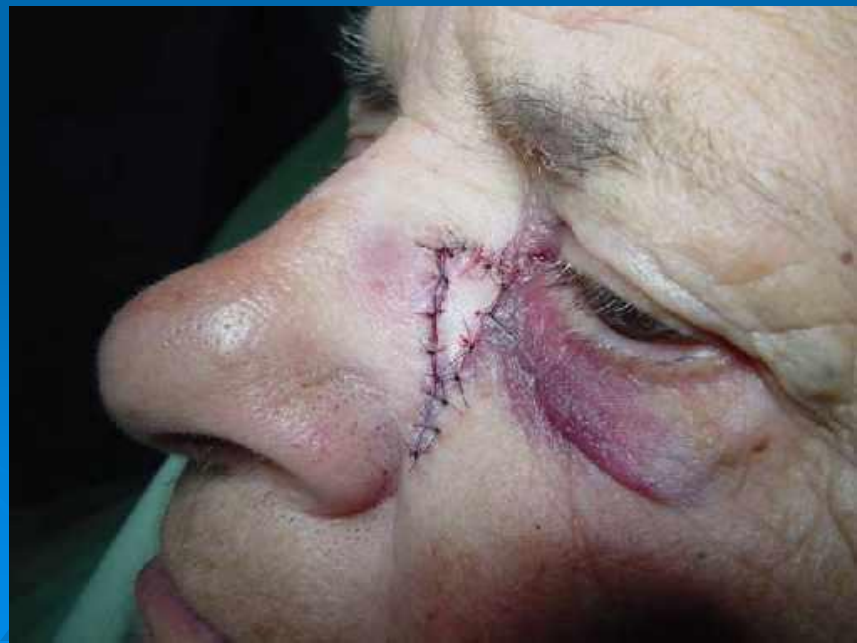
- Double transposition flaps
- Arcs of 90 to 110 degrees preferable
- First lobe same size as defect, second slightly smaller
- Uses - lower third of nose; transfers tension onto dorsum

Bilobe Flap

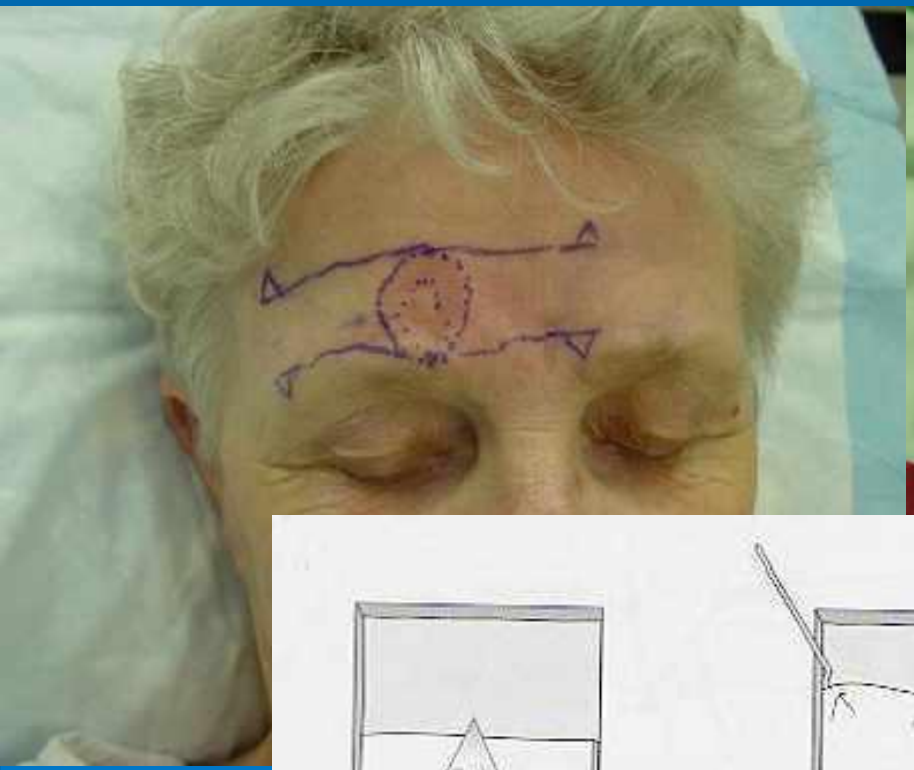


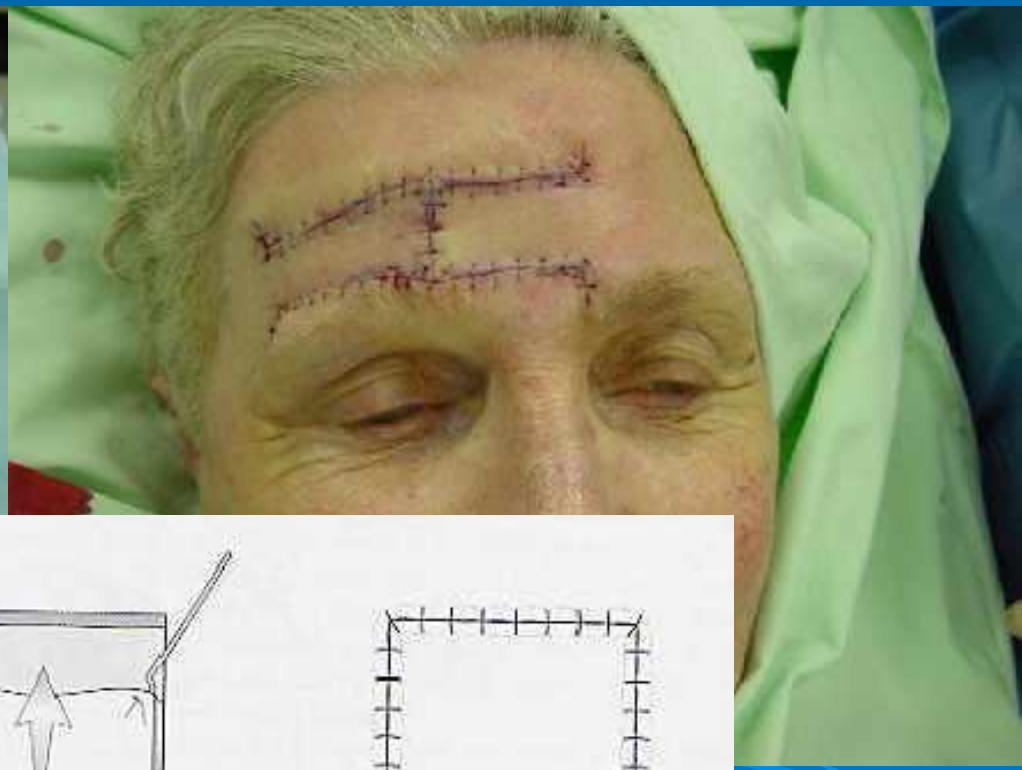





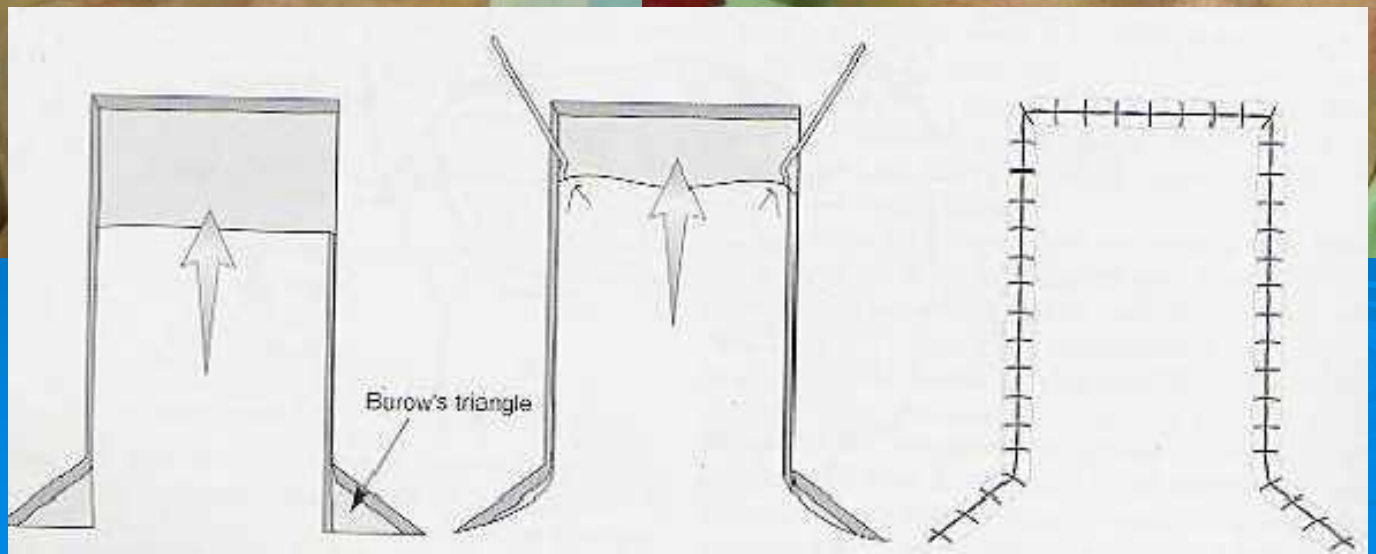
V-Y ADVANCEMENT



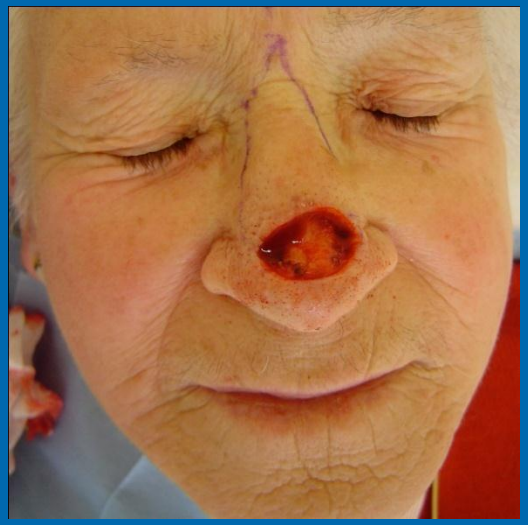
BILATERAL ADVANCEMENT FLAP

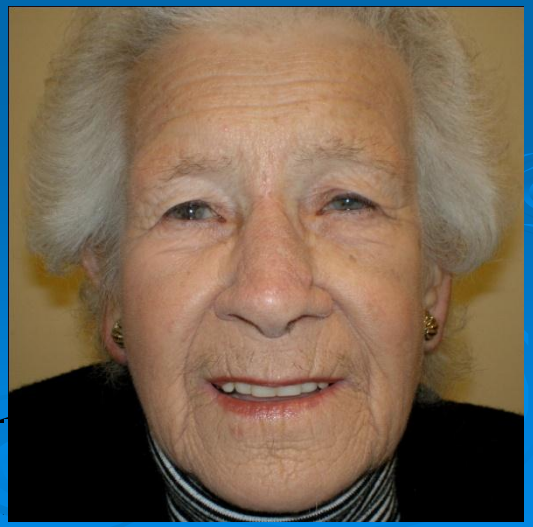


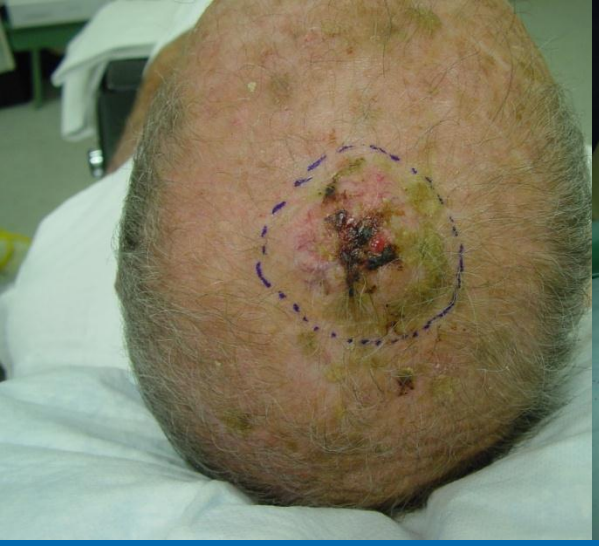
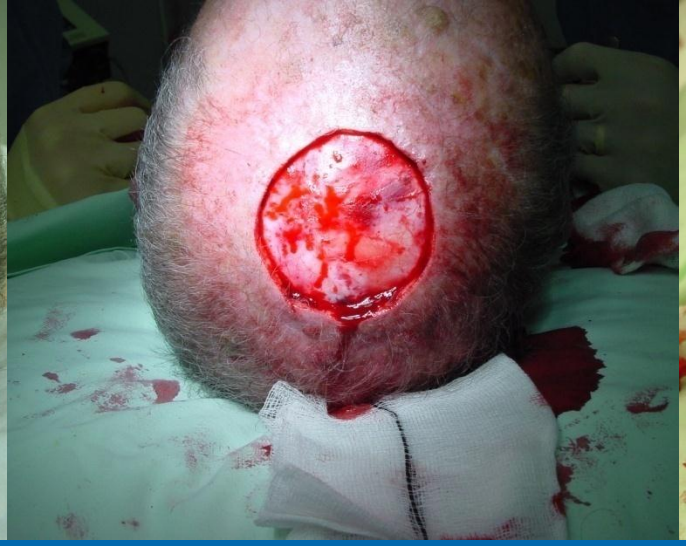
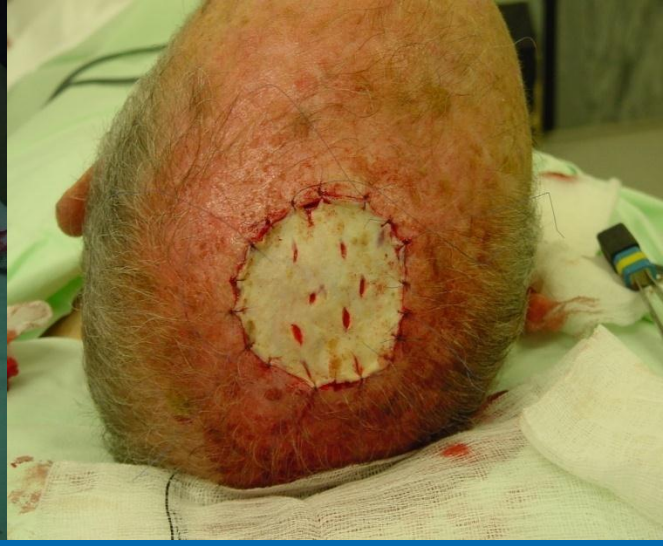




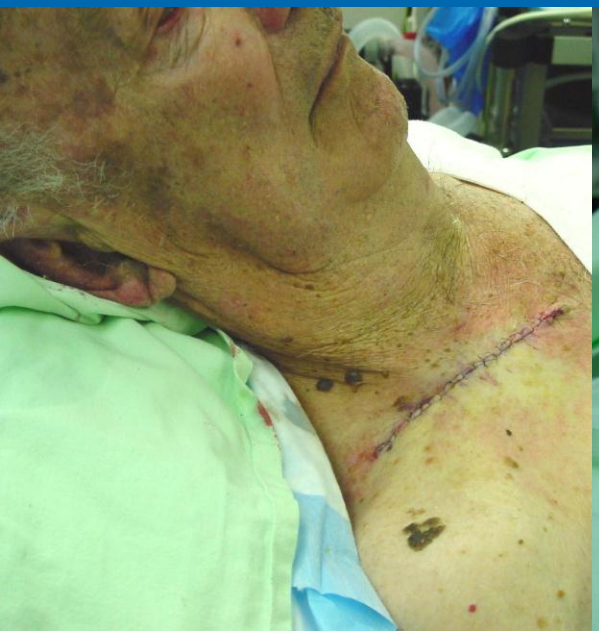
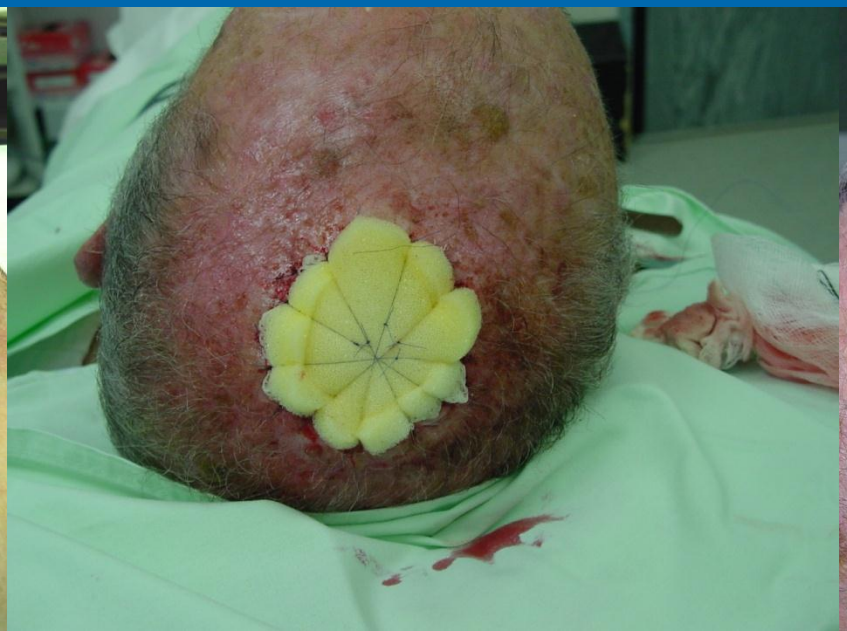
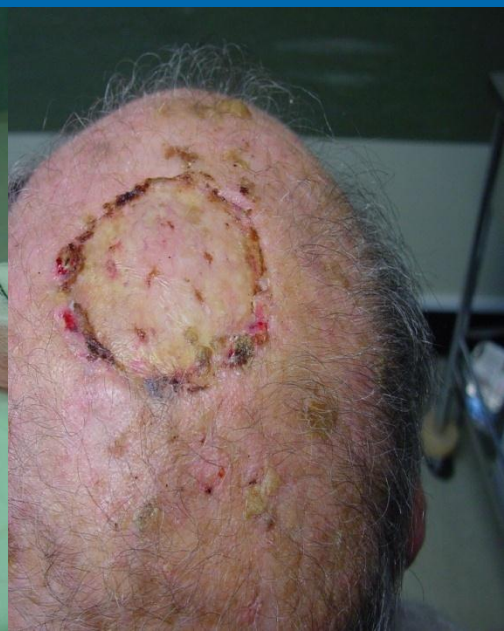
Nasal Dorsal Flap





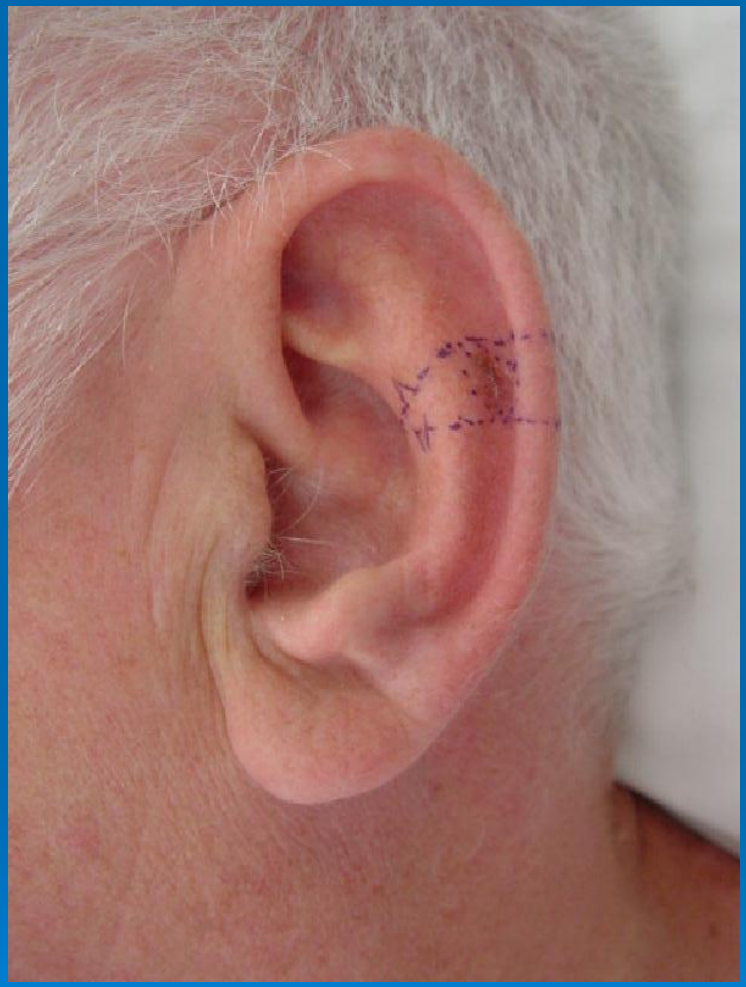




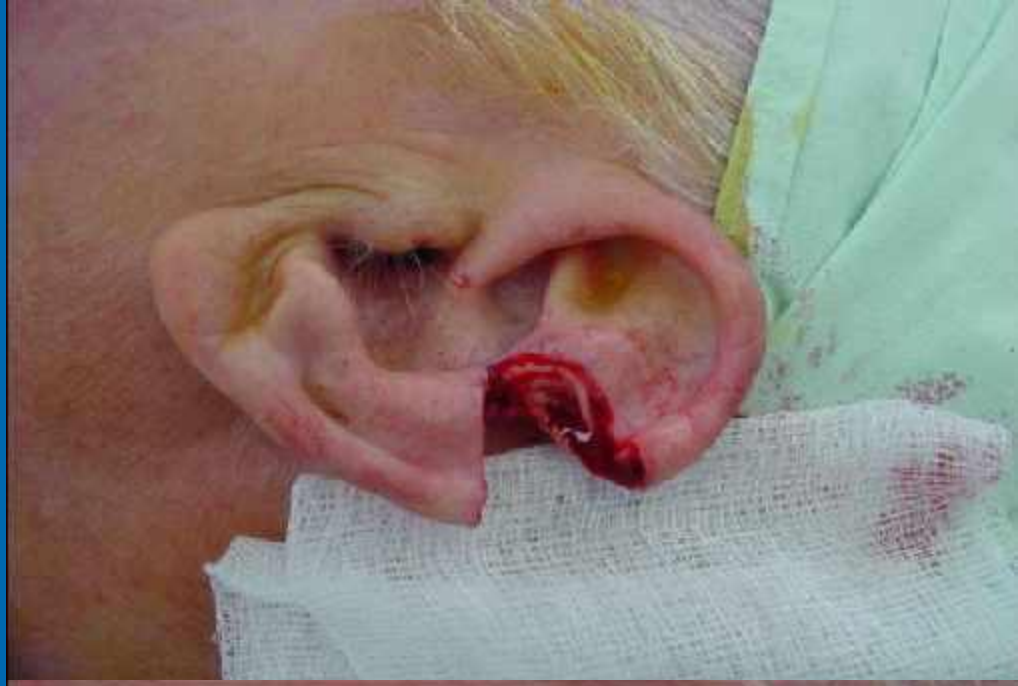
FULL THICKNESS SKIN GRAFT

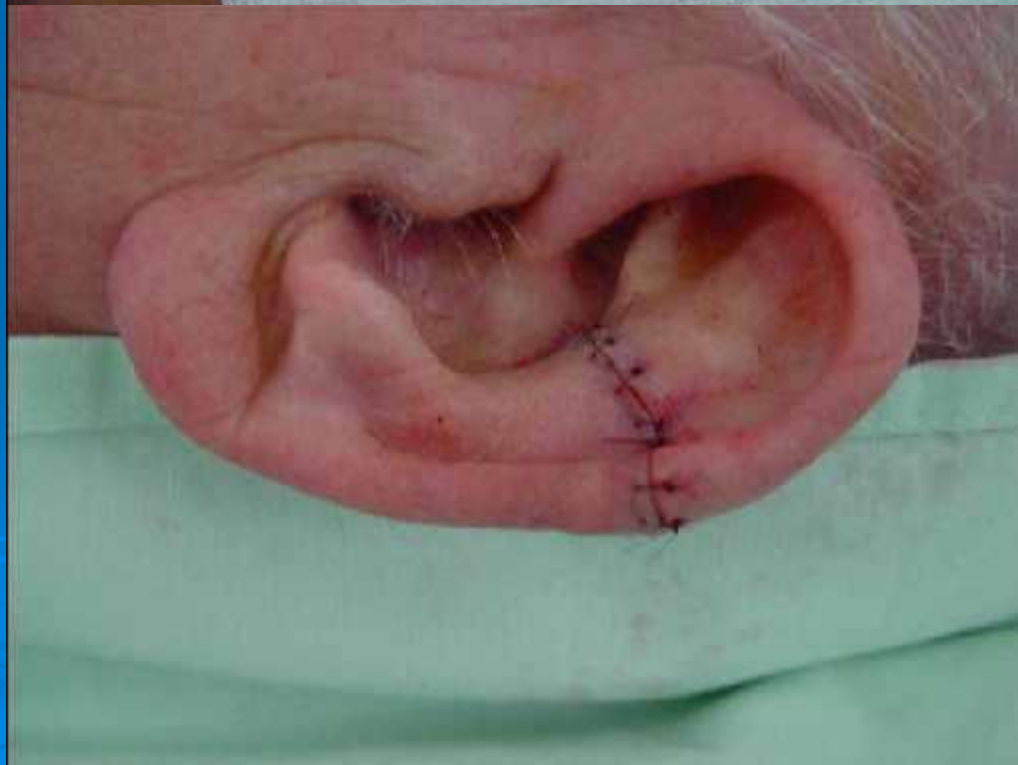




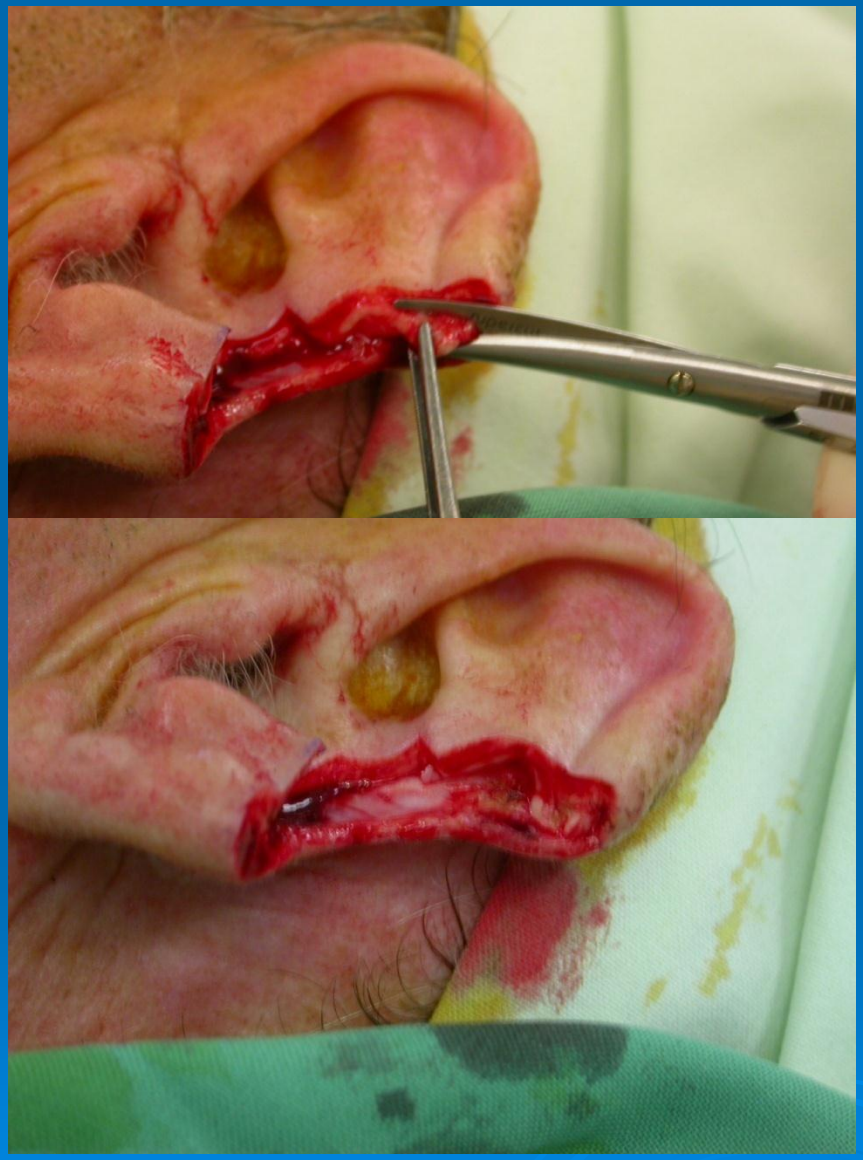
WEDGE EXCISION OF THE PINNA

- Useful technique
- Pinna ends up shorter in height but same shape
- Difference often goes un-noticed

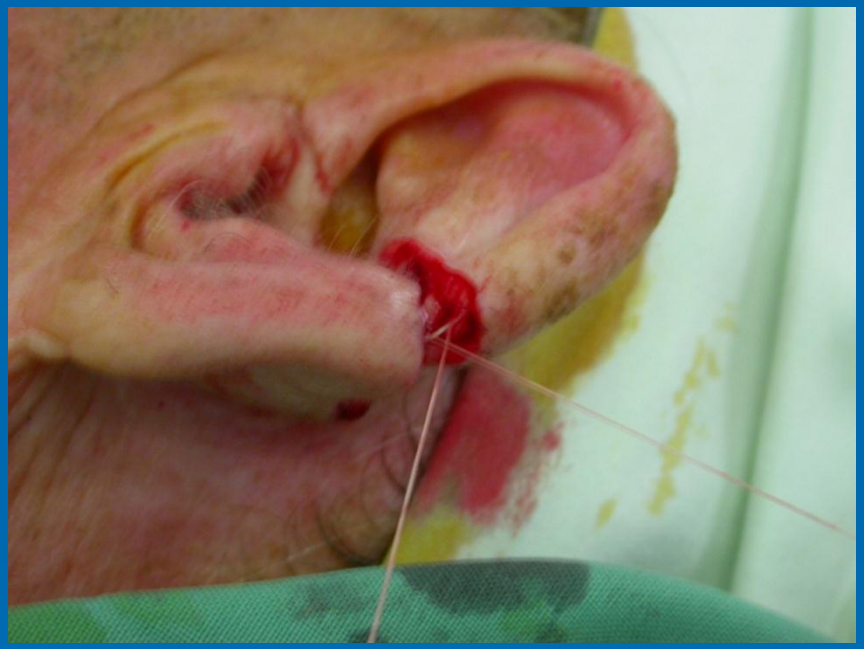






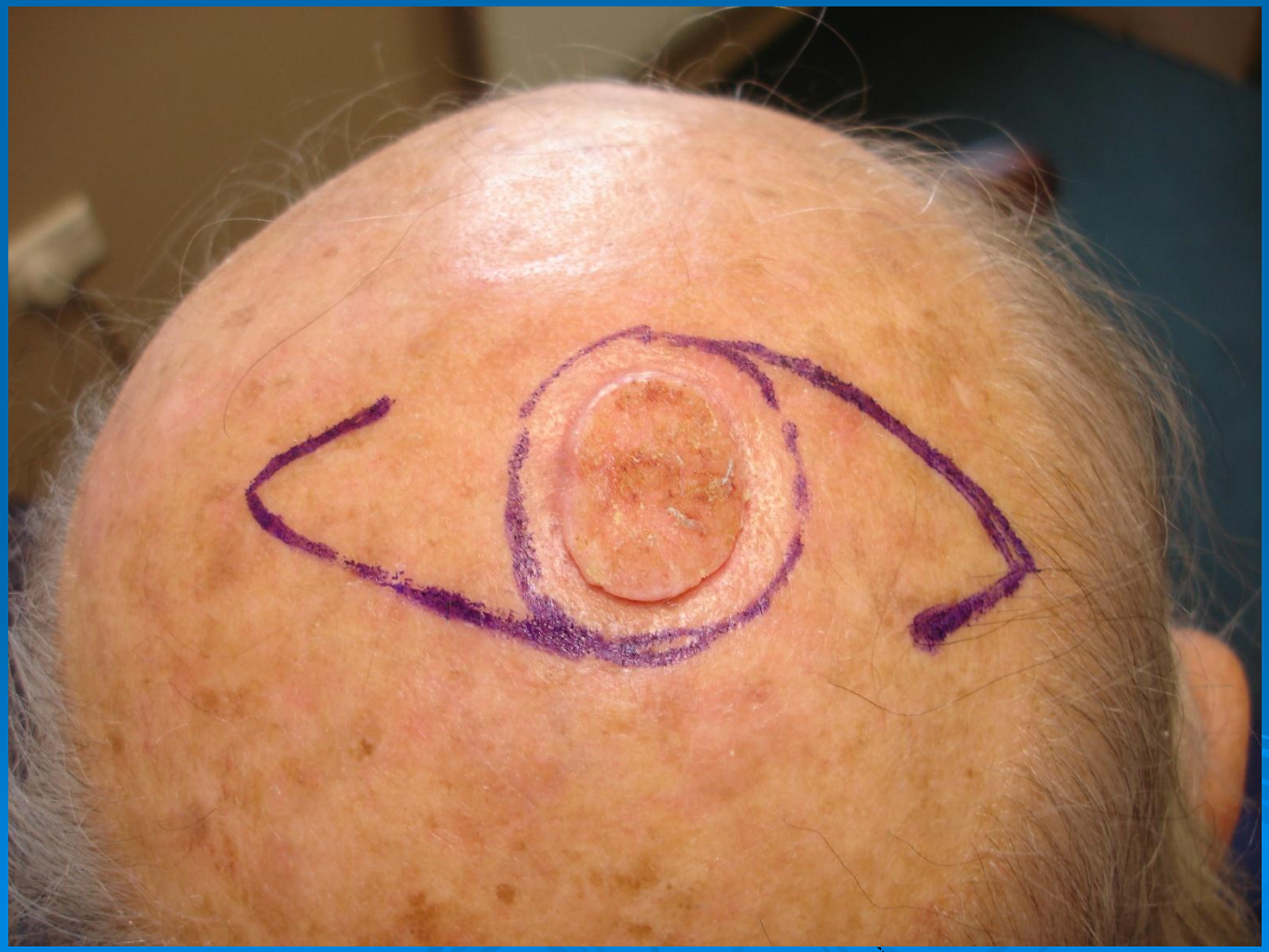


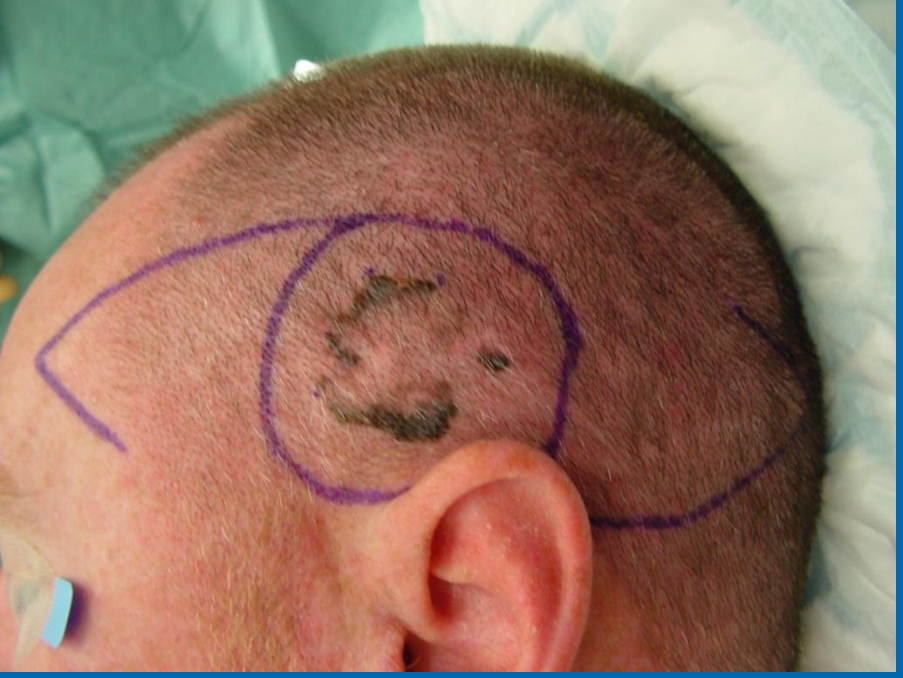
- Cartilage is trimmed back to allow the skin edges to come together without tension

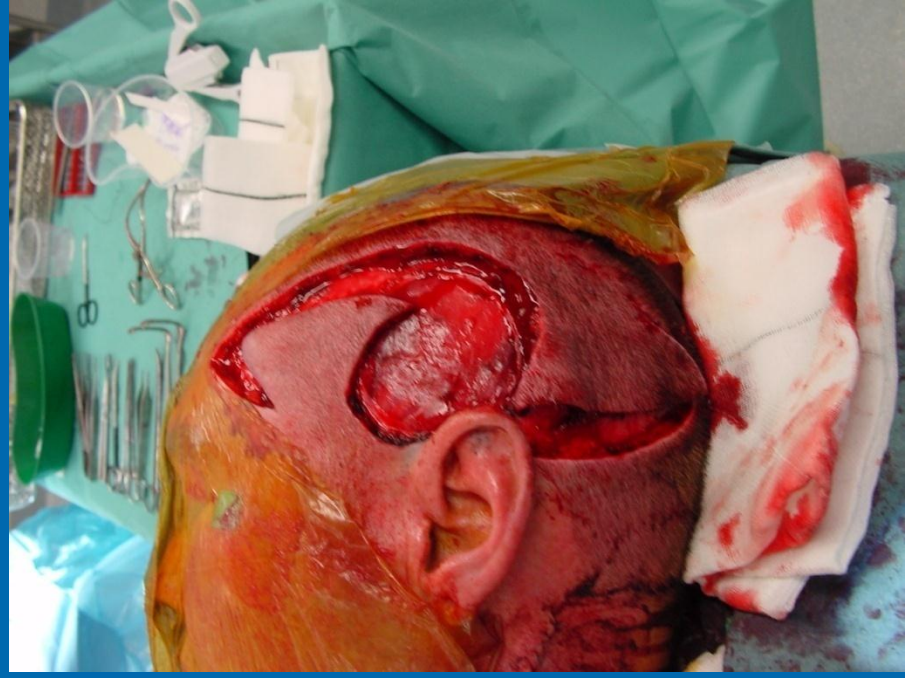


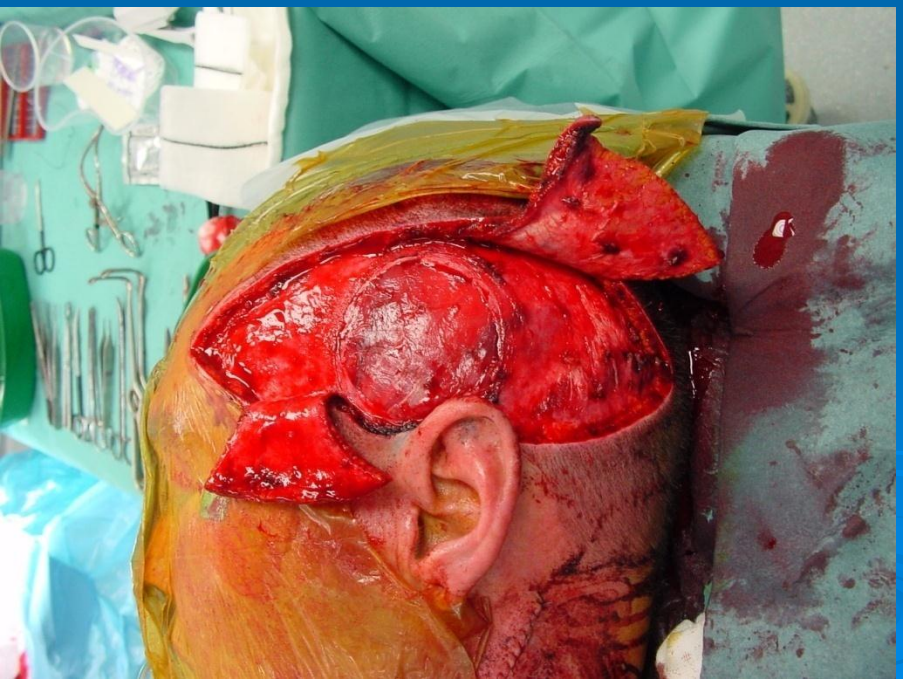
- Bring the cartilage and soft tissues together with subcutaneous vicryl

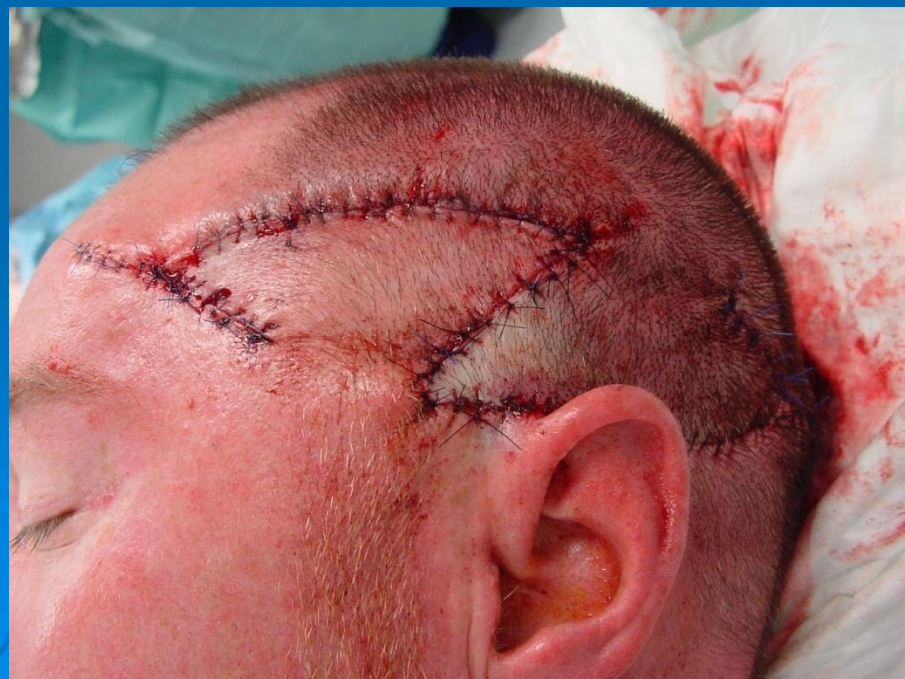
Hatchett Flaps



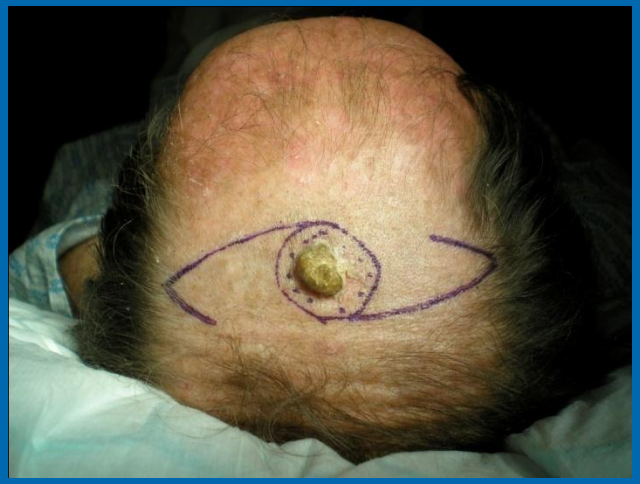


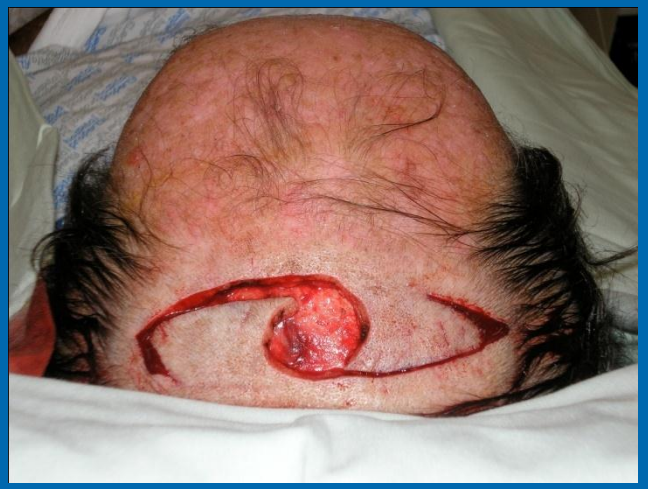


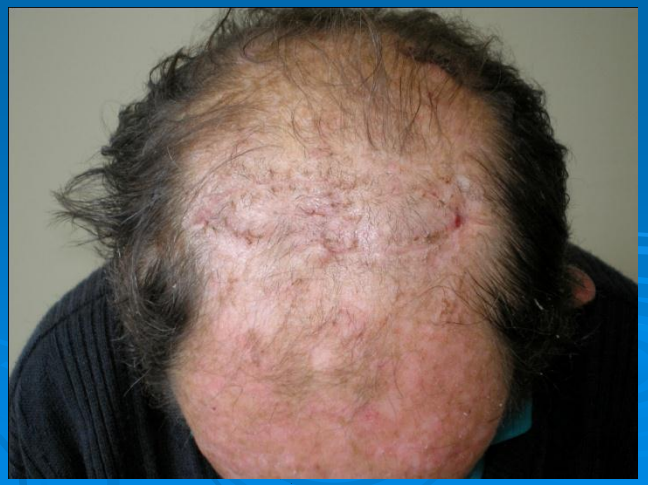




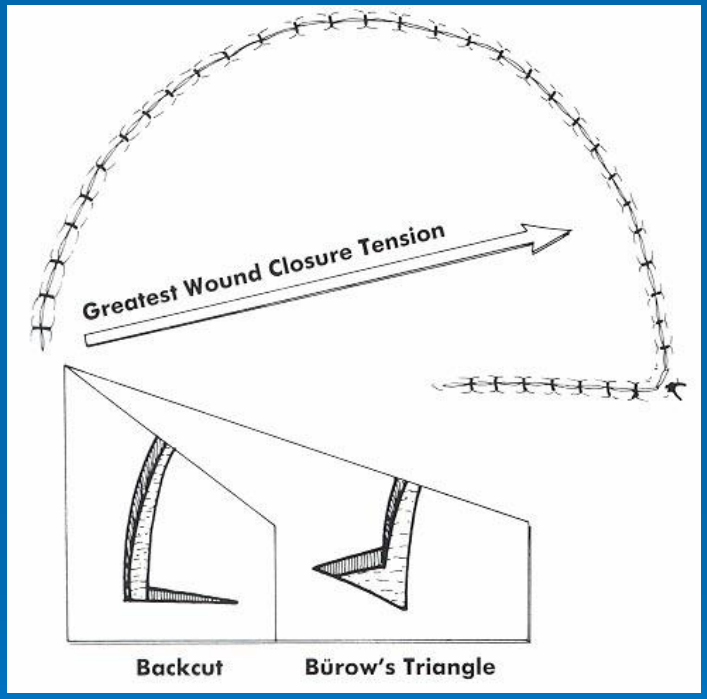
Hatchet Flaps - Scalp

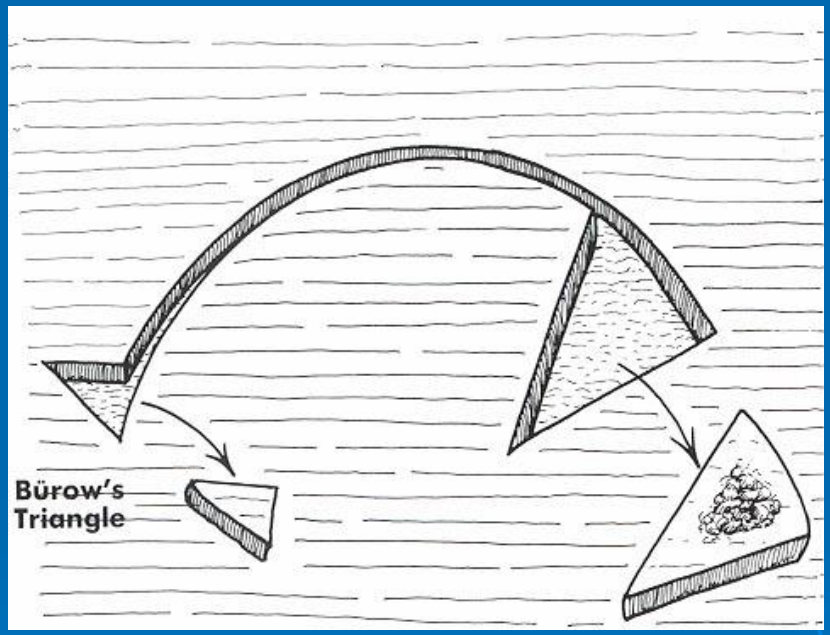




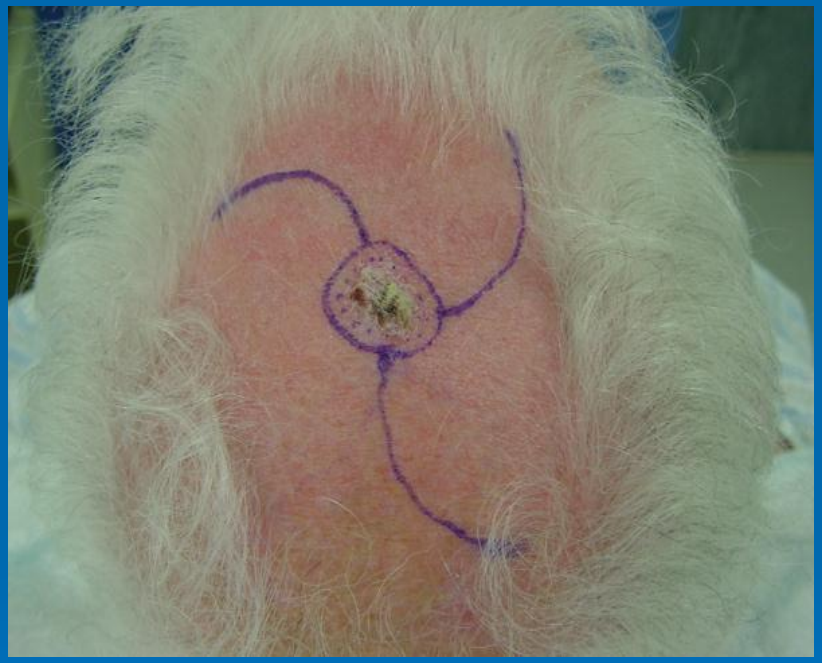


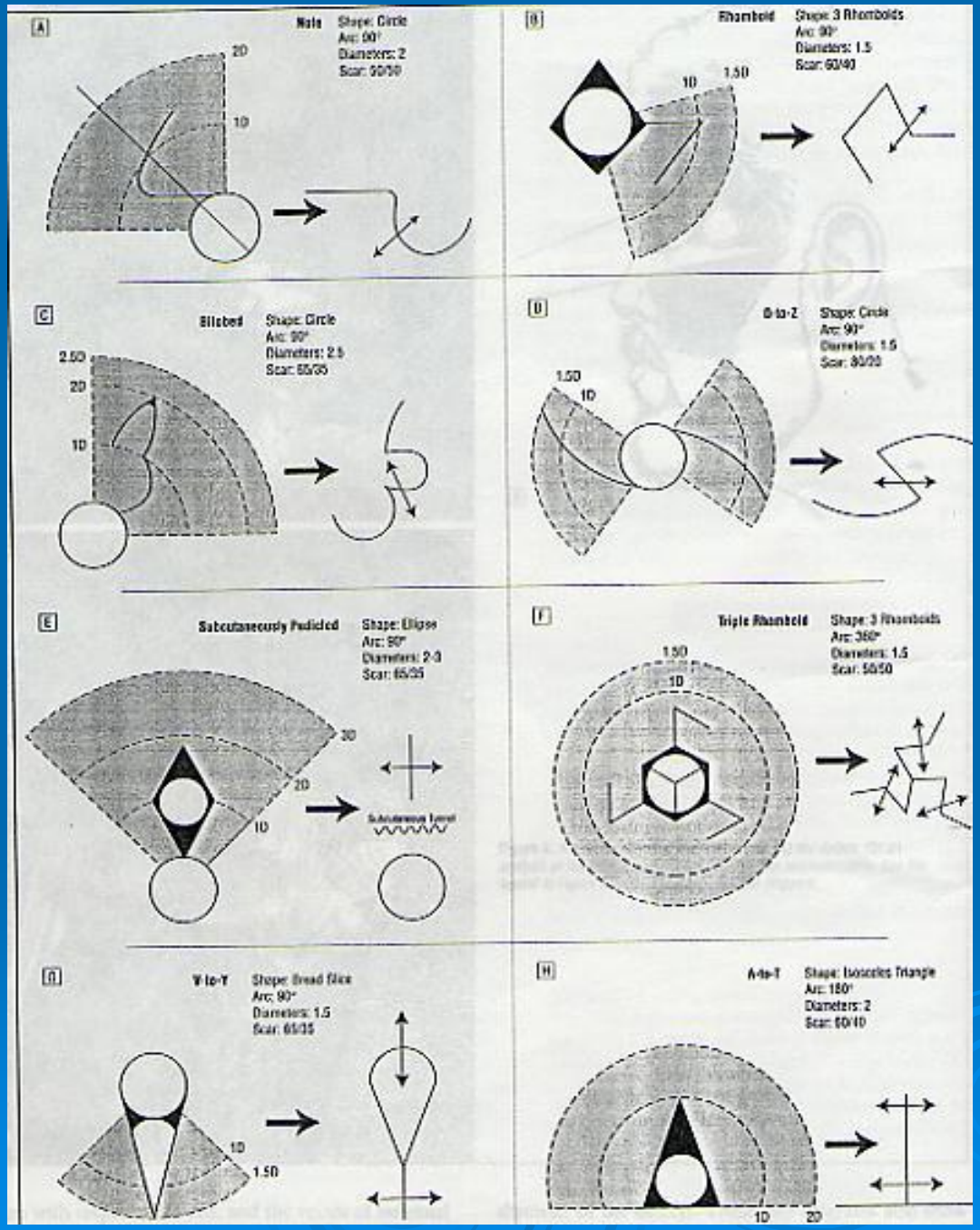
Rotation Flap



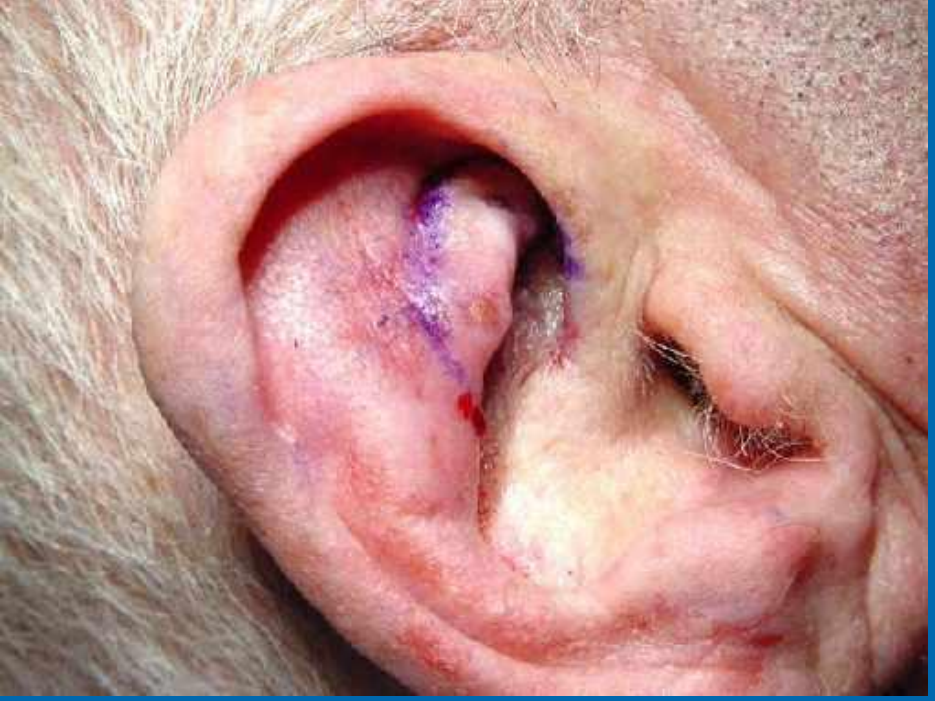
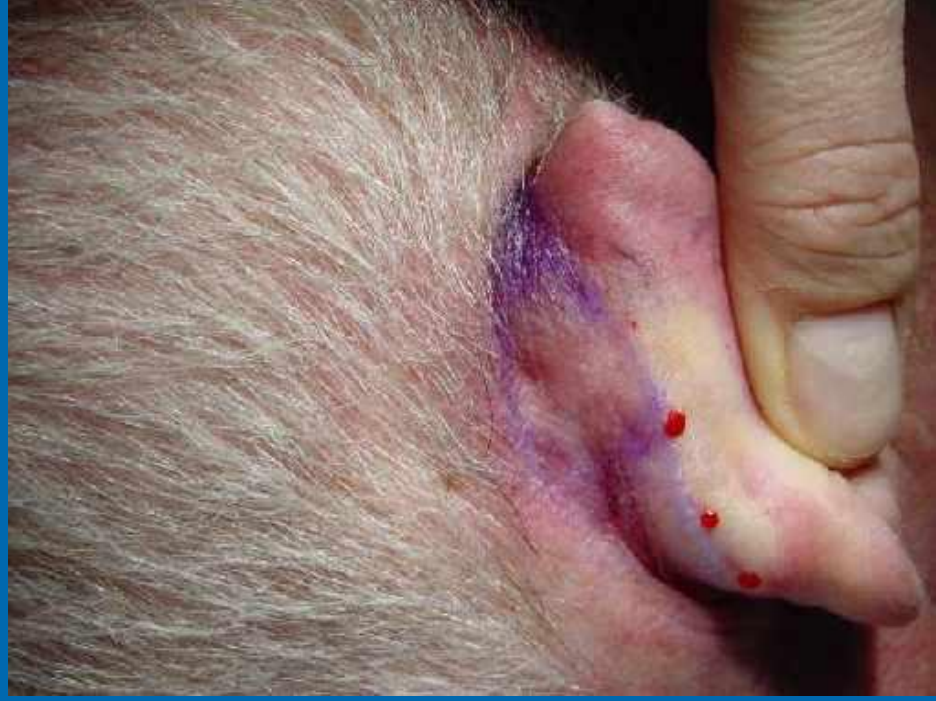


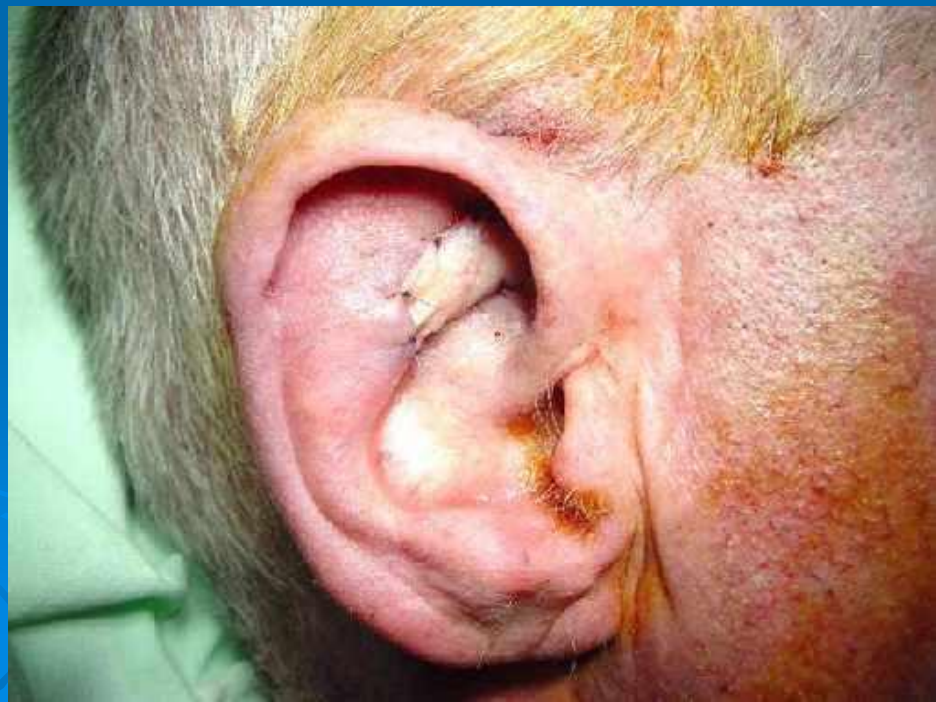
Scalp Rotation Flaps




A
Nala
Shape: Circle
Arc: 90°
Diameters: 2
Scar: 50/50
2D
1D
B
Rhomboid
Shape: 3 Rhomboids
Arc: 90°
Diameters: 1.5
Scar: 60/40
1D
1.5D
C
Blisbed
Shape: Circle
Arc: 90°
Diameters: 2.5
Scar: 65/35
2.5D
2D
1D
D
D-to-Z
Shape: Circle
Arc: 90°
Diameters: 1.5
Scar: 80/20
1.5D
1D
E
Subcutaneously Pedicled
Shape: Ellipse
Arc: 90°
Diameters: 2-3
Scar: 65/35
3D
2D
1D
F
Triple Rhomboid
Shape: 3 Rhomboids
Arc: 360°
Diameters: 1.5
Scar: 50/50
1.5D
1D
G
Y-to-Y
Shape: Bread Slice
Arc: 90°
Diameters: 1.5
Scar: 65/35
1D
1.5D
H
A-to-T
Shape: Isosceles Triangle
Arc: 180°
Diameters: 2
Scar: 60/40
1D
2D

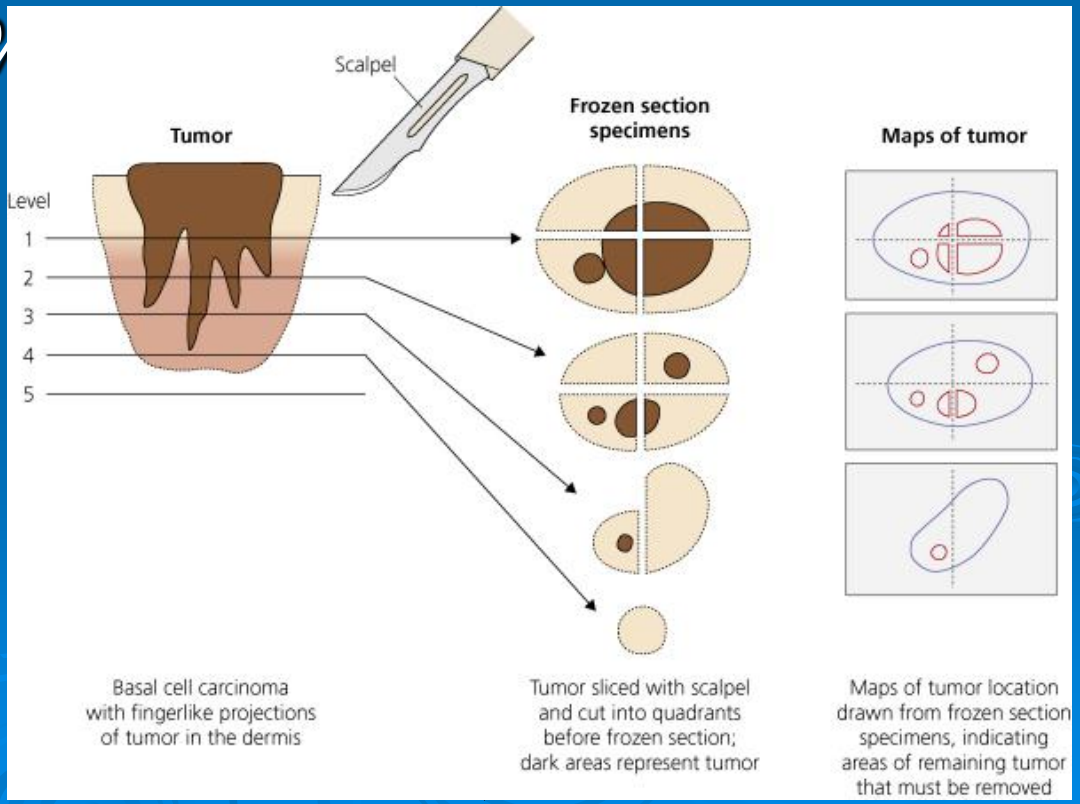
Paramedian Forehead Flap



MOHS Micrographic surgery

- Described by Frederick Mohs in 1941
- Tissue sparing
- Cure rates 94-99%



CONCLUSIONS

- H&N is forgiving - vascularity
- Knowledge of anatomy - nerves and vessels
- Informed patient consent
- Keep options available for reconstruction

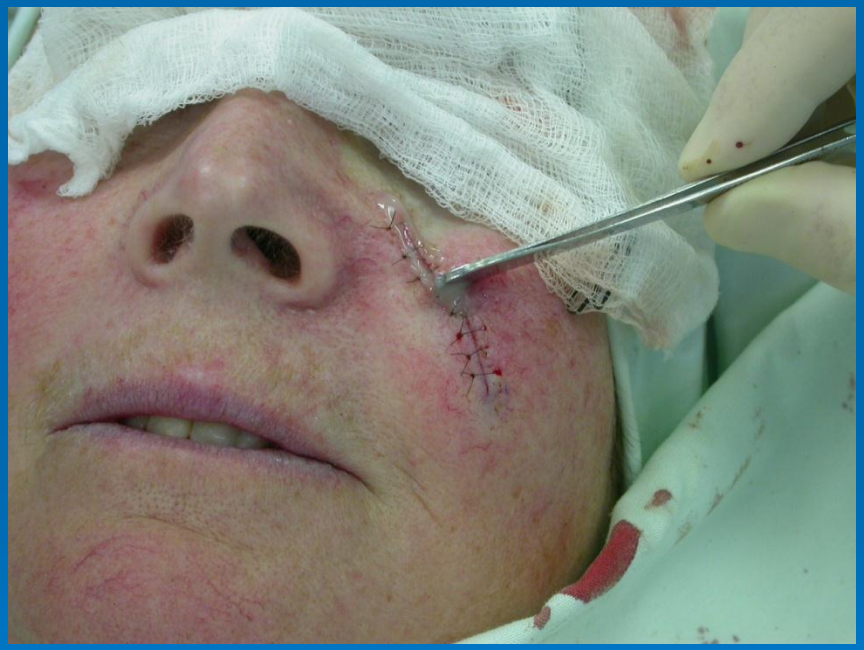
Imiquimod cream (Aldara)

- Immune response modifier
- Induces cytokines related to cell-mediated immunity including interferon-α, interferon-γ and interleukin-12
- 5-7 times per week for 6 weeks
- Initial clearance rate 95%, up to 20% recurrence
- Useful for HPV and Superficial BCC

5-Fluorouracil

- Antimetabolite antineoplastic agent
- 6% of dose is absorbed systemically
- Various stages of inflammation during treatment
- Superficial BCCs
- Actinic Keratosis, SCC in situ (Bowen's disease)

WOUND CARES



- Chlorsig Ointment
- Suture Removal 5-7 days
- Keep Dry