

Principles of flap reconstruction in ORL-HN defects

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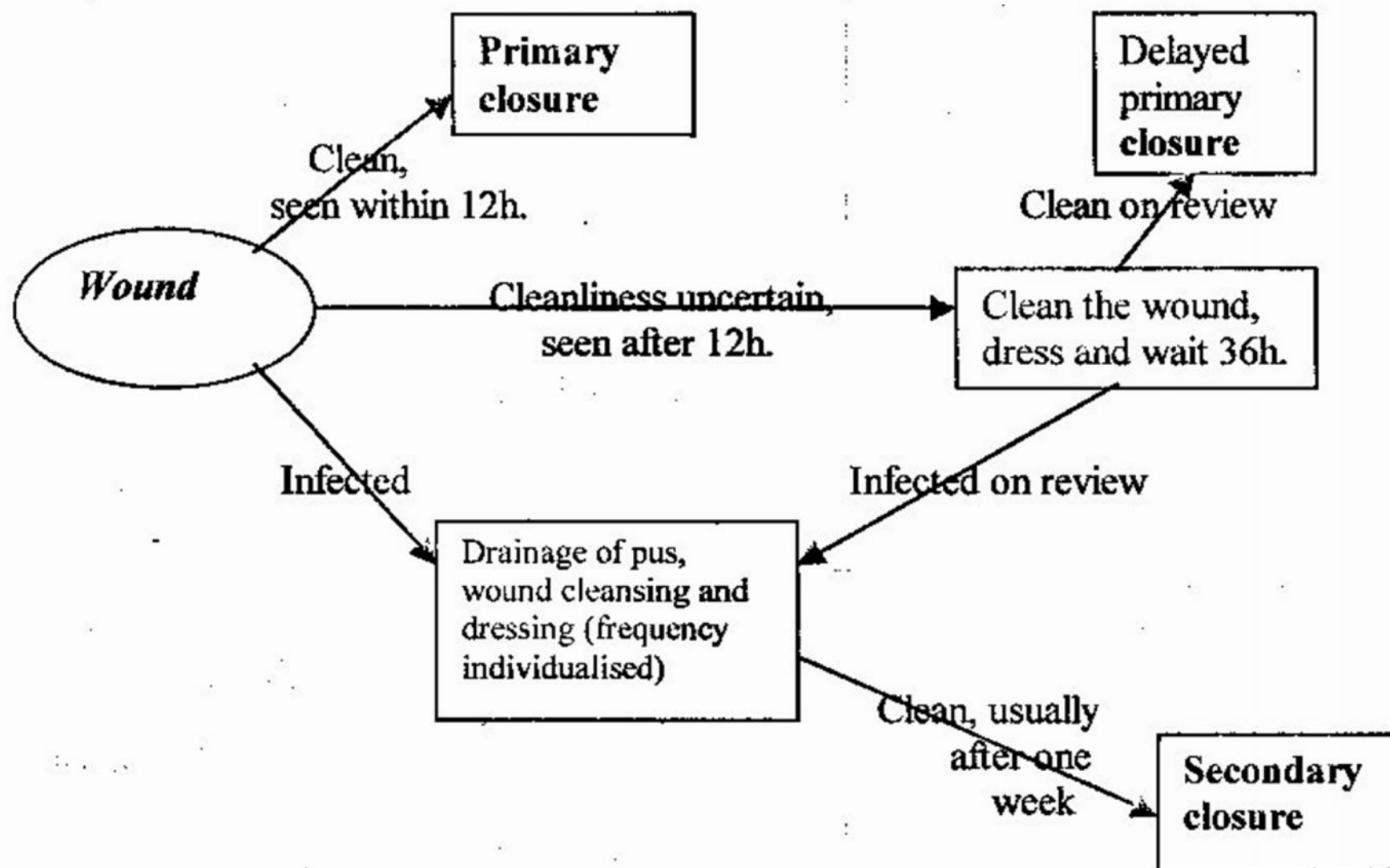
- Nasal defects and deformities
- Cleft palate and Velopharyngeal incompetence
- Pharyngeal and oesophageal defects
- Pinnal defects and deformities
- Facial palsy

Wound closure

Timing and cleanliness

Nature of wound

Algorithm for wound closure based on timing and cleanliness:



Closure based on nature of wound:

- Flap
- Graft
- Direct closure
- Do nothing



Fundamentals of Direct Closure:

- a) Incisions should follow skin tension lines
- b) Gentle handling of tissues with adequate debridement
- c) Haemostasis
- d) Eliminate tension at edges
- e) Use fine sutures.
- f) Evert wound edges during closure

Skin Graft

- A piece of skin transferred from one part of the body to the other while it is completely detached from its blood supply or donor site attachment

Tissue grafts:

- Skin
- Fascia
- Tendon
- Nerve
- Vessel
- Bone
- Organ
- Fat

Sources of skin graft

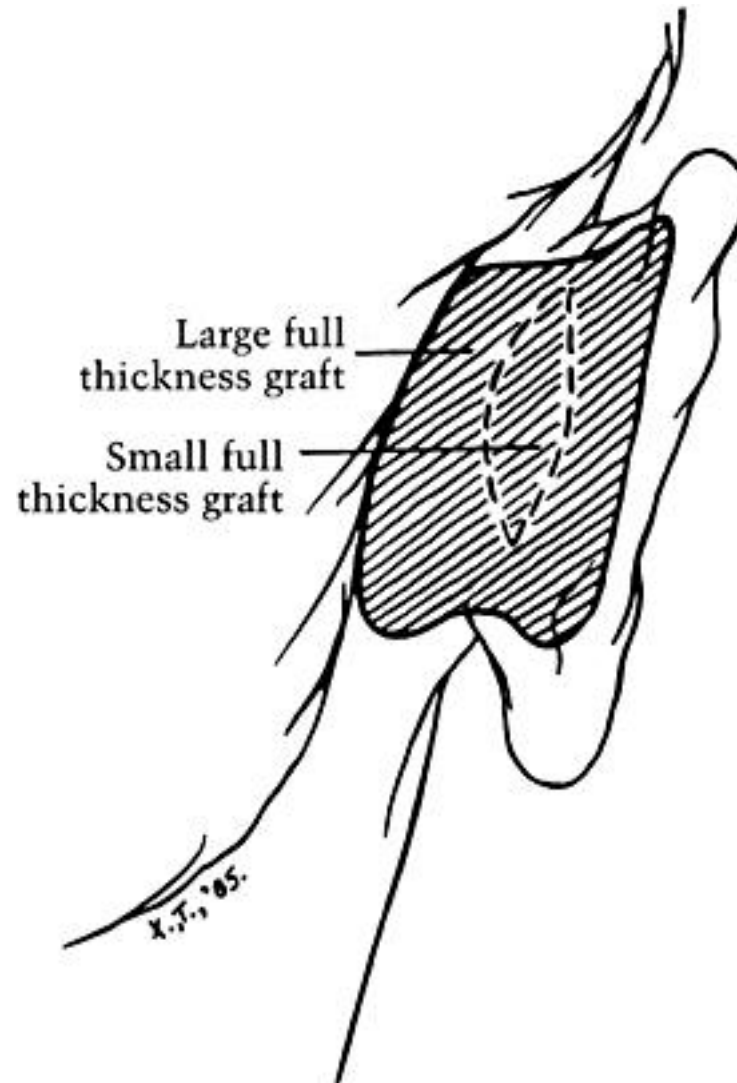


- Autograft
- Isograft
- Allograft
- Heterograft

Indications for skin Grafting

- Significant gap in a wound such that it cannot be closed without tension. Such may be due to trauma, after excision of tumours, and scars.
- Treatment of non neoplastic ulcers and full thickness skin burn

Post Auricular graft



Flaps

- A flap is a mass of tissue transferred from one part of the body to another with its blood supply intact.

Indications for flap transfer

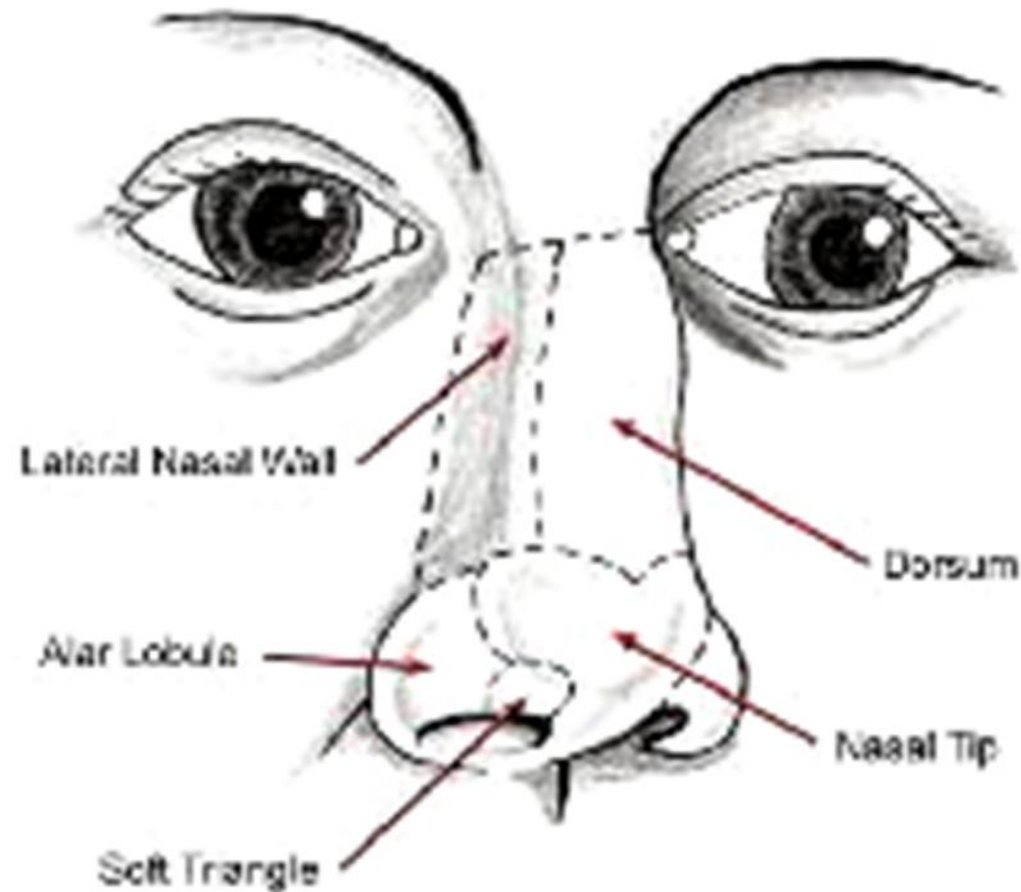
- **SIGNIFICANT GAP** in which the bed is NOT ADEQUATELY VASCULAR e.g., bare bone, bare tendon
- Transfer of **COMPOSITE TISSUE**, e.g., bone and skin

Nasal defects and deformities

- Congenital - clefts
- Acquired:
 - trauma - sports, human bite
 - infection and inflammation
 - neoplasia
 - altered body image

NASAL RECONSTRUCTION

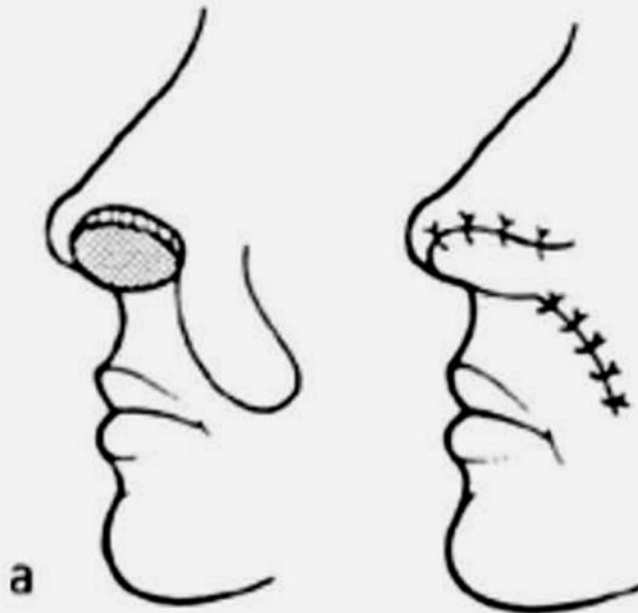
Nasal aesthetic subunits.



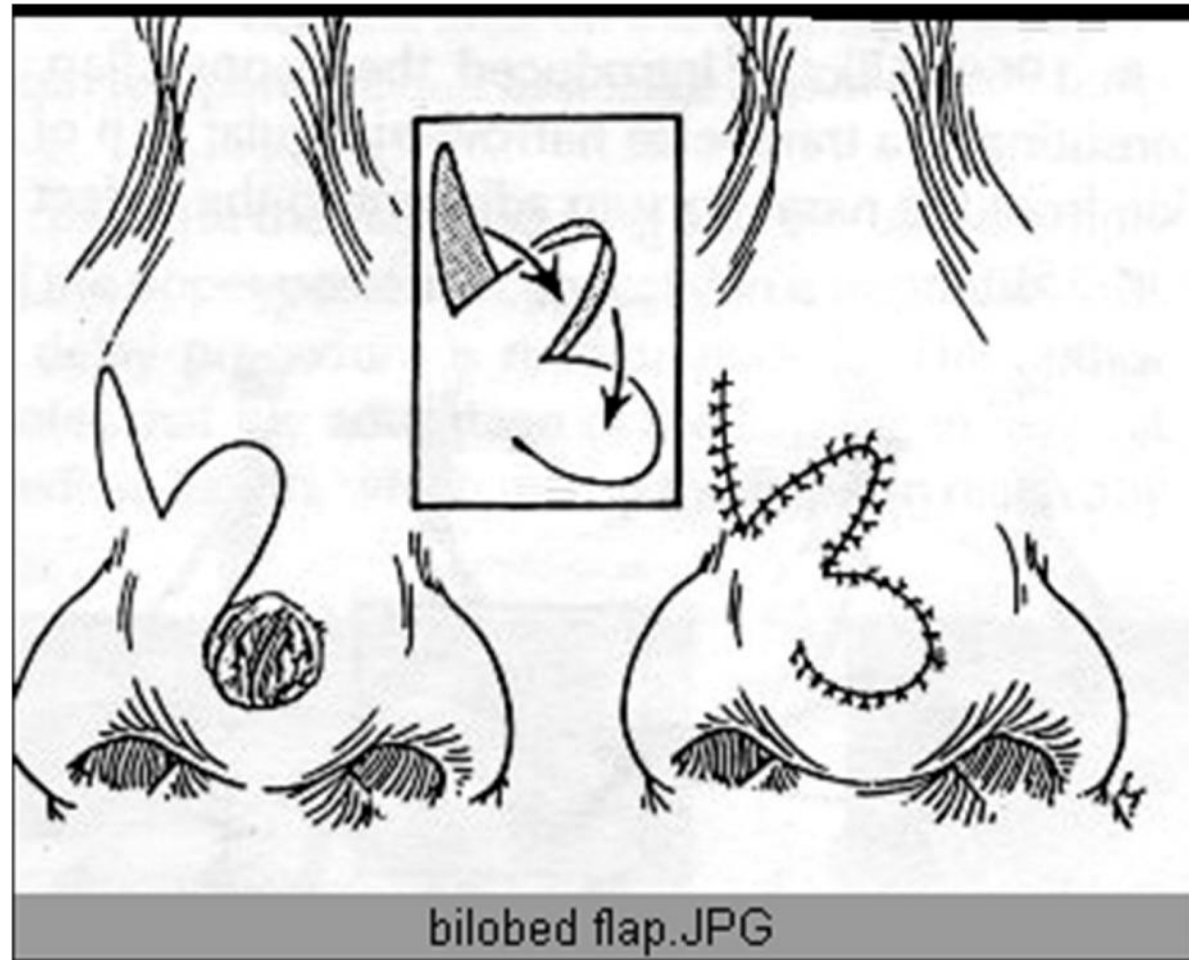
Basic principles

- Restoration of “normal”.
- Replace missing parts with like tissue.
- Create template for replacing missing parts.
- At skin level, replace entire aesthetic subunits where practical.
- Scar placement.
- Anticipate final stage in which subcutaneous tissue is sculpted to replicate delicate configuration.

DIEFFENBACH – 1830



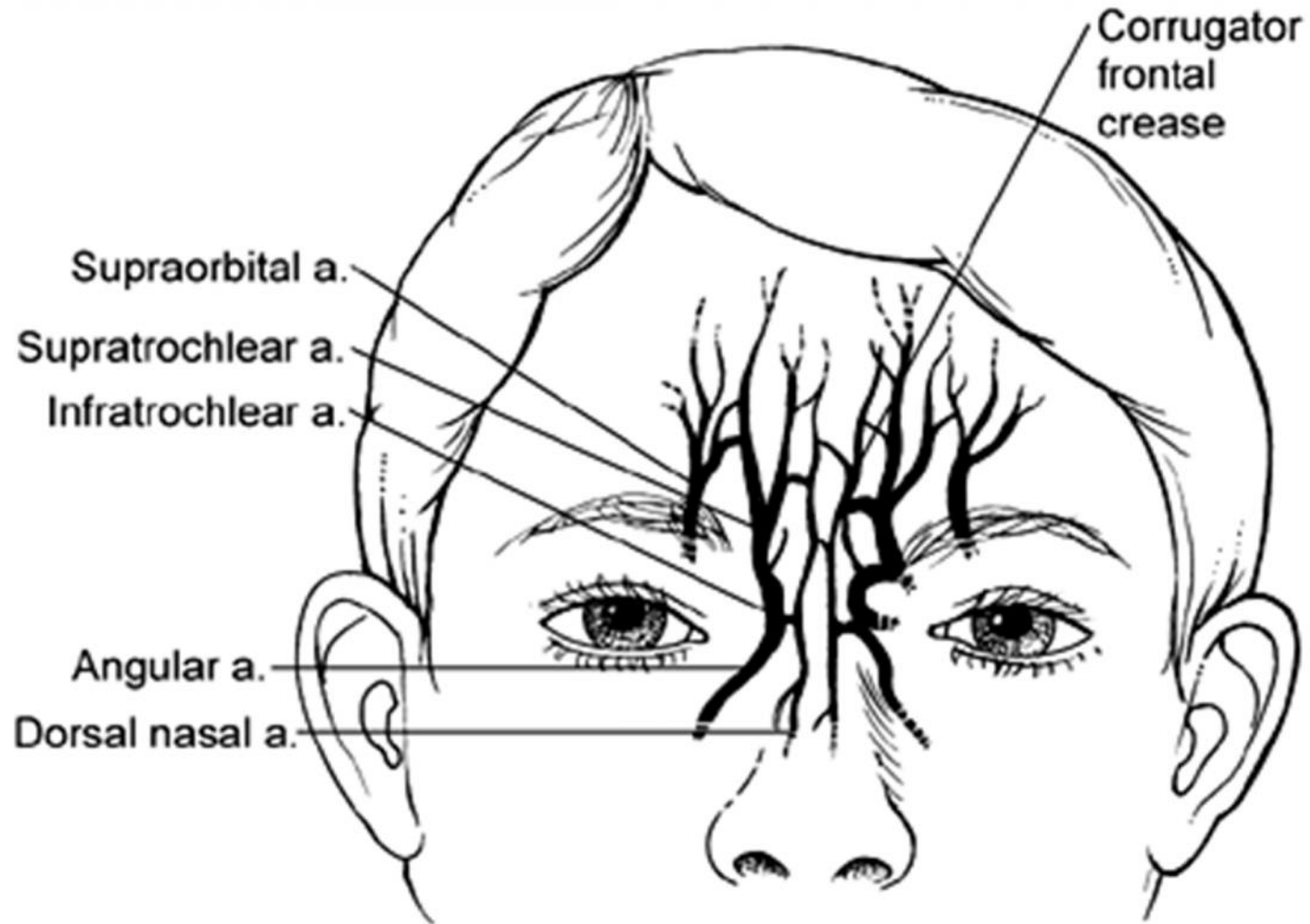
nasolabial flap.jpg



Bilobed flap



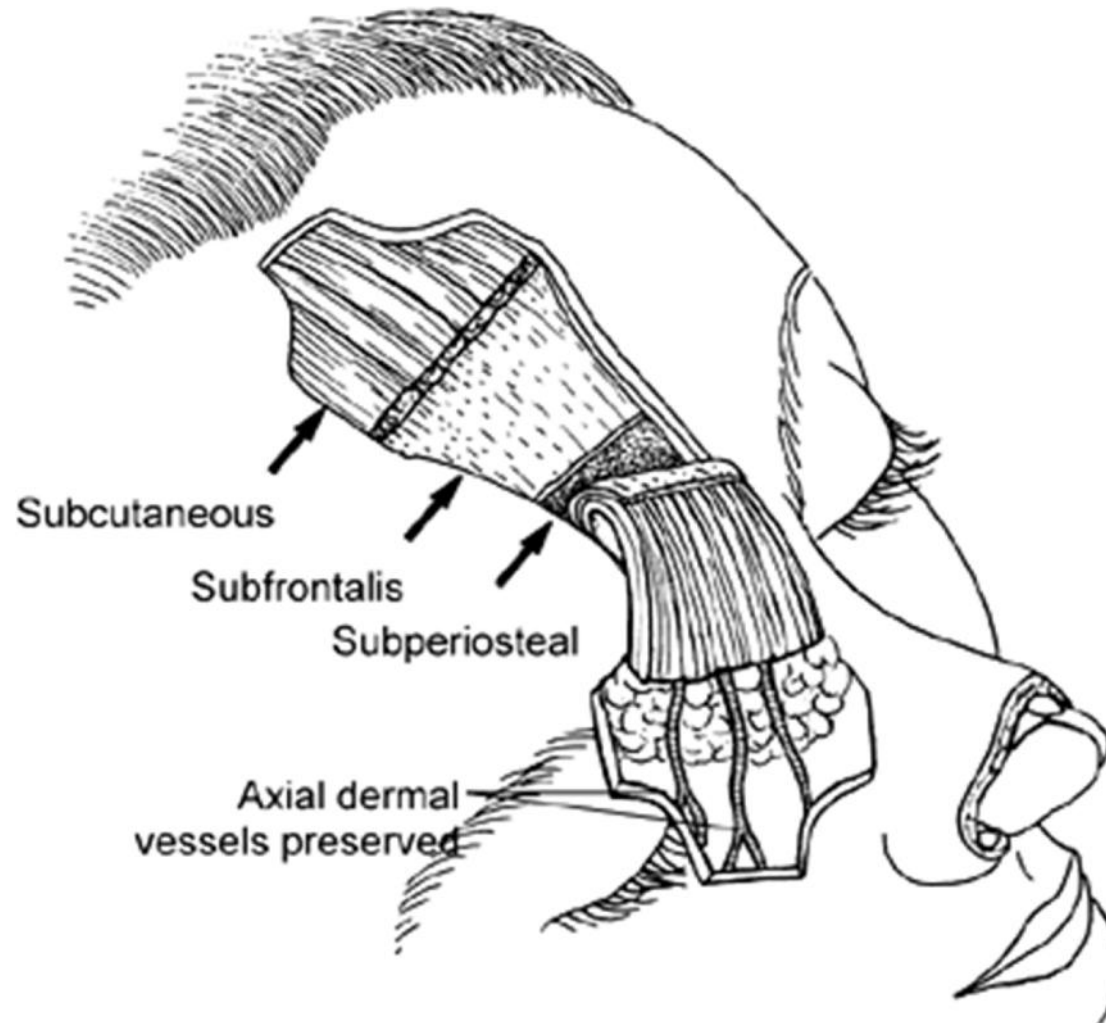
The forehead flap



Forehead flap



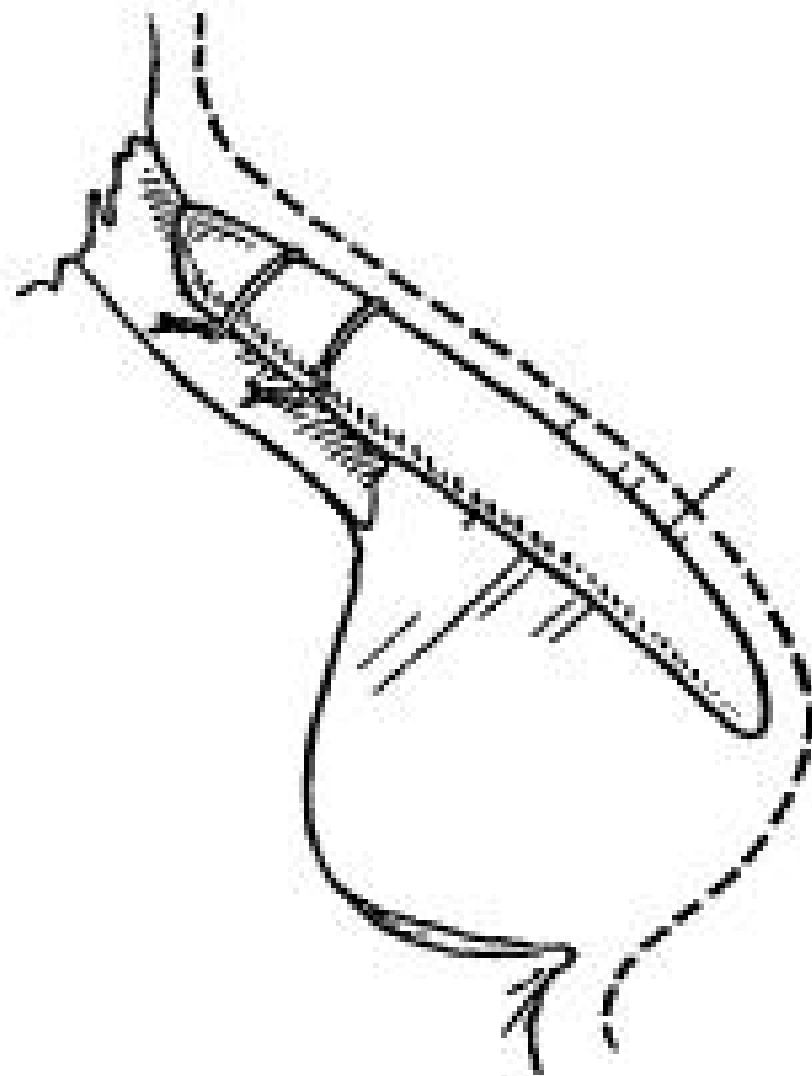
Flap elevation

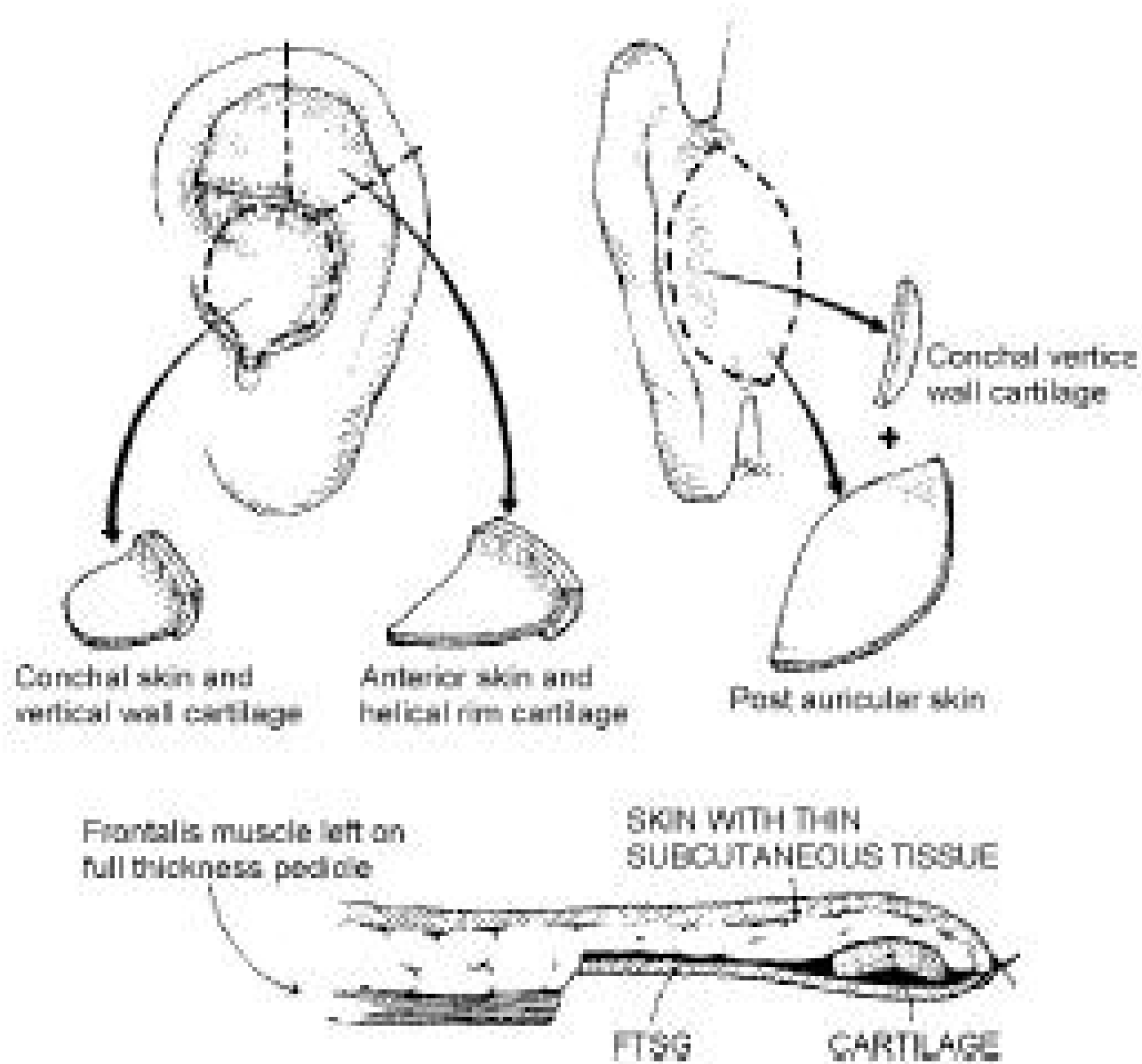


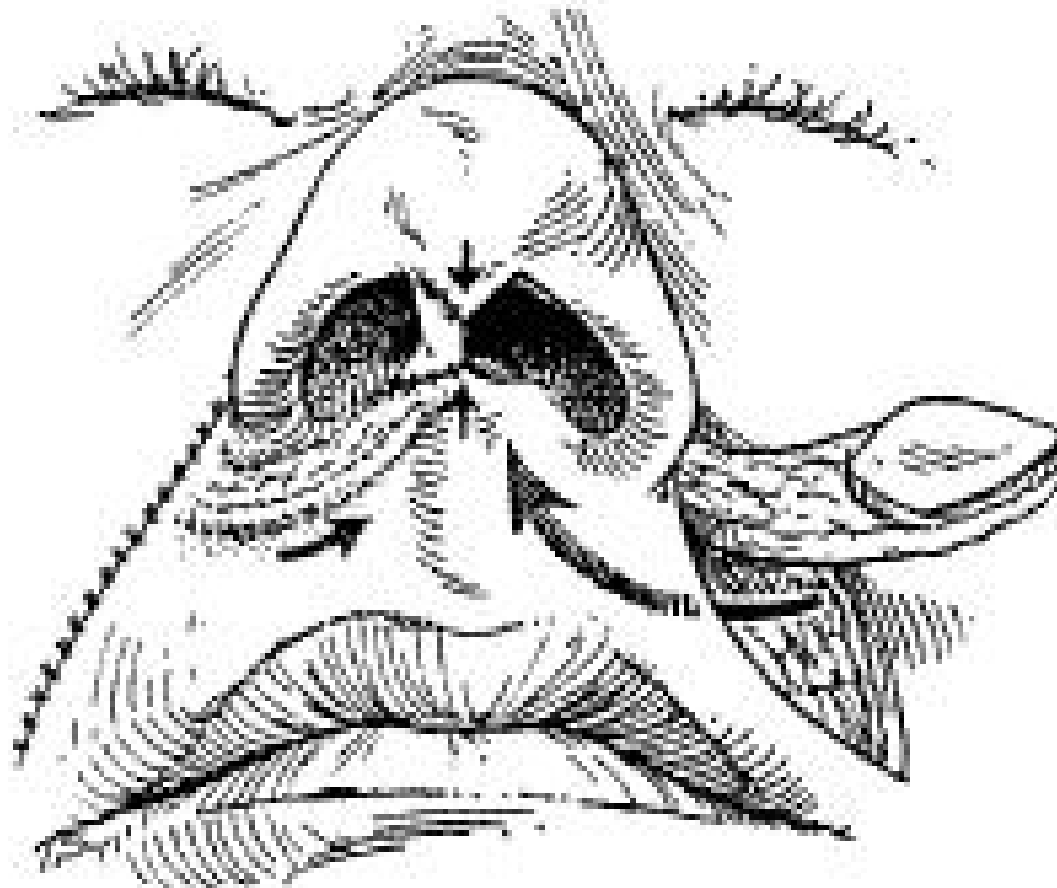


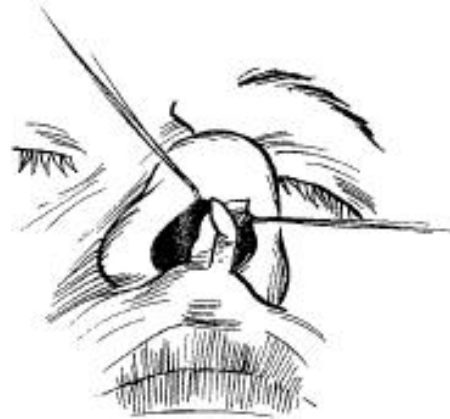
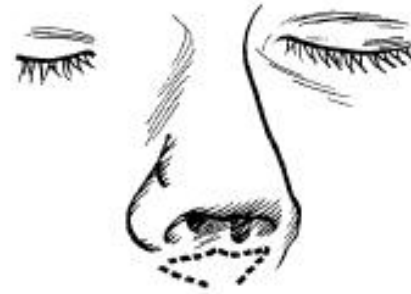
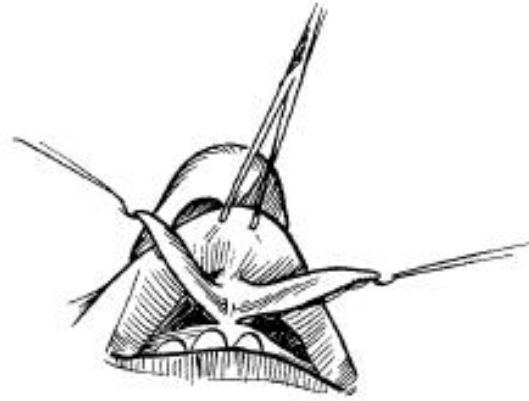


upper lip bcc (reconstruction).jpg









Pharyngoplasty

Pharyngoplasty

- The surgical management of velopharyngeal incompetence usually consists of pharyngeal flap or sphincter pharyngoplasty.
- The sphincter is constructed from the posterior tonsillar pillars, and the palatopharyngeus muscle is included in the flaps.
- Pharyngeal flaps may be superiorly or inferiorly based.

Aim of pharyngoplasty

- The aim of the procedure is to attach tissue from the posterior pharyngeal wall to the soft palate so as to create a midline obstruction of the oral and nasal cavities with two lateral openings (ports).
- Flap width is determined by the degree of lateral pharyngeal wall motion: flap length depends on the space to be bridged.

PHARYNGEAL AND OESOPHAGEAL RECONSTRUCTION

Indications

- Resection of oesophagus
 - Neoplasm
 - Dysfunctional esophagus
- Oesophagectomy/gastrectomy complications
 - Fistula
 - Stricture
 - Length
- Failed oesophageal continuity procedures
 - Dehiscence
 - Stricture
 - Dysfunction

- Supraclavicular Artery Island Flap
- Deltopectoral flap
- Pectoralis major flap
- Gastric pull through
- Jejunal, ileal flap
- Colonic interpositioning

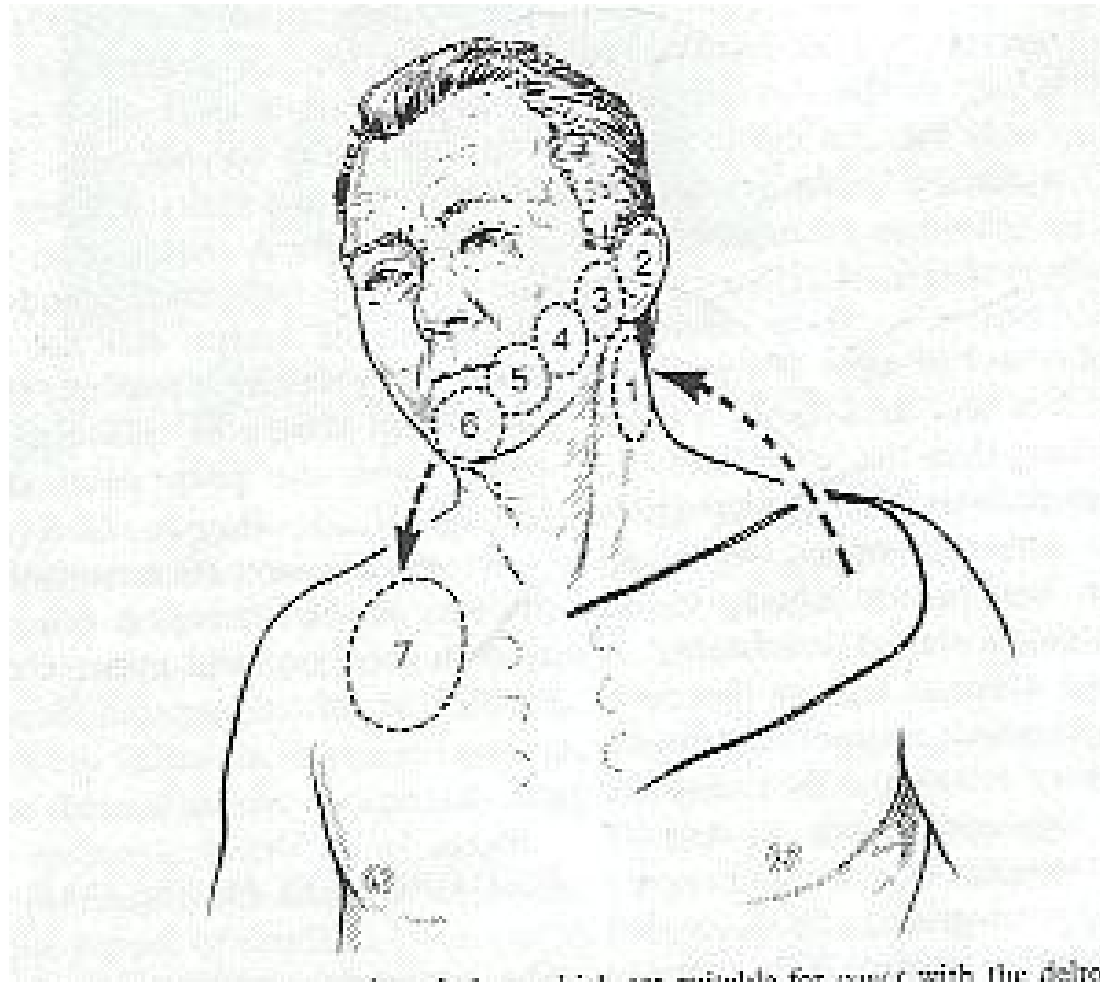
Supraclavicular artery flap

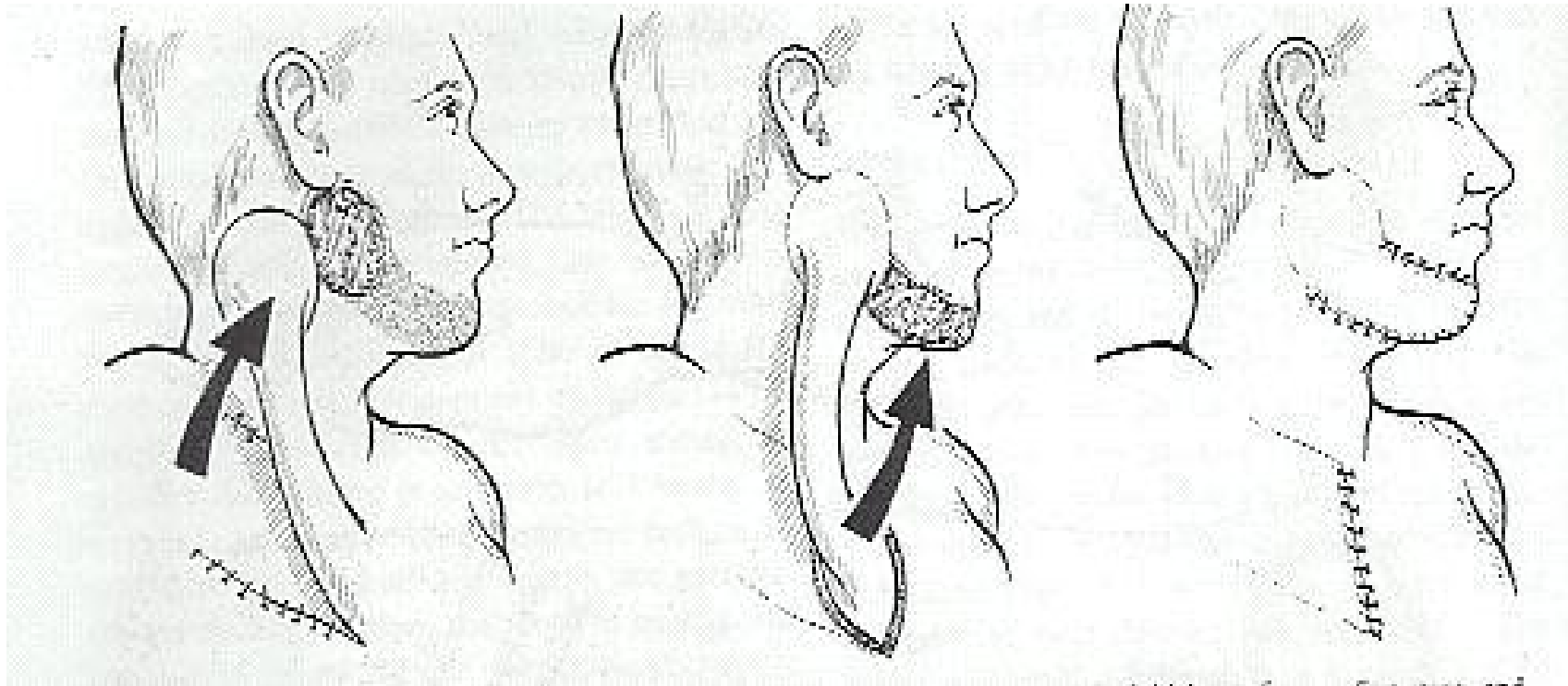


Supraclavicular artery flap

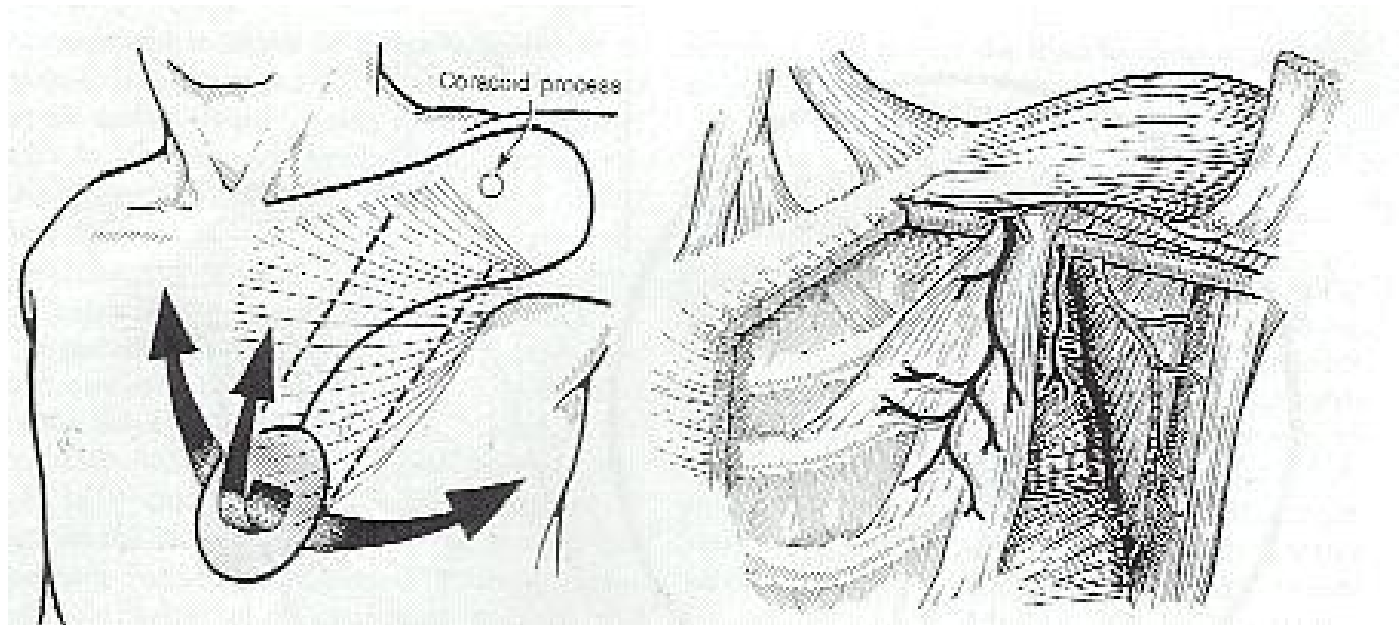


Deltopectoral flap





Pectoralis major flap



EAR RECONSTRUCTION

Surgical considerations and limitations

- the ear is a difficult structure to draw or sculpt, let alone surgically reproduce.
- the plastic surgeon's aim is to achieve accurate representation —that being to create an acceptable facsimile of an ear that is the proper size, in the proper position, and properly oriented to other facial features.

Prominent ears

Otoplasty for the prominent ear

- Most common causes are:
 - Concha - overdeveloped, or excessively deep conchal cup.
 - Antihelix fold - underdeveloped, effaced or absent fold.
 - Concha and antihelix fold combined.
- Height and width of the ear remain normal

Operative maneuvers

- Alteration of the depth of the concha
 - Suturing to the mastoid fascia.
 - Excision of cartilage.
 - Scoring of cartilage(Gibson's principle)
- Alteration of antihelix folds
 - Suturing of cartilage.
 - Scoring of cartilage.
 - Thinning or grooving the posterior surface of the antihelix + Mustarde sutures.
 - Through incision of cartilage(luckett procedure) or tubing method.
- Alteration of the position of the upper auricular pole
 - fossa - fascia stitches
 - Scoring of cartilage.

Operative maneuvers

- Alteration of soft tissues
 - Earlobe - suturing earlobe to concha.
 - » Cauda helicis to posterior wall of concha.
 - Excision of auricularis posterior muscle and adjacent soft tissue for concha to "sit" into (Elliot maneuver).
- Ear molding with tapes and dental compound is sufficient in neonates

Complications of Otoplasty

- Hematoma
- Malposition of the ear - headband, tape and soft dental wax, post-auricular prop.
- Pressure deformation.
- Wound infection

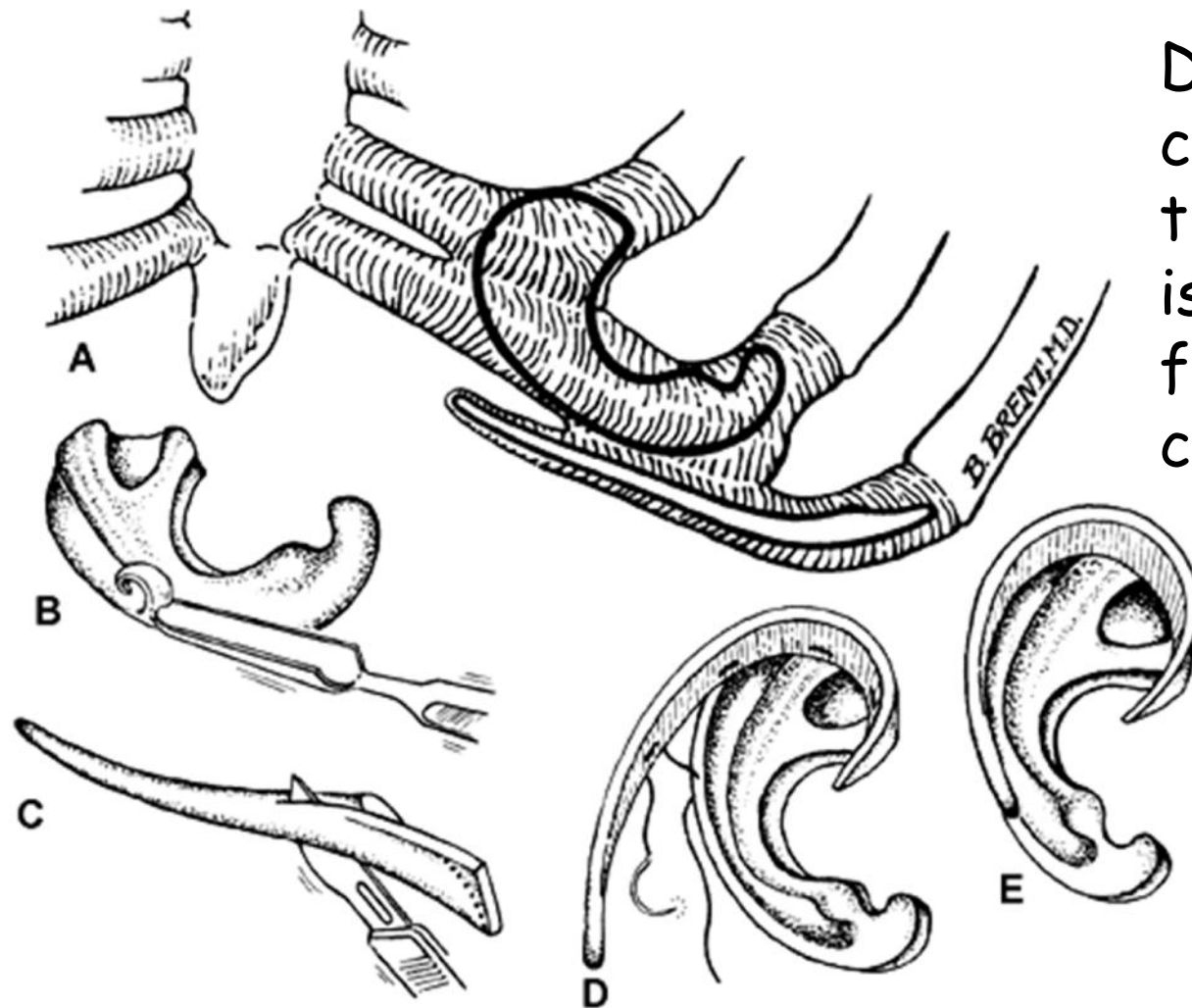
Reconstruction of the microtic ear

- First Stage of Reconstruction
- Obtaining Rib Cartilage
- Framework Fabrication
- Framework Implantation
- Postoperative Management
- Other Stages of Auricular Construction
 - ❖ Rotation of the Lobule
 - ❖ Tragal Construction and Conchal Definition
 - ❖ Detaching the Posterior Auricular Region
 - ❖ Managing the Hairline

Ear framework



Fabricating an ear framework



Donor site is contralateral thorax. Helical rim is obtained from floating rib cartilage.

INDICATIONS FOR EAR RECONSTRUCTION

- Congenital auricular deformities
- Partial ear loss
- Total ear loss
- Other acquired ear deformities, such as burns

AIM OF RECONSTRUCTION

- To restore the form and function of the ear to as close to the normal as possible

RECONSTRUCTION FOR ACQUIRED DEFORMITIES

- CAUSES- trauma, tumour excision, burns
- Defect may be partial thickness or full thickness(composite loss)
- Partial composite ear loss
 - Upper third
 - Middle third
 - Lower third
- Total ear loss

Acquired Partial Defects

- The most commonly encountered
- Reconstruction influenced by aetiology, location and nature of the residual deformity.
- Skin loss without cartilage exposure - STSG or FTSG
- Cartilage exposure - excision+ primary suturing; local flap closure
- Composite loss - options vary

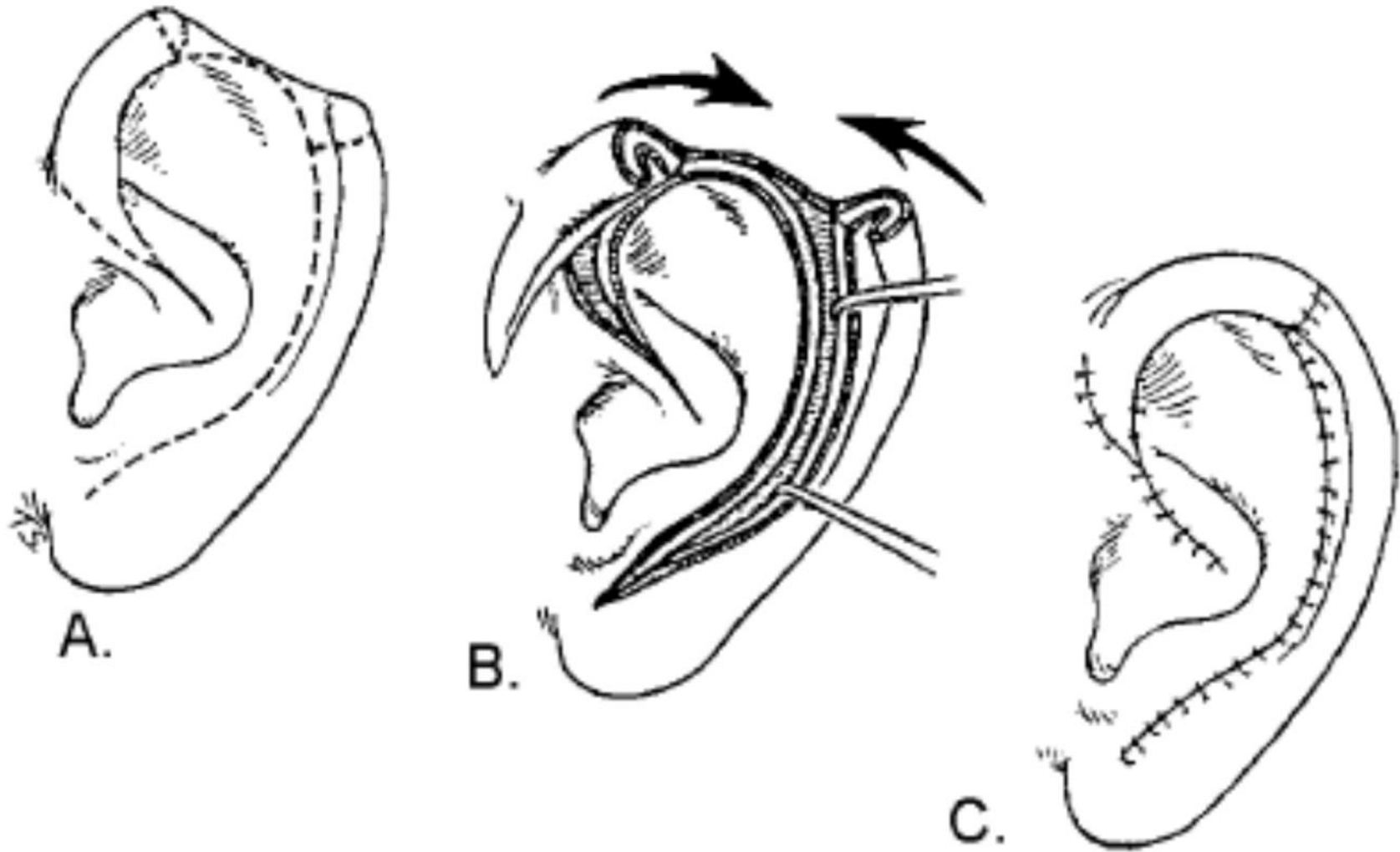
Specific Regional Defects

- External auditory canal
 - Prevent stenosis by careful realignment of tissues and insertion of an acrylic mold; retain for 6 months
 - If stenosed - Meatoplasty + FTSG over an acrylic mold applied to suitable recipient bed
 - multiple Z-plasties
 - local flap
- Helical rim
 - Helical advancement
 - Chondrocutaneous graft
 - Local advancement flap+ rim of cartilage
 - Use of thin-calibered tubes

Upper Third Defects

- Rim loss - Helical advancement (Antia-Buch)
- pre-auricular flap cover
- Intermediate loss - Banner flap+ cartilage
graft (Crikelair)
- Major loss - contralateral conchal cartilage
graft (Adams, 1955)
- chondrocutaneous composite
conchal flap

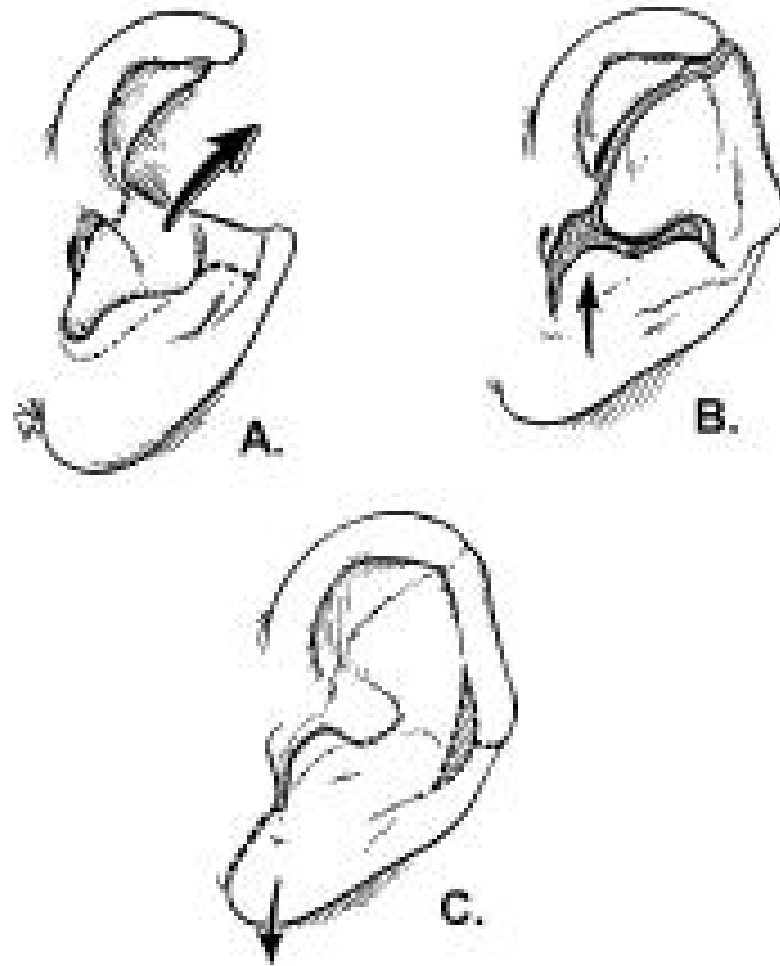
Antia-Buch's helical rim advancement



Middle Third Defects

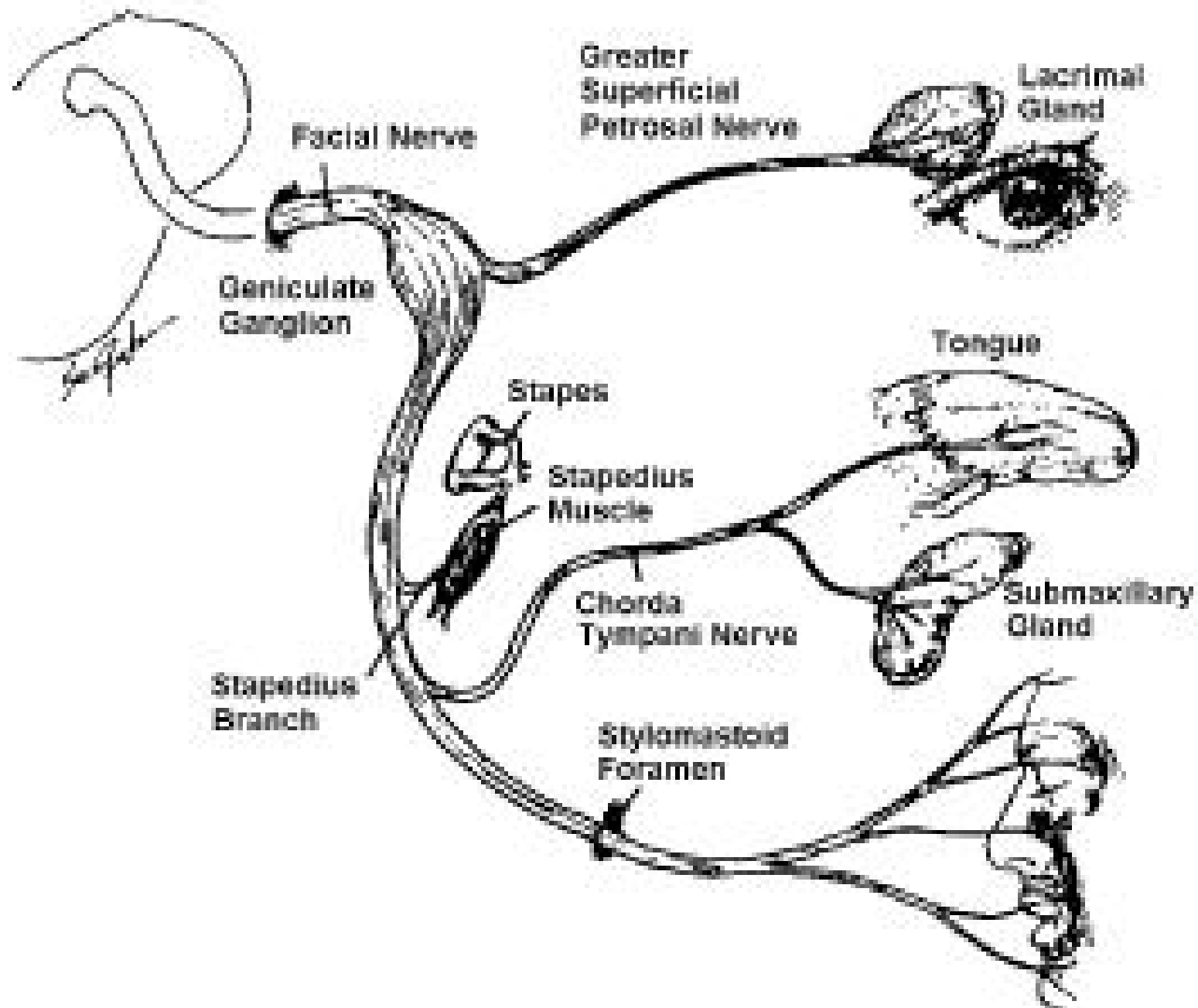
- Rim: Helical advancement
- Post-tumor excision: wedge excision with accessory triangles
- Major loss: Conchal rotation (Orticochea)
cartilage graft inserted via
Converse's tunnel procedure or
covered by adjacent skin flap

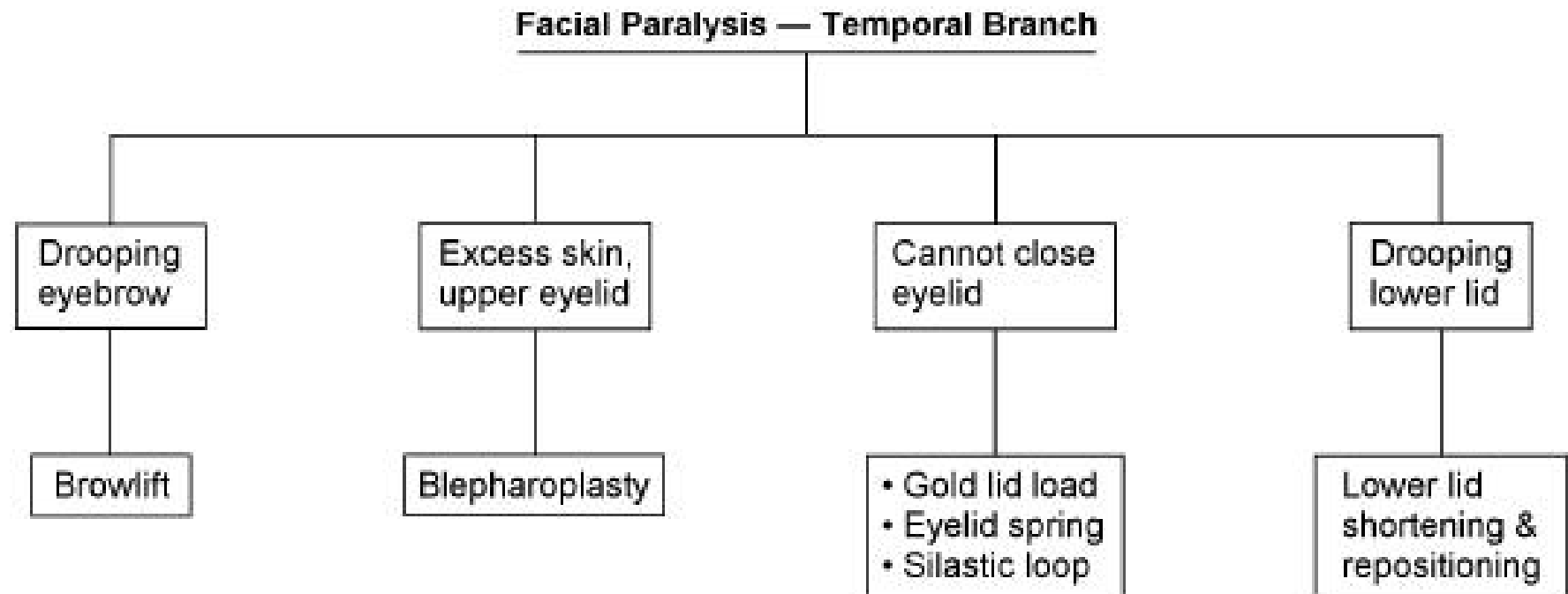
- Ortichochea's conchal rotation.



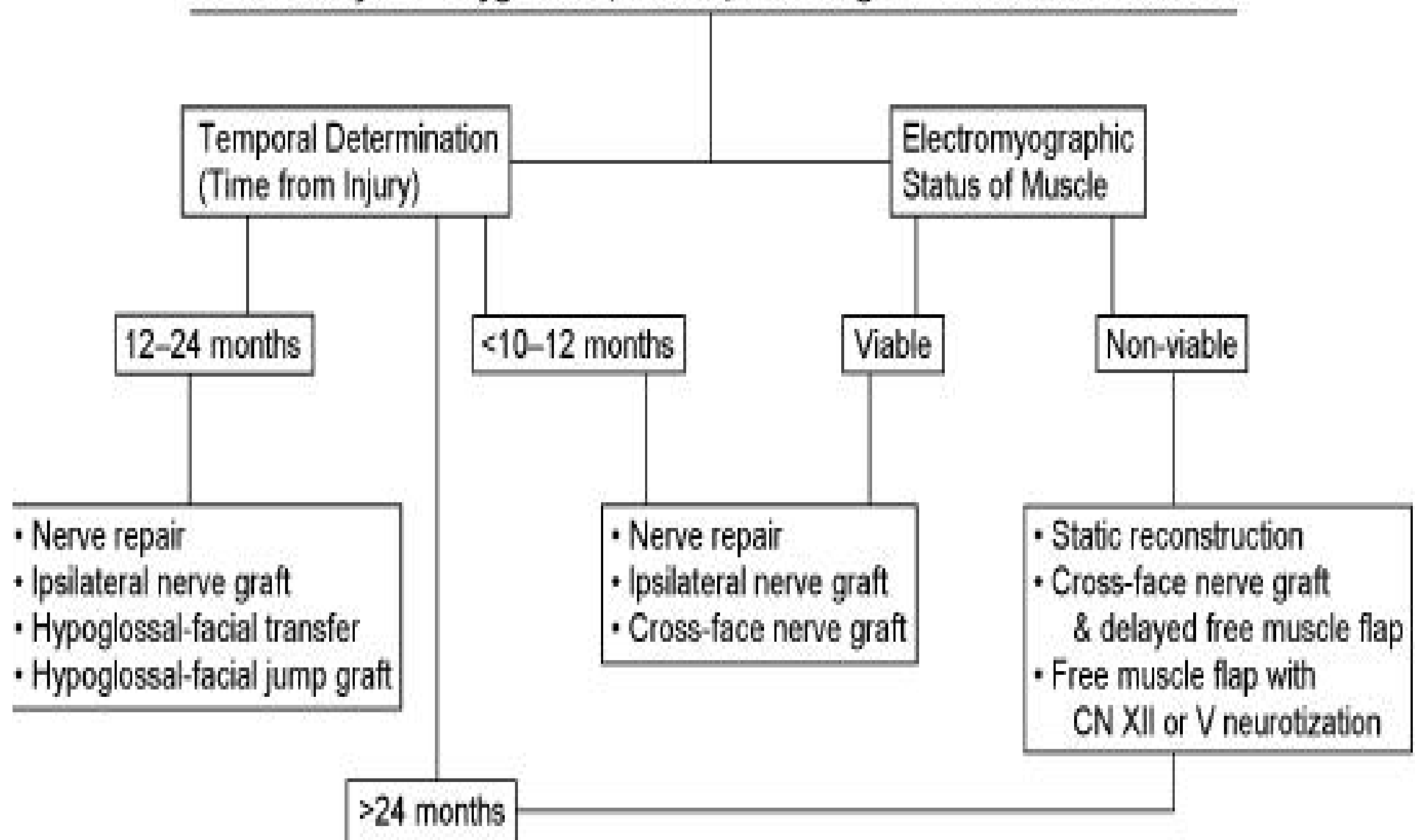
FACIAL PALSY

Main divisions of facial nerve





Facial Paralysis — Zygomatic, Buccal, and Marginal Mandibular Branches





Tissue
expansion



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- Selected readings in Plastic Surgery.
- Baylor University Medical centre.
- Hackney FL. Plastic Surgery of the ear
- Anderson RG. Facial palsy.
- Muzaffar AR and English JF. Nasal reconstruction