Restoration of Cutaneous Nasal Defects

Russell D. Briggs, M.D.
Faculty Advisor: Karen H. Calhoun, M.D.
The University of Texas Medical Branch
Department of Otolaryngology
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History

- Nasal reconstruction was among the earliest plastic surgical procedures performed
- Interest in restoring the nose continues today
  - Imperfections are recognized
  - Formidable challenge to the reconstructive surgeon
Skin cancer is the most common human malignancy (over 800,000 cases)

- Most arise on sun-exposed regions in the head and neck
- The nose is the most common site of involvement and is most common site of recurrence after treatment (30%)
- 90% are basal cell carcinomas
Introduction

- Increased exposure
- Conservative treatment
- Lack of SQ
- Access to perichondrium
- Multicentricity
- Embryonic fusion planes
Topographic Anatomy

- The nose is a separate aesthetic subunit of the face
- The nasal surface has several distinct topographic subunits
- Important for nasal reconstruction
  - Preserve color, thickness, texture
  - Replace tissue with like tissue
Nasal Skin and Subcutaneous Tissue

- Interrelationship of skin, skeletal and cartilage support, and lining must often be addressed
- Skin in lower 2/3 thick and sebaceous
- Skin in upper 1/3 thin and transparent
- Little subcutaneous tissue
  - Allows for perichondral/periosteal involvement
Evaluation

- What does patient want?
- Diagnose the nasal defect
  - Subunits, tissue layers, internal structures
- Evaluate for donor materials for missing surface and tissue layers
- Patient’s general health and condition of the skin
Techniques of Nasal Reconstruction

- Healing by secondary intent
- Dermabrasion
- Primary closure
- Full thickness skin grafts
  - Composite grafts
- Local flaps
  - Nasal lining flaps, structural support
Secondary intent

- Typically for medial canthal defects
- Results in contraction and distortion of nose
- Poor aesthetic outcomes on most defects of nose
Dermabrasion

- Limited to partial thickness defects
- Typically used after nasal reconstruction for refining scars
  - Best for thick sebaceous skin
Primary closure

- Little redundant skin on nose
- May produce alar or tip distortions
Full Thickness Skin Graft

- Usually not STSG due to contraction
- Need intact support
- Use like tissue
- Best on younger patients with thin skin
- Nasal sidewall subunit
Full Thickness Skin Graft
Composite Grafts

- Usually for alar rim or columella
- Less than 2.0 cm
Local Flaps

- Most favorable due to like texture, color, and thickness
- Minimal donor morbidity
- Numerous options
  - Bilobed
  - Rhomboid
  - Nasolabial
  - Island Pedicle
  - Dorsal Nasal
  - Glabellar
  - Midforehead
Bilobed Flap

- Most common nasal local flap
- Double transposition flap
- Original description
  - 90 degree arcs
  - final 180 degree arc
- Arcs of 90 to 110 degrees preferable
  - Remove Burrow’s from point of rotation
- Little distortion of alar rim
- Best for defects <1.5 cm in lower third of nose
Bilobed Flap
Bilobed Flap
Bilobed Flap
Bilobed Flap
Bilobed Flap
Nasolabial Flap

- Axial pattern - angular artery
- Inferior and superior flaps
- Useful for alar or tip defects/deep central or lateral nasal defects
- Potential ectropion in superior aspect of nose, scleral show
- Trap door deformity, pin cushioning, blunting of nasofacial sulcus
Nasolabial flap

A. Undermine

B. Standing Cutaneous Deformity Excised

Closure in Melolabial Sulcus
Nasolabial Flap
Nasolabial Flap
Nasolabial Flap
Nasolabial Flap
Nasolabial Flap
Dorsal Nasal Flap

- Rieger first to describe true rotation style dorsal nasal flap
- Single stage with good color and texture match
- Able to hide scar
Dorsal Nasal Flap
Dorsal Nasal Flap
Dorsal Nasal Flap
Glabellar Flap
Glabellar Flap
Glabellar Flap
Glabellar Flap
Midforehead Flap

- First described over 2000 years ago
  - Indian rhinoplasty
- Median, paramedian forehead flaps
- Axial pattern
  - supratrochlear artery - at medial brow, 2 cm from midline, thin distal tip, thin pedicle
  - Used for large defects of nose or tip, missing support structures, prior irradiation
- Disadvantages
  - long scar, limited length, revision
Midforehead Flap

SUPRATROCHLEAR A.
SUPRAORBITAL A.
SUPERFICIAL TEMPORAL A.
DORSAL NASAL A.
Paramedian Forehead Flap
Paramedian Forehead Flap
Paramedian Forehead Flap
Paramedian Forehead Flap
Nasal Lining Flaps
Complications

- Flap necrosis
- Infection
- Hematoma/Seroma
- Wound dehiscence
- Flap design problems
  - Aesthetic units
  - Trapdoor deformity
Complications
Complications
Complications
Complications
Complications