RECONSTRUCTION OF SMALL(-ISH) NASAL DEFECTS

Scott Stephan MD
Facial Plastic Surgery
Department of Otolaryngology Head & Neck Surgery
VANDERBILT UNIVERSITY MEDICAL CENTER
No financial or commercial disclosures

Vanderbilt University Medical Center

Thank you Dr. Russell Ries!
Nashville, TENNESSEE
MUSIC CITY USA
Identify the problem(s)
- Location
- Depth
- Size
- Cartilage?
- Scars?

Assess your resources
- Tissue reservoirs
- Skin distensibility
  - Tip ptosis
  - Size of nose

Recognize the dangers
- Alar retraction
- Pre-existent asymmetry
  - Tip twisting
  - Eyelid tethering
  - Nasal obstruction

Tailor your solution
Fill the hole ... elegantly

**Resurfacing grafts +/- volume**
- Skin grafts
- Perichondrocutaneous
- Composite
- FTSG + Integra
- Delayed skin graft volumization

**Local flaps**
- Advancements
- Bilobed
- Reiger
- V-Y
- Banner (note)
- O-T

**Geometric rearrangements of tissue (+/- support)**
SECONDARY INTENTION

0.9 x 0.8 cm

18 months
SKIN GRAFT

0.9 x 0.9 cm

Shallow
Nasal skin strength?
Augmented Skin Grafts

- **ISSUES**
  - **Defect depth**
    - Depression with FTSG
  - **Close to rim**
    - Rim retraction with wound healing, pull of local flap
  - **Young patient**
    - limited malleability for local flap
    - Less tolerance for scars
    - May have future cancers

- **OPTION**→ perichondrocutaneous graft from ear
  - Re-vascularizes very well
  - Can place thicker graft than typical skin graft
  - Resists contracture better than FTSG
  - Avoids issues with local flap
Case #1

8 months post-op
Case #2

6 months post-op
Subtotal nasal tip
1 week post op

Peri-chondrocutaneous Graft

5 years post-op
Composite Graft
--ear cartilage + skin--
Composite Graft
--ear cartilage + skin--

PRE-OP

9 months
AUGMENTED SKIN GRAFTING FOR
EXTERNAL RESURFACING

• No vascularized wound bed to support skin graft
• Deep defects
• Too large for local flap
• But no need for structural grafting
BUT NOT EVERYONE IS UP FOR A FOREHEAD FLAP

INTEGRA dermal matrix followed by delayed FTSG on top
INTEGRA DERMAL MATRIX

- Dermal substitute used for hostile wound beds
  - Burns, exposed bone/tendon

- Thick underlayer made of bovie collagen layered with glycosaminoglycan made from shark cartilage

- Designed as 2 stage procedure
  - Apply INTEGRA
  - 3 wks later → apply STSG
INTEGRA OVER BARE NASAL BONE

3 weeks

8 months Post-OP
LOCAL TISSUE TRANSFER
WHERE ARE THE TISSUE RESERVOIRS OF THE NOSE?

++ Skin excess
Little flexibility

No excess
Poor distensibility

Nasal Reservoir

Cheek and glabellar reservoirs

Nasal Reservoir
RESERVOIR OF THE NOSE
BILAT ADVANCEMENT FLAP SUPRATIP
EAST WEST ... WITH A LITTLE DIP

1.0 x 0.8cm

Supratip notch

Supratip flattening
WEST, THEN EAST-WEST ...

PRE-OP

6 months
WEST, THEN
EAST-WEST ...
V-Y FLAPS

8 months
SMALL V-Y FLAPS
DOUBLE V-Y + BANNER FLAP

12 months
BILOBED FLAP

Nearly equal primary lobe to defect.

Deep release at pivot point.

Trade non-subunit scars for superior vector of recruitment/tension.
Medially based bilobe for lateral ala

0.7x1.0cm w/in 3mm rim and 4mm of groove
EAST WEST INTRO
LAT BILOBE FLAP THAT COULD EASILY BE EAST-WEST NOW
BILOBED FLAP + EAR CART

1.7x1.2cm, down to rim
ADD ear cartilage rim graft
Laterally based bilobed flap

6 months
MEDIAL BILobe EAR CARTILAGE

2.5x1.9 cm
Nose & face

9 months
REIGER FLAP

4 YEARS
REIGER FLAP

PRE-OP

12 months
IMPROVED ALAR RETRACTION WITH TIME
BILOBE OVER PEAK –ALAR RETRACTION

Pre-OP

8 months
1. **Fill the hole:**
   “Augmented” skin graft techniques can be useful for resurfacing deep, devascularized or structurally weak areas
   - Perichondrocutaneous
   - Composite
   - Delayed grafting
     - Integra $\rightarrow$ FTSG
     - FTSG $\rightarrow$ cartilage augmentation

2. **Geometric rearrangements:**
   Design flaps based on maximal tissue reservoirs
   $\rightarrow$ even at expense of non-subunit scars
   Know your pivot points, areas of maximal tension