Analyzing your approach to revision rhinoplasty

P. Daniel Knott, MD FACS
Director, Division of Facial Plastic and Reconstructive Surgery
Department of Otolaryngology/Head and Neck Surgery
UCSF Medical Center

Overview

• Nasal analysis
• Skin-soft tissue envelope
• Structural support
• Tip techniques
• Midvault techniques
• Camouflage

Consultation

• Once bitten twice shy
• Make sure the patient has realistic concerns and goals
• China Shop Analogy “You break it, it’s yours”
• Image-modification software facilitates union of expectations and likely outcomes

Happiness = Patient Expectations – Surgical Result

Approach

• Analyze the nose as in primary rhinoplasty
• Several notable exceptions
  o Greater scarring and retraction leads to need for greater structural support
  o Thinning of the skin leads to greater risk of asymmetries
  o Likely need for cartilage in addition to septum
    • Consent for rib and auricular cartilage harvest

Combination of a structurally sound nasal osteocartilaginous skeleton and conforming skin-soft tissue envelope that permits tip definition yet hides minute irregularities

Under-promise and over-deliver
Nasal Analysis

Surgical Approach

- Most complications can be traced to 2 major problems
  - Over resection of the nasal skeleton
  - Failure to maintain or reconstruct adequate nasal structure

- A well shaped structure will “guide” the overlying S-STE to the appropriate contour and resist forces of scar contracture

- Revision rhinoplasty relies on the combination of strength and disguise

Common Problems

- Endonasal Rhinoplasty
  - Synechial banding/valve scarring
  - Cartilaginous pollybeak
  - Dome asymmetries
  - Dorsum/Tip irreconciliable differences
  - Hanging infratip lobule
Common Problems

- Open Rhinoplasty
  - Over/under rotation
  - Tip irregularities
  - Incomplete osteotomies
  - Overly pinched tips
  - Pollybeak
  - Alar asymmetries

- Septoplasty
  - Perforations
  - Saddle nose deformities
  - Caudal septal retrusion (Inadequate columellar show)
  - Inadequate tip support

Surgical Approach

- Endonasal approaches
  - Ideal for patients with subtle deformities
  - Minor revisions

- External rhinoplasty
  - Used for the majority of revision cases
  - Easiest when correcting endonasal complications
Structural Support

- Septum - Usually inadequate
- Auricular Cartilage - Less than ideal shape
- Costal cartilage
  - IHCC: Irradiated homograft costal cartilage
  - Autologous costal cartilage
  - Autologous osteochondral grafts
- PDS Plate

Auricular Cartilage Grafting

Rib Graft Harvest
• Cartilage Repair
  o L-Strut repair
    • Removal of cartilaginous septum
    • Leave several mm of dorsal strut for suture fixation
    • Recreation of dorsal and caudal L-strut
    • Fixation to remaining septum and anterior nasal spine

• Recreation of dorsal and caudal L-strut
  • Fixation to remaining septum and anterior nasal spine

“Over” engineer
“Over” lap to keystone and nasal spine
“Over” secure with medial crura
Tip Support

- Length and strength of medial crura
- Ligamentous attachments of the medial crura to the caudal septum
- Abutment of medial crura over the nasal spine
- Interdomal ligamentous sling over the anterior septal angle
- Height of the anterior septal angle

Tip Suture Technique

Inter-domal sutures
Avoid pinched tip

Tip Suturing Techniques

Tongue-in-groove Technique
Pinched Tip
- Encountered with vertical dome division and overly tightened domal sutures
- Treatment is lateral crural strut grafts and possible tip grafts

Hemidome Suture

Shield/Tip graft
Pollybeak

- Convexity of the nasal supratip
  - Projecting beyond the tip and the rest of the nose (parrot’s beak)

Cartilaginous Pollybeak

Management of Pollybeak

- Restore tip support and projection
- Revise the dorsum
- Resolve the dorsum/tip irreconciliable difference

Dorsum-Tip Relationship
Middle Vault Techniques

- Spreader graft
- Horizontal spreader graft
- Autospreader graft
- Butterfly graft
- Lateral balans

Avoidance of “Inverted V”

Spreader grafts
**Camouflage**
- Temporalis fascia
- Fascia Lata
- AlloDerm
- Dermal matrix

**My Approach**
- Open rhinoplasty
- Columellar strut
- Spreader grafts
- Tip suturing/grafts
- Costal/auricular cartilage grafts
- Fascia overlay

**Thank You**