

The Bilobed Flap Therapeutic Cheat Sheet

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BACKGROUND

- > Vascular Supply: random pattern
- > Movement Classification: double transposition flap with a single base
- > Original design by Esser (1918): 180 degree arc of rotation; produced noticeable tissue protrusion at pivot point, pincushioning, and trap-door phenomenon
- > Zitelli modification (1989): reduced arc of motion (90-110 degrees total) to prevent distortion with wound contracture

ADVANTAGES

- > Allows a broader arc of motion than a single transposition flap
- > Allows recruitment of donor sites with more laxity (i.e., upper nasal sidewall) that are further from primary defect
- > Distributes tension vectors over a larger surface area
- > Utilizes skin in close proximity to the defect with compatible tone and texture
- > Zitelli modification: reduces risk of standing cone deformity, pincushion deformity, and trap-door phenomenon

DISADVANTAGES

- > Limited arc of motion (90-110 degrees)
- > Pincushioning (see below)
- > Trap-door phenomenon
- > Potential for free margin (alar) distortion
- > Standing-cone (dog-ear) deformity
 - Over-correction may compromise vascular pedicle
 - Greater arc of movement = greater standing-cone deformity
- > Incision lines often do not fall within relaxed skin tensions lines and may cross cosmetic subunits

COMMON INDICATIONS

- > Lower 1/3 of the nose
 - Lateral tip, supra-tip, superior aspect of ala
 - Appropriate distance from alar free margin (~1 cm)
- > Large defects of the cheek
- > Helical rim defects – taking advantage of post-auricular laxity

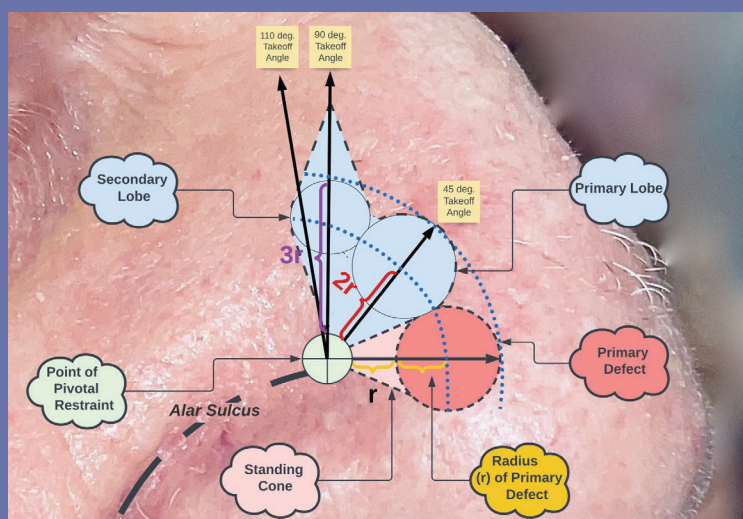
PLANE OF ELEVATION

- > Nasal:
 - Medial
 - Immediately above perichondrium
 - Immediately above periosteum
 - Avoids transection of external nasal artery & anterior ethmoidal nerve
 - Lateral
 - Sub-muscular (provides robust blood supply to lateral based pedicle)
- > Cheek:
 - Mid-subcutaneous plane
 - Avoids transection of the parotid gland, cranial nerve VII, and facial artery branches
- > **Note:** pin-cushioning results from a plate-like scar on the undersurface of the flap during the contraction phase of wound healing, thus broad undermining is recommended to prevent this occurrence

SIZE DETERMINATION

- > Primary lobe sizing depends on the skin laxity surrounding the primary defect
 - Distal nose: surrounding skin is inelastic and thus primary lobe must match size of defect
 - Cheek: first lobe can be up to 25% smaller than defect as surrounding skin has more laxity to advance locally
- > Secondary lobe sizing may be designed smaller than secondary defect
 - In general, secondary lobe is transposed to an area of more laxity than the primary defect
 - Therefore, it can be undersized (with local advancement of surrounding skin to assist with closure)

DESIGN



CRUCIAL ASPECTS OF CLOSURE

1. Flap is lifted and trimmed/thinned to match the counter of the primary defect as closely as possible
2. Close the secondary defect first, which allows the primary lobe to 'flop' into place with less tension
3. Close the primary defect by suturing in place the primary lobe
4. Remove the standing cone at the base of primary defect to prevent distortion. Use caution not to be over-zealous with the side of the standing cone, otherwise you risk compromising the vascular pedicle
5. Trim the secondary lobe in three dimensions to fit cohesively into the secondary defect

MODIFICATIONS

- > Trilobed design
- > Superiorly-based pedicle
- > Medially-based pedicle (alar defects)
- > Rhombic shaped lobes in repair of smaller defects
- > Cheek variant for larger defects with transposition of tissue from the infra-mandible and superior neck

REFERENCES

1. Zitelli JA. The bilobed flap for nasal reconstruction. Arch Dermatol. 1989;125(7):957-959.
2. Miller CJ. Design principles for transposition flaps: the rhombic (single-lobed), bilobed, and trilobed flaps. Dermatol Surg. 2014;40 Suppl 9:S43-S52.
3. Baker SR. Local Flaps in Facial Reconstruction. Philadelphia: Elsevier; 2014.