Unilateral Cleft Lip Repair
Anatomic Subunit Approach

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Toronto, Canada
Goals of Unilateral Cleft Lip Repair

• Symmetric Lip Length
• Level Cupid’s Bow
• Adequate Vermilion Thickness
• Inconspicuous Scar
• Restore Muscle Continuity
• Address Nasal Deformity
Historical Background
ROSE-THOMPSON EFFECT

W. ROSE

*On Harelip and Cleft Palate.* London: HK Lewis, 1891

J.E. THOMPSON

An artistic and mathematically accurate method of repairing the defect in cases of harelip.

*Surg Gynaecol Obstet* 14: 498, 1912

Picture from Patel P.K, *Unilateral Cleft Lip Repair Treatment & Management*
http://emedicine.medscape.com/article/1279641-treatment#a1133

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THE REPAIR OF THE UNILATERAL CLEFT LIP BY THE STENCIL METHOD

C. TENNISON

San Antonio, Texas

Plast Reconstr Surg 9: 115, 1952
A TRIANGULAR FLAP OPERATION FOR THE PRIMARY REPAIR OF UNILATERAL CLEFTS OF THE LIP

P. RANDALL

Philadelphia, Pennsylvania

Plast Reconstr Surg 23: 331, 1959
COMPLETE UNILATERAL CLEFTS OF THE LIP

D. RALPH MILLARD

Miami, Florida


ROTATION-ADVANCEMENT MODIFICATIONS


ROTATION-ADVANCEMENT MODIFICATIONS


UNILATERAL CLEFT LIP REPAIR

L.R. MOHLER

Columbus, Ohio

Plast Reconstr Surg, Vol 80(4): 1960,
UNILATERAL CLEFT LIP REPAIR

M.S. NOORDHOFF

Taipei, Taiwan

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QUADRILATERAL MIRAULT FLAP OPERATION

A.B. LE MESURIER

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UNILATERAL CLEFT LIP REPAIR

H.G. THOMSON

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\[ a \geq b + c \]
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a ≥ b + c
THE SUBUNIT PRINCIPLE IN NASAL RECONSTRUCTION

G.C. BURGET, F.J. MENICK

Chicago, Illinois & Tuscon, Arizona

Plast Reconstr Surg 76: 239, 1985
Ideal Line of Repair

- Ascends from cleft side of cupid’s bow
- Mirrors the non-cleft-side philtral column
- Reaches base of the nose
- Continues superolaterally
- Borders lip-columellar crease, ascending to the nostril sill
Ideal Line of Repair

- Ascends from cleft side of cupid’s bow
- Mirrors the non-cleft-side philtral column
- Reaches base of the nose
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- Borders lip-columellar crease, ascending to the nostril sill
UNILATERAL CLEFT LIP REPAIR:
AN ANATOMICAL SUBUNIT APPROXIMATION TECHNIQUE

DAVID M. FISHER

Toronto, Canada

Plast Reconstr Surg 116: 61, 2005
UNILATERAL CLEFT LIP REPAIR: AN ANATOMICAL SUBUNIT APPROXIMATION TECHNIQUE

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Lesser Lip Height (Base width of inferior triangle)
Lesser Lip Height (Base width of inferior triangle) = Total Lip Height – Greater Lip Height – 1mm
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Lesser Lip Height (Base width of inferior triangle)

= Total Lip Height – Greater Lip Height – 1mm
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Lesser Lip Height (Base width of inferior triangle)

= Total Lip Height – Greater Lip Height – 1mm
Modifications


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Modifications

Base width of Inferior Triangle:
\[ \mu = 1.24\text{mm} \ (0 \text{ -- } 2\text{mm}) \]

Protocol (Sickkids)

- Presurgical NAM
- Lip Repair/ Rhinoplasty
- Palatoplasty ± M&T
- ± Lip Revision
- ± VPI Correction
- ± Lobule Rhinoplasty
- Alveolar Bone Graft
- ± Septorhinoplasty
- ±Orthognathic Surgery

- 2 weeks – Lip Repair
- 3 – 5 months
- 11 – 14 months
- > 3 years prn
- > 4 years prn
- > 6 years prn
- 8 – 12 years
- > 12 years prn
- Skeletal Maturity prn
Primary Rhinoplasty

- Conservative...Goal = Improvement
  - Centralization of columellar base
  - Symmetrical alar base repositioning
  - Nostril margins of equal circumference
  - Release LLC-ACC from piriform
  - Anteromedial advancement of cleft-side lateral crus
  - Creation of ULC-LLC overlap
  - No dissection of dome
Conclusions

• Reliable
  – Based on previously described repairs and principles
• Rose-Thomson lengthening allows for a smaller triangle
• Triangle positioned according to Noordhoff’s description
• Repair along lines of anatomical subunits
• Conservative approach to the nose