

Designing the Prolabial Flap in Revisional Bilateral Cleft Lip Surgery: Clinical and Quantitative Analysis of Post-Operative Widening

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Background

After primary bilateral cleft lip repair, the prolabial segment widens and lengthens significantly over time. This growth is accounted for in contemporary preoperative planning (e.g. Millard, Noordhof, Mulliken repairs). However, prolabial design strategies in secondary bilateral total cleft lip revisions have not been well-defined in the literature or textbooks.

Aim

The aim of this study is to present a consecutive series of patients who underwent secondary total bilateral cleft lip revision and quantify and characterize the post-operative prolabial changes with follow-up of at least 2 years.

Methods

- 19 consecutive patients identified retrospectively
- All patients were examined, measured, and photographed preop, intraop, and postop at 1 month, 3 months, 6 months, 1year and then yearly
- Measurements of prolabial width were taken cephalically at the columellar-labial junction
- Caudal measurements were taken transversely from Cupid's Peak to Cupid's Peak

Surgical Technical Aspects

- Prolabial segment designed narrowly
- Wider caudally than Cephalically
- The central muscle/mucosa comes from the lateral segments

Results

- Mean age at time of revision was 10 yrs (range 3-18)
- 4/19 patients were syndromic
- The main indication for revision was whistle-tip deformities
- No complications were noted

Post-op Philtral Widening

As compared to immediate post-op result

	Cephalic	Caudal
1 month	20%	23%
3 months	35%	37%
6 months	44%	44%
1 year	40%	41%
2 years	41%	48%

Conclusions

In secondary bilateral cleft lip revision, the prolabial segment widens significantly (mean 44%) in the first 6 months postoperatively and then stabilizes. As in primary repair, this widening should be considered when designing the revisional prolabial flap

Patient Example



Pre-op Intra-op Markings Immediate Post Op



3 Months 6 Months Post-op



1 year 2 Years Post-op