

Mastering The Art Of Symmetry: Myomucosal Advancement Flap Commissuroplasty Outcomes In Patients With Tessier 7 Cleft

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Introduction

- The **Tessier No. 7 cleft**, or transverse facial cleft, is a rare congenital anomaly involving the oral commissure.
- Restoring facial symmetry in these patients is particularly challenging.
- Commissuroplasty outcomes vary significantly, and standardized data on optimal reconstructive techniques remain limited due to the rarity of the condition.
- Facial **anthropometric analysis** may provide a reproducible way to assess symmetry after surgery.

Objective

To evaluate postoperative facial symmetry following myomucosal advancement flap commissuroplasty in patients with Tessier 7 cleft, using standardized anthropometric measurements over an 19-year period.

Methods

- Retrospective review** at a tertiary children's hospital in Design: Retrospective review (2005–2024)
- Population: patients <18 yo. undergoing commissuroplasty for Tessier 7 cleft
- Surgical procedure as in **Figure 1**.
- Anthropometric Measurements performed with ImageJ
- (Pre/Postoperative photographs in repose position
- Sto-Ch, -Ala, Ch-LC, Ch-Men, Chelion angle deviation (Ang-Dev) as seen in **Figure 2**.

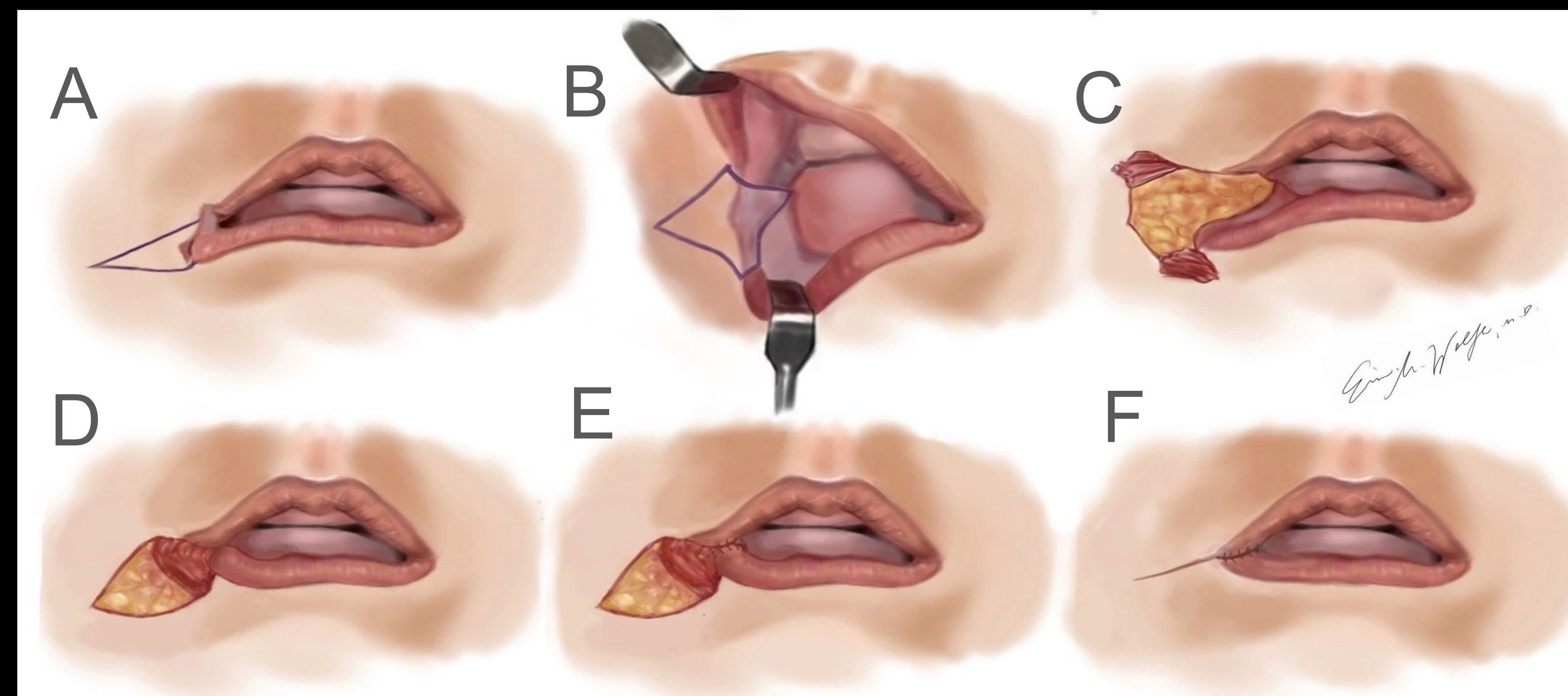


Figure 1. Myomucosal Flap Advancement with 3-Layer Straight-Line Repair. (A) The neocommissure is marked for symmetry. (B) The defect is excised along marked lines. (C) The orbicularis oris muscle is exposed via a myomucosal flap. (D) Muscle is realigned and the flap advanced to the neocommissure, with interrupted absorbable sutures. (E) Mucosal edges are approximated. (F) Skin is closed with precise alignment at the wet-dry junction to preserve lip contour and function.

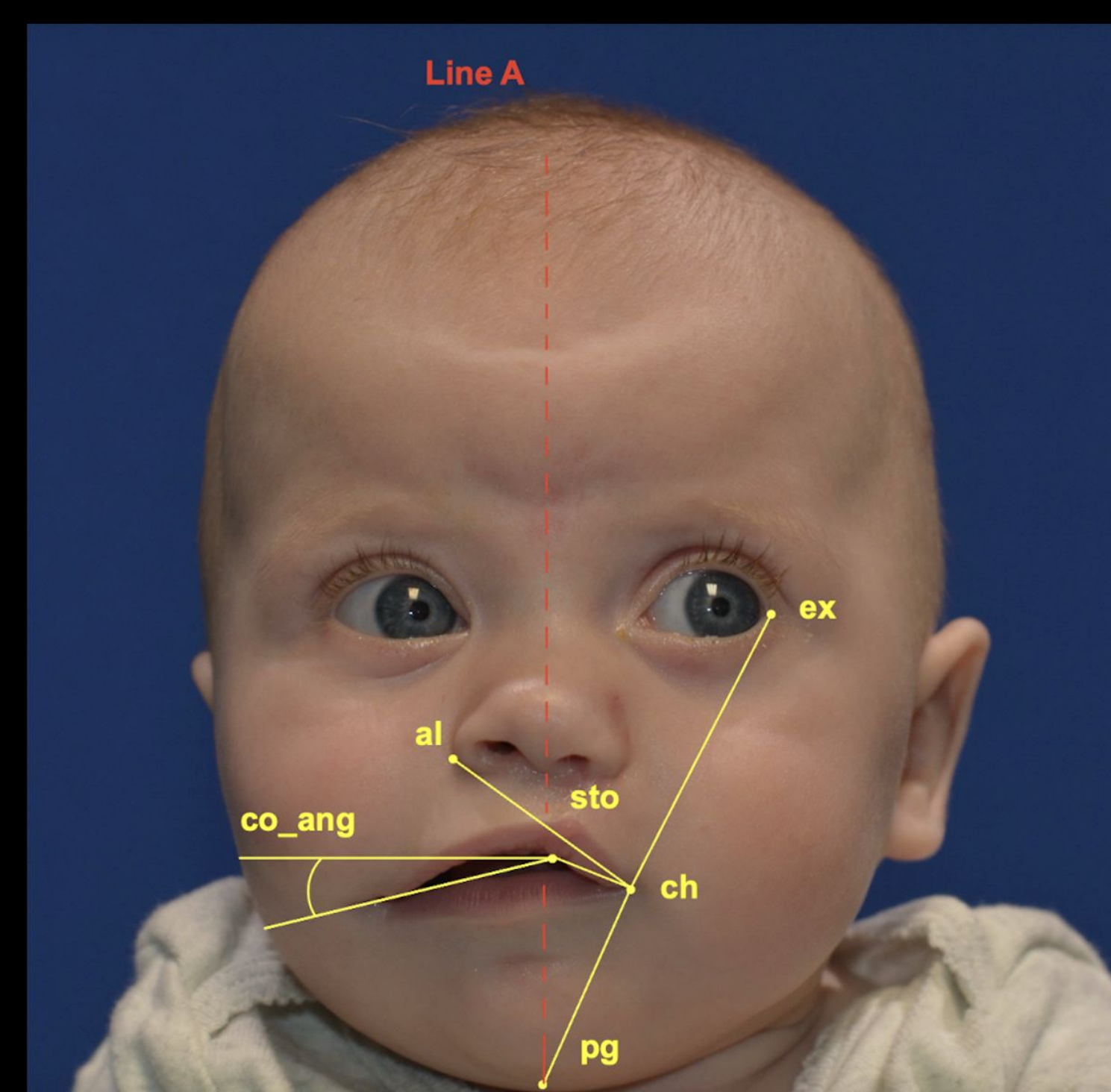


Figure 2. Anthropometric Measurements

Measurement	Preoperative SR	Postoperative SR	p - value	% Improvement	ABS % Deviation from Symmetry
st_ch	0.73	0.89	<0.001*	21.9%	11%
ch_al	0.84	0.92	<0.001*	9.5%	8%
ch_ex	0.88	0.94	0.002*	6.8%	6%
ch_pg	0.86	0.93	<0.001*	9.3%	7%
co_ang	0.51	0.61	0.139	19.6%	39%
Overall	0.76	0.86	<0.001*	10.1%	14%

Table 1. Preoperative and Postoperative Symmetry Ratios

Results

- Median Age at Surgery:** 8.1 months (IQR: 4.5–12.7)
- Median Follow-up Duration:** 3.3 years (IQR: 0.2–8.6)
- Major Revisions:** 28% (n=9) of patients required repeat commissuroplasty for scar excision (n=5) or asymmetry (n=4).

Improved Postoperative Symmetry:

Significant improvement in 4 of 5 regions: **Sto-Ch, Ch-Ala, Ch-LC, Ch-Men (Table 1)**. **No significant improvement in chelion angle deviation**

Symmetry Over Time:

In 7 patients with long-term follow-up (mean 3.74 ± 6.5 years), symmetry ratios remained stable postoperatively at 1-year and 5-year follow-up.

Conclusion

- Myomucosal advancement flap commissuroplasty is a **reliable technique** for restoring oral commissure symmetry in Tessier No. 7 clefts.
- Patients maintained stable, improved symmetry over both short- and long-term follow-up.
- Revisions were infrequent, with no recurrence of deformity or major complications observed.