Lengthening Temporalis Myoplasty for Single Stage Smile Reconstruction in Children with Facial Paralysis

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Abstract

Background: Free muscle transfer for dynamic smile reanimation in facial paralysis is associated with excessive cheek bulk, asymmetric excursion vector, and asymmetric nasolabial folds. In addition, bilateral reconstruction is challenging. Postoperative ICU admission is common, with hospital stays typically between 5 and 7 days. Prolonged operative times, longer hospital stays, and longer time to animation are associated with free flap options. Lengthening temporalis myoplasty (LTM) provides one-stage dynamic smile reanimation with equivalent results to free tissue transfer and fewer secondary deformities.

Methods: From 2012 to 2013, 15 lengthening temporalis myoplasties were performed in 11 children for smile reconstruction. A retrospective chart review was completed to determine diagnosis, laterality, and ancillary procedures performed. Patient and operative variables collected included age, sex, operative times, length of hospital stay, and perioperative complications.

Results: A total of 11 consecutive patients with facial paralysis were included. Four patients underwent single-stage bilateral reconstruction, and 7 underwent unilateral procedures. Diagnoses included 4 patients with Moebius syndrome, 4 with posterior cranial fossa tumors, 2 post-traumatic, 1 with hemifacial microsomia, and 1 idiopathic. Average patient age was 10.2 years. Average operative time was 415 minutes (500 minutes for bilateral LTM and 359 for unilateral LTM). Average length of stay was 4 days (4.75 days for bilateral LTM, 3.5 for unilateral LTM). No patients required postoperative intensive care unit admission. Three patients required minor revision of the temporalis tendon insertion site at the oral commissure. Two patients required blood transfusion during the perioperative period. One patient developed a postoperative infection requiring incision and drainage. No patients demonstrated excessive cheek bulk or temporal hollowing. All patients had formation of a nasolabial fold and demonstrated varying degrees of postoperative lip excursion at their initial 2-week follow-up appointment. Facial therapy was started 3 weeks postop, with continuing gains in oral commissure excursion through 3 months postop (Figures 1 and 2).

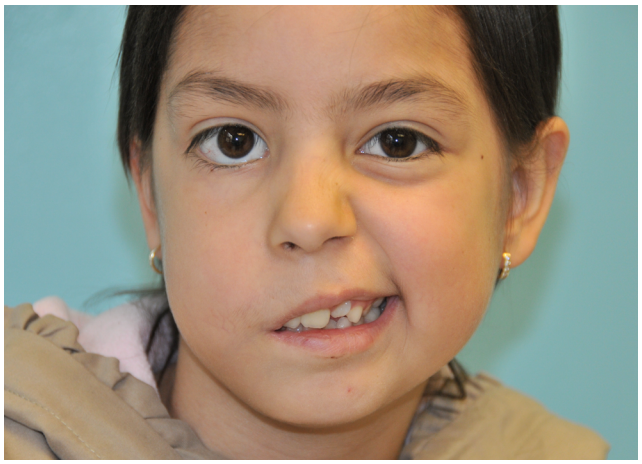

Figure 1. Preoperative unilateral facial paralysis.

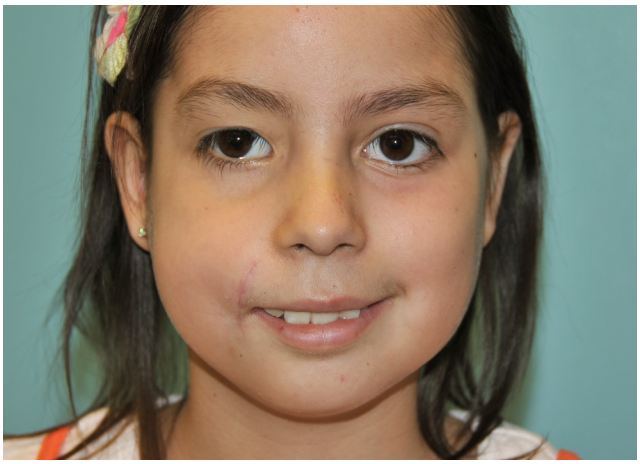

Figure 2. Three month postoperative with animation.

Conclusions: Lengthening temporalis myoplasty is a safe alternative to free tissue transfer for dynamic smile reconstruction in children with facial paralysis. Limited donor site morbidity, shorter operative times, avoidance of postop ICU admission, and shorter hospital stays are some of the benefits of LTM over free flap options.

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