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Lengthening temporalis myoplasty and facial paralysis from birth



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KEYWORDS

Facial paralysis;
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Summary *Introduction:* Congenital facial paralysis (FP) is present from birth. It can produce major esthetic and functional disorders. It can be from two different etiologies: developmental and acquired. There is no curative treatment for congenital FP and the aim for the plastic surgeon is to restore a smile as symmetrical and as dynamic as possible. For this, two opposite techniques can be used: muscular free flaps and locoregional flaps whose lengthening temporalis myoplasty.

Materiel and methods: We report our series of 34 congenital FP patients who were operated by lengthening temporalis myoplasty (LTM). We divided the patients into three categories: acquired FP (11 cases), isolated developmental FP (13 cases), and syndromic developmental FP (10 cases). The evaluation of the smile is based on the quality of the commissural course compared to the healthy side and the spontaneity of it.

Results: In the acquired FP group, 100% obtained a spontaneous smile with a postoperative delay of 9.5 months, 12 of the 13 cases of isolated developmental FP (92.7%) after 7.3 months postoperatively, and finally, in the 10 cases of syndromic FP, nine (90%) had a spontaneous smile after 9.7 months.

Discussion: Muscular free flaps continue to be the gold standard for the reanimation of smile on the FP. To our knowledge, no articles comparing smile restoration using free flap and smile restoration using LTM exist. A comparison of the success rates from different studies shows that both these techniques yield good results and can be used for smile restoration in FP. This technique is faster and easier than a free flap and has a same result, which is why we consider this technique as a reference on smile reanimation in FP.

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Introduction

The facial nerve innervates the facial muscles and is responsible for facial expressions, including smiling in particular. Children with congenital facial paralysis (FP) grow up with this malformation and may be affected by its psychological and social repercussions during childhood and puberty. Congenital FP has two different causes.

Developmental FP is caused by an adverse event occurring during embryogenesis, between weeks 3 and 5 of amenorrhea. It may be isolated or can occur as part of a syndrome, such as CHARGE syndrome or first-arch syndromes, which include Moebius syndrome, branchiootorenal (BOR) syndrome, and otomandibular dysplasia.

Acquired or posttraumatic FP is due to trauma during labor. The underlying mechanism is direct trauma to the facial nerve, with compression of the mastoid region, or stretching of the soft tissue opposite the stylomastoid foramen.

There is no curative treatment for congenital FP, and palliative treatments aim to restore as symmetric and dynamic a smile as possible. Two opposing techniques are used to achieve this end: the use of free flaps and the use of locoregional flaps, including lengthening temporalis

myoplasty (LTM) by the Labbé technique¹ (Figure 1). In this study, we evaluated the results obtained, in terms of smile restoration, with LMT in patients with congenital FP. We compared the efficacy of LTM and free muscle transfers and considered the drawbacks of each technique.

Materials and methods

Thirty-four patients with congenital FP underwent surgery at the Maxillofacial Surgery Department of Caen University Hospital. All interventions were carried out by the same author (DL). These 34 patients were assigned to three groups: patients with posttraumatic FP (11 cases), patients with isolated developmental FP (13 cases), and patients with syndromic developmental FP (10 cases).

In the posttraumatic FP group, the sex ratio was 0.375 (three men and eight women). Mean age at surgery was 27.2 years (range: 7–57 years), and all patients underwent LTM. The median age of the patients at the time of surgery was 19 years. Four patients had FP on the left side. The other seven patients had FP on the right side.

Other procedures were also carried out during surgery: asymmetric external blepharorrhaphy (two cases),



Figure 1 Major steps in LTM. A. Detachment of the temporal muscle in its entirety, with preservation of the deep temporal pedicles. B. After coronoidectomy and the freeing of the tendon, the key points on the temporal tendon are set. C. Establishment of three key points on the labial commissure and the testing of these points. D. Reintegration of the temporalis muscle into its temporal fossa, using the posterior half of the muscle.

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