



Neurotized Platysma Graft: A Review of Proposed New Techniques for Functional Reanimation of the Eye Sphincter in Longstanding Facial Paralysis

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Editorial

We read with interest the publication by Telich-Tarriba et al. [1] which built on the ideas previously published by Nassif et al. [2] regarding functional periorbital reanimation in facial palsy patients. We agree with both teams that a more comprehensive analysis of this important issue is necessary, and we commend the authors for their proposed innovative solutions using the Omohyoid Graft (OG) and the Platysma Graft (PG), respectively. Having said this, we would like to raise the following concerns about their proposed methods.

One of the most critical and essential components of successful facial reanimation is the return of the Spontaneous Blink Reflex (SBR) as this protects the eye from keratopathy, corneal abrasions, ulcers and ultimately vision loss. However, reports from the above-mentioned studies have either had limited success with SBR restoration [2] or have only reported functional reanimation of the Eye Sphincter (ES) described as “good muscle contraction” at 6 months [1]. In prior reports by Terzis et al. [3] and Guelnick et al. [4], SBR has been successfully restored with free platysma muscle flap and nerve coaptation (62% to 100%). The platysma is very thin, has a high density of fast twitch muscle fibers (87% type II) and shares the same embryological origin as the Orbicularis Oculi (OO) [5]. Therefore, it is an ideal candidate in the replacement of this muscle for reanimation of the ES. Due to the complex microsurgical technique required for this method, we understand why other groups have sought simpler solutions such as use of a muscle graft and direct neurotization. However, with an SBR seen in only one patient (3%) reported by Nassif et al. [2] and inconsistent results published by Biglioti et al. [6] (complete voluntary closure achieved by only one (7%) patient); we question whether the combination of grafting and direct neurotization really works. We also wonder why Telich-Tarriba et al. [1] has proposed use of the omohyoid muscle graft (less than 75% type II muscle fibers) when the platysma is already recognized as an excellent choice.

Although the reported findings are preliminary, however, we would like to know whether a standardized score was used to qualify the results and if so, did the team evaluate SBR in their patients [1]. By only mentioning a measure of muscle contraction after donor nerve activation, conclusions are only warranted regarding a less important measure of functional reanimation of the ES (muscle contraction). Use of the Terzis grading scale would be beneficial to allow for comparison across methods. Also, we wondered if there was any assessment of the severity of pre-operative facial paralysis and if so, how did results relate to varied initial presentation. In addition, as with the publication by Nassif et al. [2], we ask for further clarification as to whether there was return of native OO muscle function from direct neurorrhaphy or if the observed function was from the OG.

The methods proposed by Telich-Tarriba et al. [1] using the OG and direct neurorrhaphy and those suggested by Nassif et al. [2] and Biglioti et al. [6] have value in their simplicity in ES reanimation, but they overlook restoration of the SBR which has successfully been achieved by Terzis et al. [3] and Guelnick et al. [4] using free muscle transfer and nerve coaptation. If use of the OG and direct neuronopathy cannot achieve SBR, other approaches should be prioritized.

Keywords: Platysma free graft; Facial paralysis; Functional reanimation; Neurotized; Eye sphincter; Omohyoid.

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