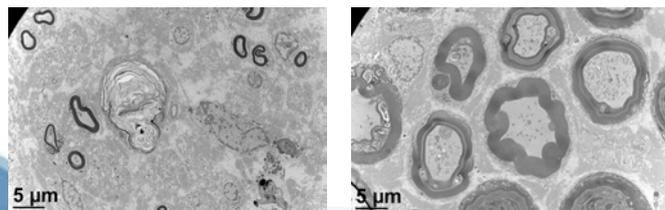


Is the function of the donor nerve in facial reanimation more important than the axonal load?

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Introduction

- The gold-standard treatment for re-animating the paralysed face is a two stage procedure consisting of a cross-facial nerve graft and subsequent functional muscle transfer
- This procedure allows for the restoration of a spontaneous symmetrical smile
- Only 60% of patients obtain an excellent outcome
- We report the findings from a sequential series of 25 facial reanimation patients, coupling the clinical findings with histomorphological data.



Methods

- 15 patients underwent a two-stage procedure
 - Biopsies taken from the contralateral donor buccal nerve, sural nerve, cross-facial nerve graft, and recipient lateral-pectoral nerve from the pectoralis minor muscle
- 10 patients underwent a single stage procedure obviating the need for a cross-facial nerve graft
 - Biopsies were taken from the donor masseteric nerve and the recipient thoracodorsal nerve of the latissimus dorsi muscle
- Patients were evaluated using the eFACE tool and Harrison clinical outcome score
- Minimum two year follow-up

Results

- Two-stage group:
 - Average eFACE score improved from 44 (32 – 56) to 78 (63 – 97)
 - 64% had excellent outcomes
 - 58% of axons regenerated
 - Patients with a higher graft axonal count had significantly improved eFACE scores (p=0.03)
- In the one-stage group:
 - Average eFACE score improved from 41 (36 – 56) to 78 (61 – 88)
 - The masseteric (MN) donor count was significantly higher than the buccal nerve (BN) (MN 378, BN 243, p<0.05) despite the clinical outcome scores being lower than the two-stage group

	One-Stage		Two-Stage
Age ¹	8.24 (5.6-34.3)	Age ¹	7.34 (5.2-24.4)
Gender	4F:6M	Gender	6F:8M
Donor AC	378 (SD)	Donor AC	243 (SD)
eFACE Pre	41 (36-56)	eFACE Pre	44 (32-56)
eFACE Post	78 (61-88)	eFACE Post	78 (63-97)

¹ Age at functional muscle transfer



Conclusions

- The function of the donor nerve is more important than the axonal load re-innervating a transplanted muscle for improved clinical outcomes
- A two-stage approach using the buccal donor nerve is preferred