

# The Importance of the Transverse Facial Artery As Landmark in the Identification of the Zygomatic Branch of the Facial Nerve in Facial Reanimation.

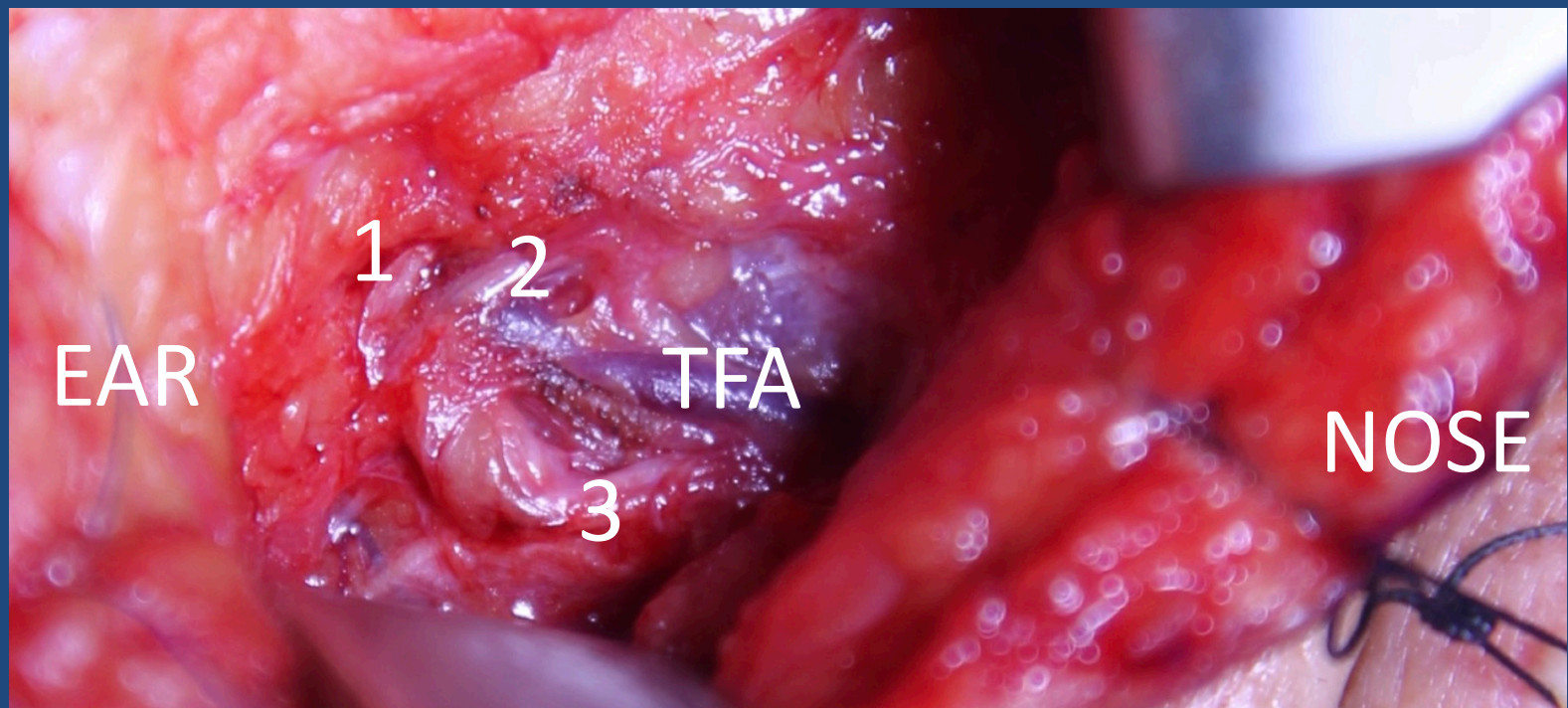
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- Disclosure: Nothing to disclose.

Since our initial case report (*Bermudez L, Nieto L. Masseteric-Facial Nerve Anastomosis: Case Report J Reconstr Microsurg 2004; 20: 25-30.*) I had concerns going back to the already operated area to perform the second stage to gain symmetry and involuntary movements.

In the nonfunctional nerve, electrical stimulation can't map the nerve; we would need to follow distally the nerves to find out their target muscle, which would create scar tissue increasing the difficulty of the second stage.

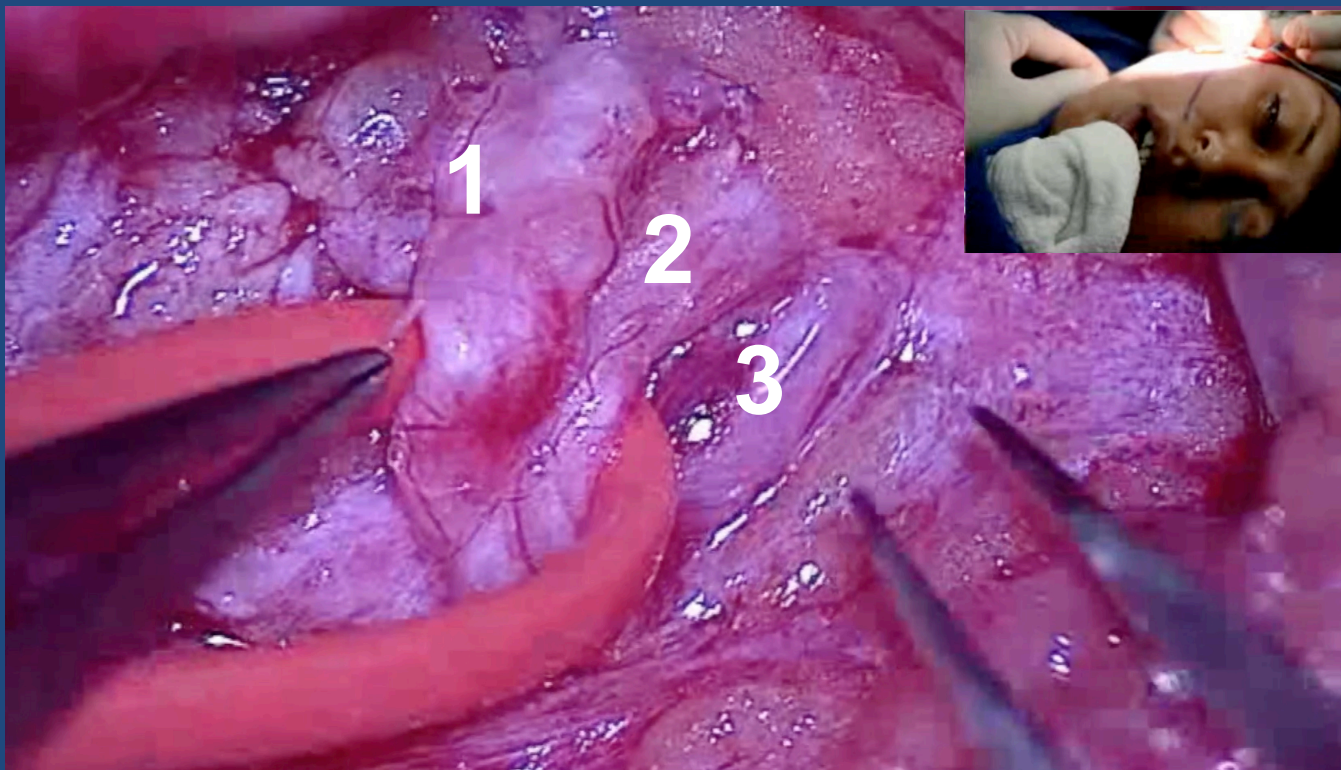


Minimal dissection is the key when when we are planning to perform a second stage. Attempts to perform a masseter to proximal anastomoses resulted in unacceptable mass movements.



Performing cross facial nerve grafts from the healthy nerve using nerve stimulation, we have learned that there is a close relationship between the transverse facial artery (TFA) and the branches of the facial nerve to the zygomatic muscles and lower eyelid (1,2,3).



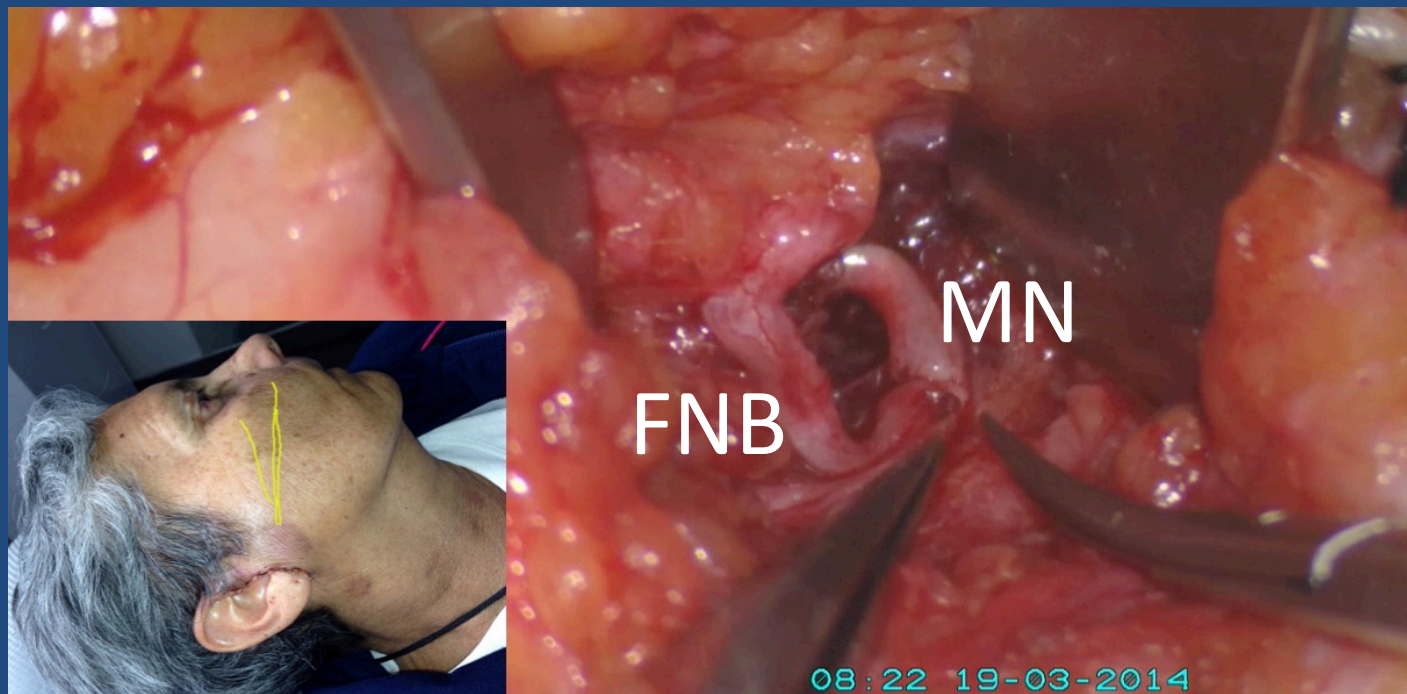


Identification by electrical stimulation of Zygomatic Branches (1, 2) in a healthy nerve and Transverse Facial Artery (3), 1 cm beyond the parotid gland 1 cm below zygomatic arch.



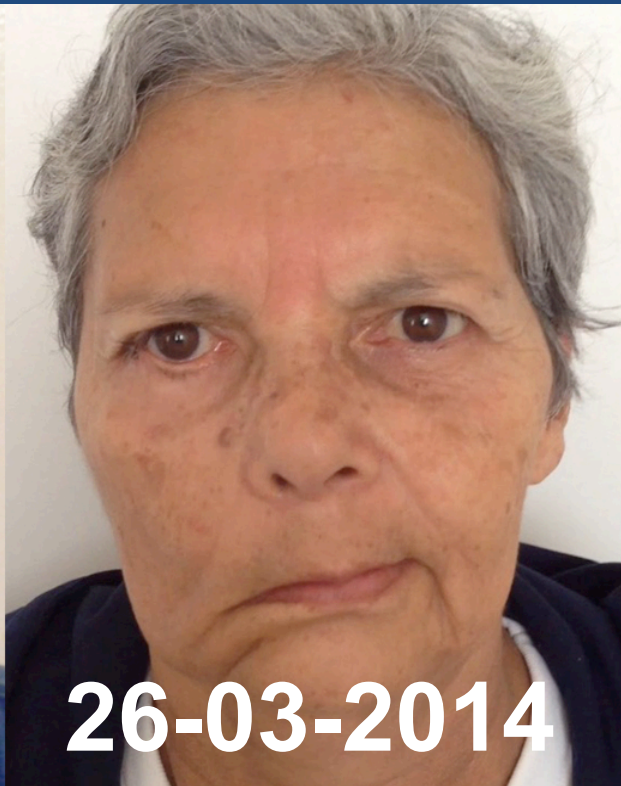
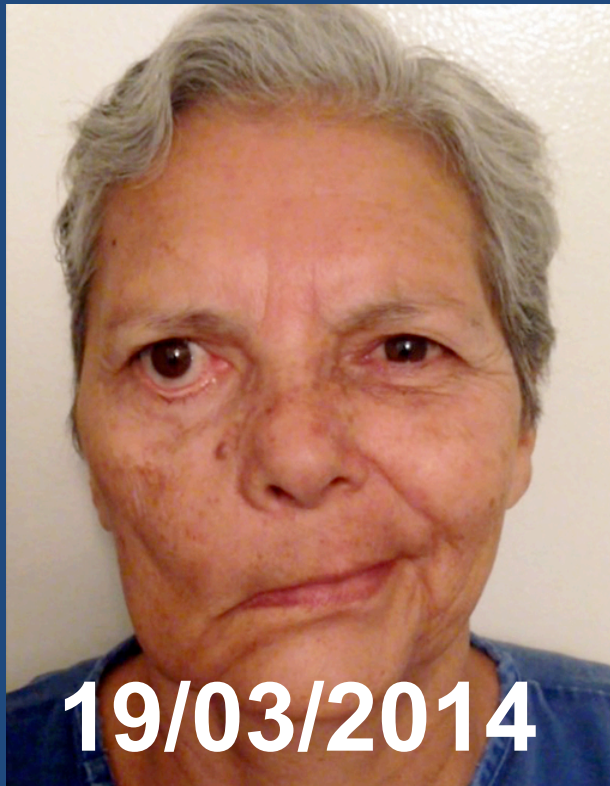
Our goal is to bring new axons to facial nerve branches innervating the zygomatic muscles (so as to restore smiling) and orbicularis oculi of the lower eyelid (to improve lower lid laxity). For the upper lid we use a gold weight (in case it is needed) .





Since 2009 I have standardized the technique, performing a minimal dissection 1 cm ahead of the anterior border of the parotid gland using the transverse facial artery as landmark to choose facial nerve branches (FNB) that will receive axons from the masseter nerve (MN).

Clinical evolution of Masseter to zygomatic  
branch transfer, and lateral tarsorrhaphy  
(19/03/2014). Before, 7 days after surgery and 4  
months after surgery





# Materials and Methods



Review of surgical outcomes using this technique in 35 patients operated from 2009 to 2017. Ten patients ( $> 60$  years) received just the masseter to facial nerve transfer and 25 patients ( $< 60$  years) masseter to facial and cross facial nerve grafts.

# Results



- Strong movement of the oral commissure elevators was obtained in all 35 patients.
- Improvement in the lower eyelid laxity was found in 28 patients, not related to the tarsorrhaphy.

- 14 out of the 25 patients scheduled for the second procedure decided to not undergo that additional surgery.
- 4 of the 10 patients with just masseter to facial transfer wished to have a second procedure to obtain an involuntary movement (CFNG).





- Lateral tarsorrhaphy was performed in 28 patients during the first stage.
- An upper eyelid gold weight was placed in 10 of the 35 patients.

# Conclusion

Consistently good outcomes restoring smiling and improvement of lower eyelid tone in patients with facial paralysis were achieved using the Masseteric to Facial Nerve transfer (for zygomatic muscles and lower orbicularis oculi).