

The Variable Facial Nerve Branches: A Case Report

Ehab Mostafa Elzawawy*

Professor, Department of Anatomy and Embryology, Faculty of Medicine, University of Alexandria, Egypt

***Corresponding Author:** Ehab Mostafa Elzawawy, Professor, Department of Anatomy and Embryology, Faculty of Medicine, University of Alexandria, Egypt.

Received: March 29, 2021; **Published:** March 31, 2021

Abstract

The terminal branches of facial nerve that emerge from the parotid gland and supply muscles of facial expression are extremely variable. In a routine cadaveric dissection, the right facial nerve branches were arranged as usual, but the left side showed an unusual pattern as the zygomatic branch emerged lower than usual and crossed upwards while, the marginal mandibular branch emerged higher than usual and crossed downwards. Any variability of facial nerve branches in the face is very important and worth reporting as it has a great impact on many procedures done in this part of the face.

Keywords: Facial Nerve; Parotid Gland; Zygomatic Branch; Marginal Mandibular Branch

Introduction

The branching patterns of the facial nerve as it exits the parotid gland are very variable. Many reports [1-3] have described diverse variations of these branches. Yet, each variation is unique and describes a different branching pattern. There are so many procedures as facelift, injection of fillers or botulinum toxin that are done in the face in the plane of facial nerve branches. That is why thorough knowledge of these variations is essential to avoid injury of any of these branches that could result in a permanent facial deformity.

Case Report

During routine dissection, we found that the facial nerve divided into its terminal branches inside the substance of the parotid gland. It gave a temporal branch that divided into 2 branches as it emerged from the upper pole of parotid gland and a cervical branch that divided into 2 branches as it emerged from the lower pole of the gland.

The upper buccal branch arose next to the temporal branch and passed parallel to the transverse facial artery and parotid duct to the upper lip.

The zygomatic branch emerged lower down from the anterior border of the gland and passed upwards to the zygomaticus muscles.

The marginal mandibular branch emerged from the anterior border of the gland just below the zygomatic branch and ran to the lower border of the mandible.

The lower buccal branch arose below the marginal mandibular branch and passed to the lower lip.



Figure 1: A photograph of the left side of the face. The branches of the facial nerve can be seen coming out from the parotid gland (P). There are 2 temporal branches (T) coming out from the upper pole of the gland and 2 cervical branches (C) coming out from the lower pole of the gland. The upper buccal branch (BU) emerges from the anterior border of the gland and is running with the transverse facial artery (TF) and parotid duct (PD) to reach the upper lip. The zygomatic branch (Z) is at a lower position and crosses upwards while, the marginal mandibular branch (MM) is at a higher position and crosses downwards. The lower buccal branch (BL) passes superficial to masseter (M) to the lower lip. Note the superficial temporal artery (ST).

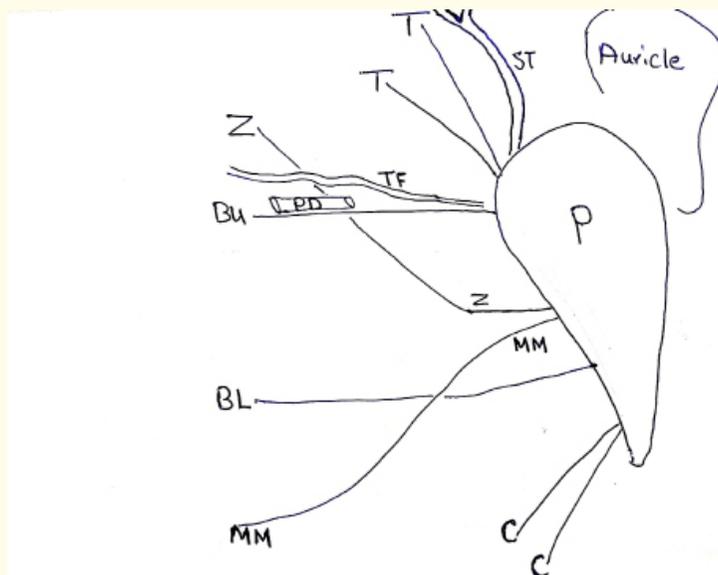


Figure 2: A diagrammatic illustration of the case.

Discussion

Unawareness of the variations of facial nerve terminal branching pattern is the main cause of facial palsy resulting after procedures in this area of the face [4,5]. Martinez Pascual, *et al.* [3] described 12 different types of terminal facial nerve branching and none of them is similar to the pattern described in this case. This shows how diverse is the facial nerve branching pattern. It is our duty as anatomist to report such diversity whenever encountered during routine dissections. This can guide plastic and cosmetic procedures done in the face.

Conclusion

Only the temporal and cervical branches are in their respective places. However, each divided into 2 branches as they emerged from the upper and lower pole of the gland, respectively. The other branches are not in their usual places. The zygomatic branch is at a lower position and crosses upwards. While the marginal mandibular branch is at a higher position and crosses downwards.

Bibliography

1. Touré G., *et al.* "Vascular and Nerve Relations of the Marginal Mandibular Nerve of the Face: Anatomy and Clinical Relevance". *Plastic and Reconstructive Surgery* 143.3 (2019): 888-899.
2. Ryu MH and Kahng D. "Anatomical variation of zygomatic nerve branches around zygomaticus major muscle in facelift". *Plastic and Reconstructive Surgery Global Open* 5.2 (2017): e1241.
3. Martinez Pascual P., *et al.* "Extracranial course of the facial nerve revisited". *The Anatomical Record* 302 (2019): 599-608.
4. Bittar RF, *et al.* "Facial paralysis after superficial parotidectomy: analysis of possible predictors of this complication". *Brazilian Journal of Otorhinolaryngology* 82 (2016): 447-451.
5. Tzafetta K and Terzis JK. "Essays on the facial nerve: part I. Microanatomy". *Plastic and Reconstructive Surgery* 125 (2010): 879-889.

Volume 4 Issue 4 April 2021

©All rights reserved by Ehab Mostafa Elzawawy.