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The Marginal Mandibular Branch of the Facial Nerve and the Transverse Cervical Nerve.

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Abstract

Although facial nerve anatomy knowledge is crucial to avoiding iatrogenic injury during surgery, surgeons are less concerned with the cervical branch of the facial nerve, which, in comparison to other branches of the FN, plays a crucial role in lower lip aesthetic and function. The transverse cervical nerve frequently communicates with the cervical branch of the FN, even though communication between branches of the cervical plexus and FN is not well documented. The peripheral mandibular branch has only occasionally been directly communicated with, according to reports. The authors describe contact between the marginal mandibular branch of the FN and the transverse cervical nerve as an uncommon anatomical variant.

Key words

Transverse cervical nerve, facial nerve, and marginal mandibular branch

Introduction

Surgeons are less concerned with the cervical branch (CB), which plays a decisive role in lower-lip aesthetic and function compared to other branches of the facial nerve (FN), because it is less common to cause iatrogenic harm during surgery (1). The transverse cervical nerve (TCN), which frequently connects with the CB of the FN, is not well known to communicate with the branches of the cervical plexus (2-5). The marginal mandibular branch (MMB) is rarely mentioned in publications reporting communication (2). We report a communication between the TCN and the MMB of the FN, an uncommon anatomical variation.

Case Presentation

Partial glossectomy was performed on a 76-year-old woman who had T2N0 tongue cancer. Six months following surgery, the patient had left functional neck dissection for occult cervical lymph node metastases. The larger auricular nerve, external jugular vein, and TCN were discovered after lifting the subplatysmal flap. A retrograde dissection along the ascending branch of the TCN was carried out to locate the MMB of the FN because this branch shares communication with the CB of the FN. In the parotid gland, the TCN split into anterior and posterior branches, each of which anastomosed the MMB. The CB could not be located despite peripheral dissection of the MMB to look for it. Because of this, the back and front As a result, the ascending and descending branches of the TCN were assigned to the posterior and anterior branches, respectively. The recovery process from surgery went smoothly without any FN weakness.

DISCUSSION

The TCN has ascending and descending branches, and the ascending branch travels upward to the submandibular region where it joins the CB of the FN to form a plexus beneath the platysma muscle (3). 33 communications were found in all 22 neck halves of the TCNs, proving that all TCNs transmit one or two communicating branches to the CB of the FN (11 cadavers). According to Salinas et al. (2), 19 out of 20 hemifacial cadaver specimens had TCN and CB communication identified, but only one had direct connection with the MMB (2). In 50% to 55% of specimens, there was only one communication branch with the CB, while in 40% to 50%, there were two communicating branches with the CB (1,2).Salinas et al. (2) claim that in all 20 instances, the TCN communication was distal to the CB and MMB separation at the FN point. A number of authors have reported the TCN and CB's positions on communication (1,2). An average of 19 mm (with a range of 7 mm to 32 mm) to 25 mm separated the inferior border of the mandible from the TCN connection (range 12 mm to 39 mm). 20 of 33 (60.6%) communications, and communications inferior or posterior to the submandibular gland, occurred close to the inferior border of the submandibular gland, according to Domet et al.

Average separations were 28 mm and 20 mm from the inferior mandibular boundary, respectively. In addition, the distances from the posterior border of the communications discovered inferior or posterior to the submandibular gland, respectively, averaged 12 mm (range 2 mm to 38 mm) and 14 mm (range 0 mm to 34 mm). According to Salinas et al. (2), the average distance from the parotid border to the proximal anastomosis

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(if more than one was present) was 13.9 mm. There is a 10% incidence rate for the communication to take place inside the parotid gland at times (1, 2, 4). (2). According to our knowledge, this situation is the second instance in which TCN and MMB have communicated. In our situation, the parotid gland was the site of the connection.Its location was inferior to the inferior border of the jaw, posterior to the submandibular gland, and distal to the CB and MMB separation point of the FN. If we did not initially locate the TCN and undertake retrograde dissection of the lower branch of the FN, the lower branch of the FN would be transected unintentionally after dissection of the lower pole of the parotid gland.

The preservation of high CB that contribute to the function of the lower lip depressor and the identification of the FN in retrograde dissection during parotidectomy and neck dissection are both made possible by anatomical knowledge of this regular communication between the TCN and CB, including direct communication with the MMB and its position (1). It could potentially be a target for aesthetic neck rejuvenation procedures or CB neurectomy for platysmal motion issues (2).

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