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Mandibular angle resection and masticatory muscle hypertrophy – A technical note and morphological optimization

Résection de l'angle mandibulaire et hypertrophie musculaire masticatoire – Note technique et optimisation morphologique

A.R. Andreishchev[a], R. Nicot[b,*], J. Ferri[b]

[a] *Department of Oral and Maxillofacial Surgery - St. Petersburg Pavlov State Medical University, Savushkina srt., 8/2, St., Petersburg, 197341, Russia*
[b] *Oral and Maxillofacial Surgery Department, Lille 2 University, hôpital Roger-Salengro, boulevard du Professeur-Emile-Laine, 59037 Lille cedex, France*

Summary

Introduction. Mandibular angle resection is rarely used, but is a highly effective means of correcting facial defects. We report a mandibular angle resection technique associated with the removal of a part of hypertrophic masseter muscles and resection of buccal fat pad.

Technical note. Anatomical reminders: the most important entities are the facial artery and vein, crossing the lower margin of the jaw just in front of the anterior boarder of the masseter muscle and the temporomaxillary vein, passing through the temporomaxillary fossa; preoperative aspects: the preoperative examination included a radiological assessment of the shape and size of the mandibular angle; surgical technique: an intra-oral approach was usually used. The most effective and convenient method for the osteotomy was using a reciprocating saw. This technique allowed achieving a smooth contour of masseter muscles during masticatory movements or at rest.

Our experience. Eleven mandibular angle resections were performed from 2001 to 2009. The surgery was supplemented by remodeling the lower margin of the jaw for 5 other patients. No permanent facial palsy was noted. One patient presented a unilateral long-term loss of sensitivity of the lower lip and chin.

Discussion. This surgical technique if simple even requires using good technical equipment, and observing a set of rules. Using these principles allows simplifying the surgical technique, and decreasing

Résumé

Introduction. La résection chirurgicale de l'angle mandibulaire est une technique peu utilisée qui est efficace dans la prise en charge des hypertrophies des muscles masséters. Nous rapportons la technique de résection de l'angle mandibulaire associée à l'exérèse partielle du muscle masséter hypertrophié et à la résection du corps adipeux de la joue.

Note technique. Rappels anatomiques : les entités les plus importantes sont l'artère et la veine faciales qui croisent le bord inférieur de la mandibule en avant du muscle masséter et la veine rétromandibulaire, passant dans la fosse temporo-maxillaire ; aspects préopératoires : l'examen préopératoire doit inclure une évaluation radiologique de la forme et de la taille des angles mandibulaires ; la technique chirurgicale : l'abord habituel était intra-oral. La méthode utilisée était une ostéotomie à la scie alternative pour remodeler les angles mandibulaires.

Notre expérience. Entre 2001 et 2009, 11 résections des angles mandibulaires ont été effectués. Pour cinq autres patients, l'intervention chirurgicale a été complétée par un remodelage de l'os basilaire de la mandibule. Aucune perturbation permanente des mouvements faciaux n'a été notée. Dans un cas, il y a eu une hypoesthésie de la lèvre inférieure et du menton à long terme.

Discussion. Cette technique chirurgicale, simple sur le plan théorique, impose néanmoins l'utilisation d'un matériel adapté et le respect d'un ensemble de règles. L'utilisation de ces principes

* **Corresponding author.**
e-mail: romain.nicot@gmail.com (R. Nicot).

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its morbidity. A part of the masseter muscles and the buccal fat pad can sometimes be resected to improve the morphological results.
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Keywords: Masseter muscle hypertrophy, Oral surgical procedures, Osteotomy

permet de simplifier l'acte chirurgical et de réduire sa morbidité. La résection partielle des muscles masséters et de la boule de Bichat peut être pratiquée afin d'optimiser les résultats morphologiques.
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Mots clés : Hypertrophie du muscle masséter, Technique de chirurgie orale, Ostéotomie

Introduction

Mandibular angle resection is a seldom used surgical procedure, that significantly modify the shape of the face. As such, it is often used as a way of "refining" facial features, most often in young women with masseter muscle hypertrophy [1]. Mandibular angle resection is also considered for transsexual and interracial transitions [2].

Converse was the first to propose an intra-oral approach in 1951 [3] with the advantage of avoiding surgical skin scars and facial palsy. However, obtaining satisfactory esthetic results requires additional surgical procedures.

We report a technique of mandibular angle resection associated with the removal of a part of hypertrophic masseter muscles and resection of buccal fat pad to optimize morphological results.

Technical note

Anatomy reminders

The angle of the mandible is a bony protrusion; it is the attachment site for masseter and temporal muscles on its lateral side and for medial pterygoid muscle on its medial side. The degree of its development is dependent on the traction forces of the muscles attached to this area. The top of this area is limited by the mandibular canal, which contains the inferior alveolar neurovascular bundle.

The most important entities, from a topographical point of view, are the facial artery and vein (*a. et v. facialis*), crossing through the lower boarder of the jaw, anteriorly to the masseter muscle, and the temporomaxillary vein (*v. retromandibularis*), passing through the temporomaxillary fossa.

Preoperative aspects

The preoperative examination must include radiological assessment of the shape and size of the mandibular angle. The simplest and most convenient method is a panoramic view. The primary contraindication for the operation is determined by X-ray results: a low mandibular canal excludes the possibility of resecting the bone fragment with adequate volume. We use the X-ray image and the relief of soft tissue to draw the projection of the future bone line on the skin. This line should start from the body of the mandible, where it curves before reaching the protrusion, the area of masseter muscles attachment. This line should end in the area curving into the posterior branch margin of the mandible, just above the tuberosity of the angle outer surface, corresponding to the muscle's attachment area (*fig. 1*). Care should be taken to draw

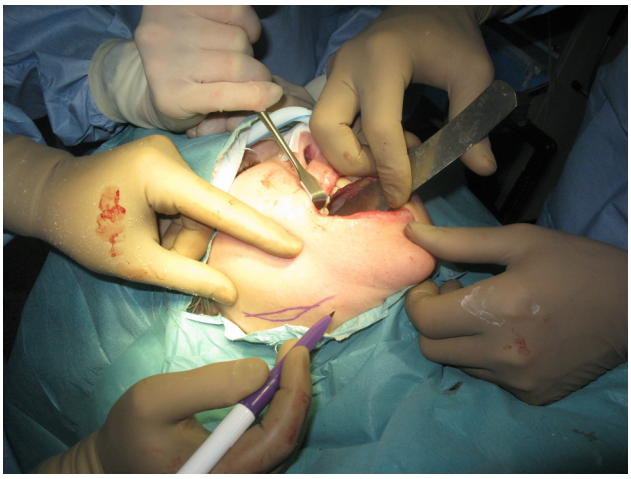

Figure 1. Preoperative estimation before incision.

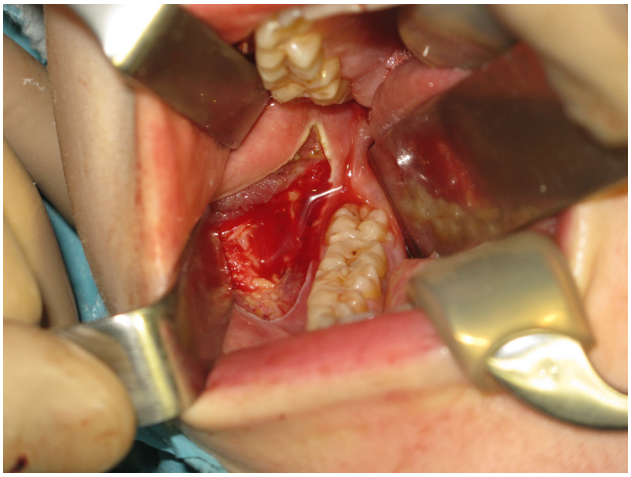

Figure 2. Intra-oral approach in retromolar and at lower labio-gingival sulcus.

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