



Combined treatment with botulinum toxin and hyaluronic acid to correct unsightly lateral-chin depression*

Tratamento combinado com toxina botulínica e ácido hialurônico para correção da depressão inestética lateral mentoniana

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Abstract: With aging, anatomical changes are observed in the face. In the lower third, these changes are expressed as ptosis of the angle of the mouth, lip enhancement groove mentalis; decrease in concavity between the jaw and neck and very noticeable platysmal banding. The repeated contraction of muscles of the lateral-chin together with the band platysmal side form what are called a marionette groove. Treating the whole lateral-chin area can result in a more harmonious aspect of the face when compared with treatment of a marionette groove in isolation. In this paper we describe combined treatment of the lateral chin area using botulinum toxin and fillers.

Keywords: Aging; Botulinum toxins; Hyaluronic acid

Resumo: Com o envelhecimento observamos mudanças anatômicas na face. No terço inferior essas mudanças se expressam como ptose do ângulo da boca; acentuação do sulco lábio mentoniano; diminuição da concavidade entre a mandíbula e o pescoço e formação de bandas platísmas bem evidentes. A contração repetida dos músculos da região latero-mentoniana juntamente com a banda platísmal lateral, forma o que chamamos de sulco de marionete. Ao tratarmos toda região latero-mentoniana conseguimos um resultado mais harmônico, quando comparado com o tratamento isolado do sulco de marionete. Nesse artigo apresentamos o tratamento combinado da região latero mentoniana com o uso de toxina botulínica e preenchedores.

Palavras-chave: Ácido hialurônico; Envelhecimento; Toxinas botulínicas

Aging determines changes in the facial contour. These changes are generated by a combination of factors including: loss of subcutaneous tissue volume, bone resorption, sagging skin and gravitational changes, all of which give the face a tired appearance.¹

The main changes observed in the lower third of the face are: ptosis of the labial commissure resulting in a triangular depressed area at the corner of the mouth, an increase of mentolabial sulcus, forming marionette lines, decrease in the concavity between the jaw and neck, and noticeable platysma banding.¹

The repeated contraction of depressor muscles

of the angle of the mouth, the lateral platysmal band and the mentalis, form the labial groove or marionette lines. In the author's opinion treating the entire lateralchin region produces a more harmonious result when compared with treating marionette lines in isolation.

This article aims to describe a combination treatment using volumizing hyaluronic acid and toxin for the lateralchin region.

To relax the depressor muscles of the angle of the mouth, 2-3 U of botulinum toxin is applied at a point indicated on an imaginary line running from the naso-

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labial groove to the jaw, with the jaw line (Figure 1).

For the treatment of the platysma muscle bands the author suggests treating only the lateral band, marking a reference point below the jaw line, at the beginning of the band, where we apply 2 - 3 units of toxin; a point in the same band, 2 cm lower than the reference point, and 2 accessory points, one anterior and the other posterior to the reference point, each one at a distance of 1.5cm from the first, below the jaw line. 2 U of toxin are applied at each accessory point (Figure 1).

To treat the mentalis, we mark a point on each side and use 2 to 3 units of toxin per point (Figure 1).

When marking the area to be filled we contour the chin area with a semicircle and another half circle in the area related to the inferior displacement of Bichat fat. We draw a line at the edge of the jaw bringing together the two anterior lines, and 2 cm above this we draw another parallel line, effectively demarcating a quadrangular space (Figure 2).

We create an anesthetic button and a micropuncture with a 21G needle. We next introduce the microcannula between the two parallel lines and fill the demarcated space with the retro-injection technique. In due course we shape the filler with the index finger against the jaw (Figure 1).

In this way the marionette line is softened and, if necessary, we can fill the groove itself with retro-injection and the inverted triangular area in the angle of the mouth by using the fanning technique (Figure 2).

The lower facial contour is formed by the jaw, the mentalis muscles, depressor of anguli oris, masseter and platysma, fat and skin. The platysma, together with the depressor anguli oris, exert a downward vector force decreasing the concavity between the jaw and neck, pulling the angle of the mouth and the lower lip downward. The mentalis raises the tissues of the chin and the mentolabial sulcus, corrugating the skin of the chin.^{2,3}

The jaw loses definition during aging. If loss occurs in the proportion between the bone support and the soft tissues, aggravated by gravity, this will generate a downward displacement of the Bichat fat.

The jaw juts forward and the top of the chin moves above the bottom of the jaw, forming - with contractions of the mentalis muscle - a half-moon type wrinkle which looks like a witch's chin.⁴ All this chin bone muscle and subcutaneous remodeling associated with insertion of the fibers of the depressor muscle from the angle of the mouth into the skin, and its repetitive contraction, leads to the formation of marionette lines and lowering of the labial commissure.

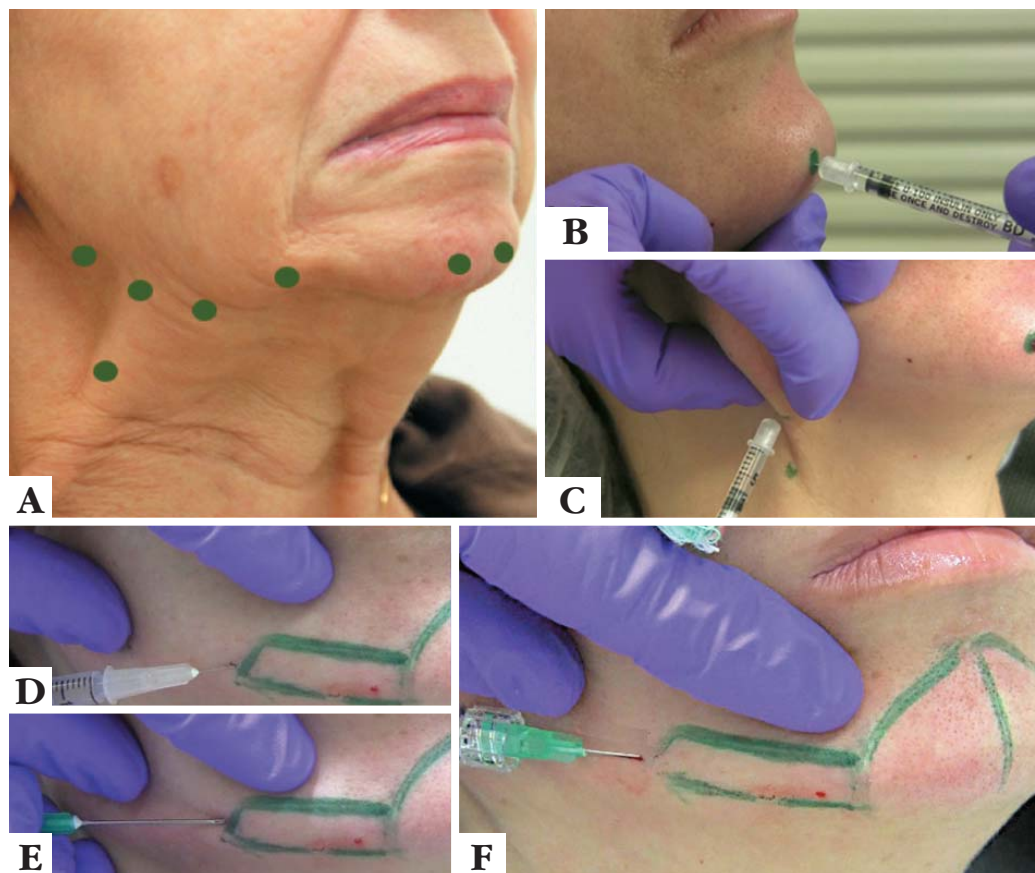


FIGURE 1: A. Note the area marked in green for the application of botulinum toxin into the muscles: mentalis, depressor of the angle of the mouth and lateral platysmal bands. B. This picture shows the application of 3 units of toxin botulinum in a belly of the mentalis muscle. C. Here we highlight the application of 2 units of botulinum toxin in the upper part of the lateral platysmal band. D. Note the creation of a button anesthetic with 2% lidocaine for undertaking the puncture and the insertion of a 22G microcannula. E. 21G needle inserted up to the reticular layer of the dermis (the puncture enables insertion of the 22F microcannula) F. Once the the inlet port is opened the 22G microcannula is inserted up to the supraperiosteal plane outlined in green. Retroinjection of the product is carried out in the area cited

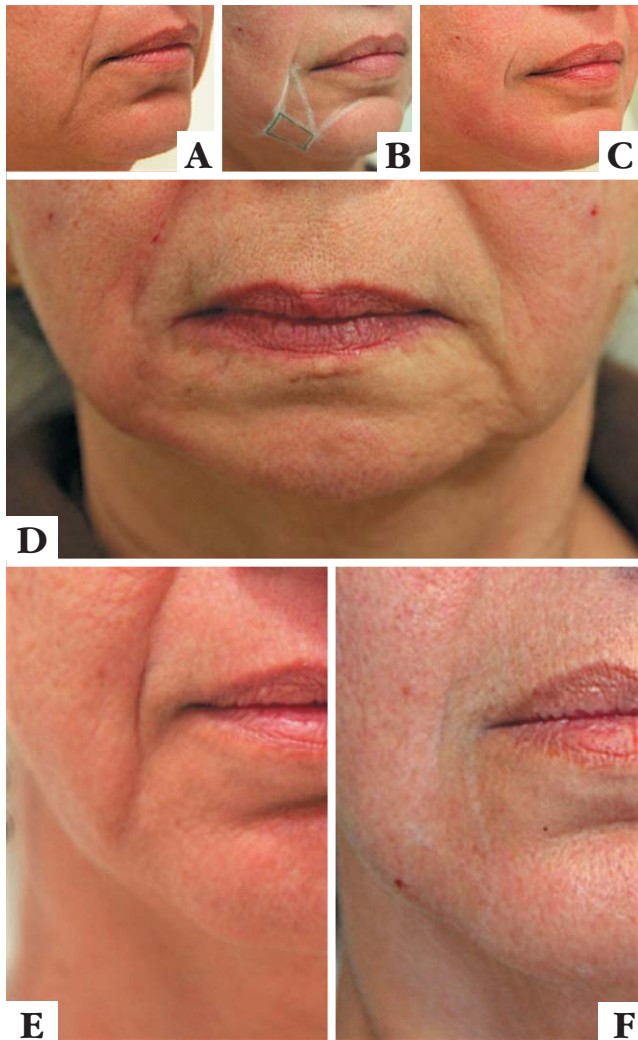


FIGURE 2: **A.** We can observe ptosis of the labial commissure, resulting in a triangular depressed area at the corner of the mouth; accentuated mentolabial sulcus, forming marionette lines; decreased concavity between the jaw and neck. **B.** When marking the area to be filled we demarcated the chin region with a semi circle in white and a further semi circle in the area for the inferior displacement of Bichat fat. A line on the edge of the jaw brings together the two lines above, and 2 cm above these we draw another parallel line, delimiting a quadrangular area in green. **C.** The result in this patient after the area discussed above was filled. Significant improvement of mandibular contour and labial chin groove, as well as lifting of the labial commissure. **D.** On the right-side hemifacial combined treatment was performed with botulinum toxin and hyaluronic acid. Significant aesthetic improvement resulted when compared with the untreated left-side hemifacial. **E.** Detailed image before the combined treatment of botulinum toxin and hyaluronic acid. **F.** Picture showing situation following the combined treatment using botulinum toxin and hyaluronic acid. Significant aesthetic improvement in the mandibular contour resulting from treatment of the mentolabial sulcus and the marionette line

The anatomy and function of the muscles are crucial to achieving efficient results.⁵ In the region of the facial contour the strength depressant of the platysma and depressor of the anguli oris muscle is antagonized by the elevator muscle of the angle of the mouth, and both the zygomaticus major and minor muscles. Thus, by relaxing the depressor muscles we can observe the elevation of the corner of the mouth, as a result of the action of their antagonists.

Applying toxin on the platysma, initially described as the "nefertiti lift" technique, aims to redefine the jaw line and smooth platysmal bands.⁶ I believe that the use of several points with many units of toxin is unnecessary and increases the risk of adverse effects. We choose to smooth the lateral platysma band in a more conservative way.

The relaxation of the mentalis muscles, depressor of anguli oris and platysma redefines the facial contours and softens the marionette lines. However a depression in the lateralchin region still persists which can be corrected with hyaluronic acid fillers.

Microcannula use involves fewer orifices since it is longer than the 7 mm needle, and generates less histamine release, swelling and pain. Moreover, it is a safer technique: its blunt tip reduces the risk of disruption of key structures such as blood vessels and nerves.⁷

This combination of techniques is a low-risk way of softening the signs of aging on the lower third of the face. □

REFERENCES

1. Weinkle S. Injection techniques for revolumization of the perioral region with hyaluronic acid. *J Drugs Dermatol.* 2010;9:367-71.
2. Tamura BM. Anatomia da face aplicada aos preenchedores e à toxina botulínica - Parte I. *Surg Cosmet Dermatol.* 2010;2:195-204.
3. Tamura BM. Anatomia da face aplicada aos preenchedores e à toxina botulínica - Parte II. *Surg Cosmet Dermatol.* 2010;2:291-303.
4. Coleman SR, Grover R. The anatomy of the aging face: volume loss and changes in 3-dimensional topography. *Aesthet Surg J.* 2006;26:S4-9.
5. Goldman A, Wollina U. Elevation of the corner of the mouth using botulinum toxin type a. *J Cutan Aesthet Surg.* 2010;3:145-50.
6. Gassia V, Beylot C, Béchaux S, Michaud T. Botulinum toxin injection techniques in the lower third and middle of the face, the neck and the décolleté: the "Nefertiti lift". *Ann Dermatol Venereol.* 2009;136 Suppl 4:S111-8.
7. Nacul A M. Contour of the Lower Third of the Face Using an Intramuscular Injectable Implant. *Aesthetic Plast Surg.* 2005;29:222-9.

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