

Correction of chin ptosis

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Abstract. Chin ptosis is described as a descent of the soft tissue from the symphyseal region to a position under the lower contour of the mandible. Given its multifactorial causes, treatment must be determined on a patient-by-patient basis. While augmentation of the submental crease is a versatile option for the correction of chin ptosis, this only corrects the soft tissue component. A technical modification to treat dynamic chin ptosis, associated with bone reduction in the mandibular symphysis, is presented here.

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Chin ptosis is described as a descent of the soft tissue from the symphyseal region to a position under the lower contour of the mandible¹. In contrast to the case of witch's chin, the tissue is projected downward, not outward². Chin ptosis can be seen in patients of all ages, although it is usually associated with aging.

According to Garfein and Zide¹, there are four types of chin ptosis: illusory, developmental, iatrogenic, and dynamic. The latter of these causes an effacement and drop of the chin pad soft tissues in patients with a horizontal smile without commissure elevation. This can be seen in patients with a greater predominance of the actions of the risorius muscle (which has a horizontal vector) over the zygomaticus major and minor muscles (which have a commissural ascent vector). Thus, upon smiling the soft tissue is compressed against the symphyseal bone prominence, causing the chin tissue to drop. It can present in patients who have undergone surgical interventions (as a side-effect of genioplasty reduction, among others), as well as in those who have not. Given its

multifactorial causes, treatment must be determined on a patient-by-patient basis.

This technical note presents a modification of the technique presented by Lesavoy et al.², in which an osteotomy is also performed on the mandibular symphysis to treat dynamic chin ptosis associated with macrogenia (Fig. 1).

Surgical technique

A horizontal ellipse is drawn on the skin using a skin marker, with the main axis aligned with the submental crease. Between 3.6 ml and 5.4 ml of local anaesthetic is infiltrated subcutaneously into the demarcated area. Next, using a scalpel, an incision is made in the demarcated area to eliminate the skin and subcutaneous tissue and reach the plane of the platysma muscle. After this, a skin marker is used to mark the muscular tissue of the platysma with two anterior-base triangles. A third posterior-base triangle is formed between the two that have already been described. This central triangle of the platysma muscle is resected and eliminated (Fig. 2).

Next, the central part of the area is dissected in search of the bone plane of the edge of the mandible. A 4-mm incision is made on the mentalis muscle above its



Fig. 1. Facial profile photograph showing dynamic chin ptosis. The smile is horizontal and without commissure elevation. The soft tissue is compressed against the symphysis, causing the chin tissue to drop.

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lower insertion, leaving sufficient remaining muscle tissue so that they can be repositioned and sutured after having been detached. The inferior border of the mandible is exposed and the dissection is completed in a sub-periosteal plane. An osteotomy is performed on the pogonion using a surgical hand-piece and bur, under abundant irrigation with physiological saline solution (Fig. 3). The surgical field is then cleaned, the mentalis muscle repositioned, and the area sutured using Vicryl 4-0 (Ethicon). The vertices of the two triangles are connected in a convergent manner, and the platysma muscle sutured

with interrupted Vicryl 4-0 stitches. Next the medial edges of the two triangles are brought together using the same suture material. Lastly, plane suturing is undertaken, which repositions the subcutaneous tissue towards the back, correcting the defect and facilitating suturing without tautness of the skin; this is done in a continuous fashion using Prolene 6-0 (Ethicon) (Fig. 4).

Discussion

The elimination of a large portion of soft tissue from the submental crease to treat

chin ptosis was first described in 1972³. Since then, numerous techniques have been published on how to handle this unaesthetic defect. The technique described in this note, which is a modification of the technique presented by Lesavoy et al.², offers an appropriate and simple treatment for this alteration.

The technique presented allows the tissue to be reduced in the anteroposterior direction as well as in its horizontal component, something that is usually more complicated to achieve. This submental technique gives the surgeon ample and quick access to an area where skin, fat,

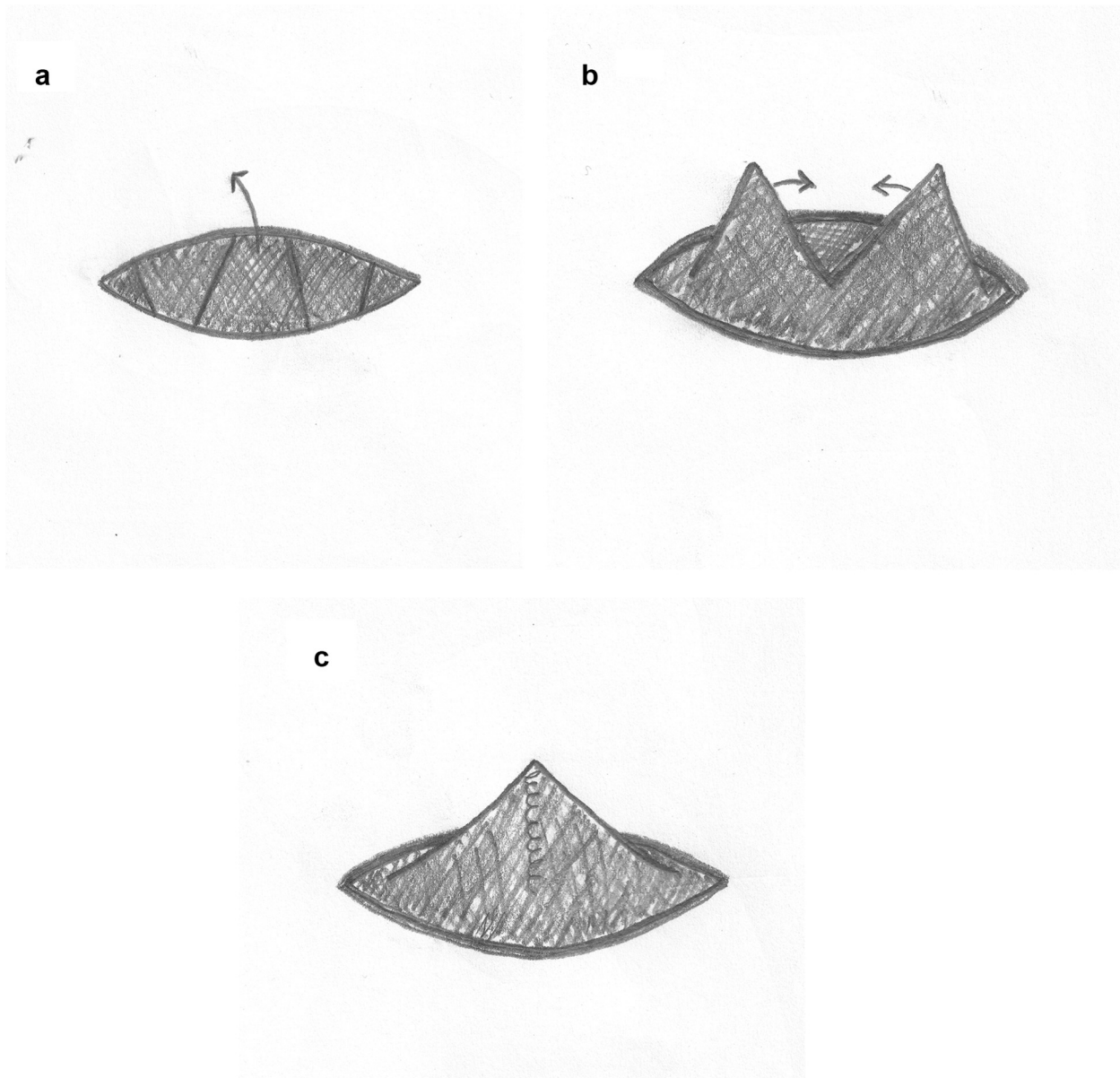


Fig. 2. Diagrams illustrating the technique. (a) A horizontal ellipse is drawn on the skin, with the main axis aligned with the submental crease. After removing the ellipse including skin and subcutaneous tissue, a skin marker is used to mark the muscular plane with two divergent anterior-base triangles. (b) The medial intervening triangle is excised and the vertices of the two triangles are connected in a convergent fashion. (c) The platysma muscle is sutured with interrupted stitches.

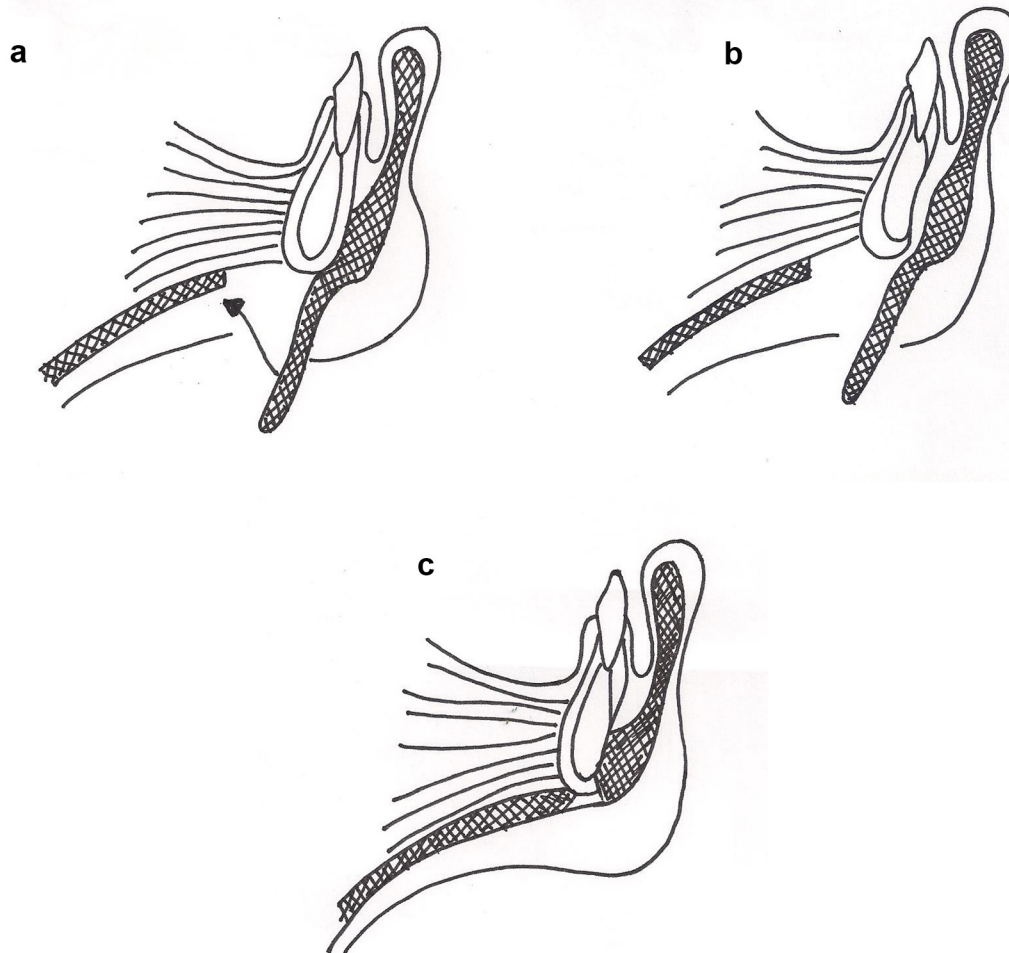


Fig. 3. Sagittal view diagrams. (a) The incision described above, placing the platysma section into the anterior base of the incision. (b) Elevation of the symphyseal region and sufficient osteotomy of the pogonion. (c) Re-positioning and transfer of the triangular portion of the platysma muscle to a more posterior position.



Fig. 4. Facial profile photograph at 12 months after surgery. A rhinoplasty was also performed to establish good facial balance.

and muscle tissues can be resected leaving an aesthetic scar that is not very visible. In addition, it provides direct access to the mandibular symphysis for bone reduction if necessary. In the case presented here, there was an alteration in the soft tissue (chin ptosis) as well as a problem with the hard tissue – the macrogenia. This required a bone reduction for treatment, not just to remove the excess hard tissue, but also to create a region of lesser resistance in the mid-symphysis against the active soft tissues, with both of these contributing to the treatment of the chin ptosis.

To determine how much bone tissue to eliminate, it is necessary to perform a cephalometric and aesthetic analysis of the projection of the pogonion, as well of the inclination of the line connecting

the lower lip to the mentolabial crease. If this line is straight, with little inclination, and a marked bone reduction is performed, the result will be a flat or absent mentolabial crease. In contrast, a line with a steep incline allows greater freedom when it comes to bone reduction. Lastly, it should be stressed that a reduction in bone tissue must be accompanied by a reduction in soft tissue or else iatrogenic chin ptosis will be caused.

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Competing interests

There is no conflict of interest.

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This study was approved by the hospital ethics board, which complies with the Declaration of Helsinki.

Patient consent

The patients accepted for this study approved and signed an informed consent agreement to publish clinical photographs.

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