The Sternomastoid-Mandibular Trough: An Overlooked Aesthetic Unit

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Background: Techniques in facial rejuvenation have not recognized the importance of a well-defined mandibular trough to a youthful-appearing face.

Objective: The purpose of this article is to define the sternomastoid-mandibular trough (SMT) and outline a surgical approach that preserves or enhances this aesthetic unit during rhytidectomy.

Methods: The SMT is a triangular area that defines the posterior outline of the jaw and divides the aesthetic units of the jaw and neck. Defatting of the trough is performed with particular consideration given to the tendency for surgical rotation of the submuscular aponeurotic system to blunt the trough.

Results: A well-defined SMT creates a thinner, more youthful facial appearance.

Conclusions: A heightened awareness of the SMT in preoperative planning and surgical technique will improve the overall aesthetic results of facial rhytidectomy.

Features of a youthful adult face include smooth skin, properly draped over the underlying soft tissues and bone structure; a well-defined cervical angle; shallow nasolabial folds; and subcutaneous tissues that adhere closely to the underlying frame. Conversely, loss of skin elasticity, skin excess, blunting of the cervical angle, development of neck cords, the appearance of jowls, and prominence of the nasolabial folds all distinguish the aging face from the youthful face. Techniques in facial rejuvenation have focused on the removal of excess skin, ablation of the jowls, correction of an obtuse neck angle, elevation of the malar fat pad, and softening of the nasolabial fold. These techniques are designed to reduce the visible signs of aging by restoring or creating the facial attributes of youth.

The well-defined sternomastoid-mandibular trough (SMT) is also characteristic of the youthful face. The SMT is a 3-dimensional triangular area, defined posteriorly by the anterior border of the sternomastoid muscle, anteriorly by the ascending ramus of the mandible, and inferiorly by a horizontal line extending from the angle of the mandible with the patient upright (Figure 1). The SMT defines the posterior outline of the jaw and divides the aesthetic units of the jaw and neck.

An ideal SMT is naturally deep, defining the face and giving it a thinner, more youthful appearance, especially in the lateral and oblique views (Figure 2, A). A blunted or shallow trough may be an inherent facial feature, part of the aging process, or iatrogenic.
from SMAS rotation during rhytidectomy. A blunted trough makes the face appear rounder, heavier, and in some cases, older (Figure 2, B).

The SMT is a previously unrecognized aesthetic unit, and techniques in facial rejuvenation have failed to directly address it. In fact, many rhytidectomy techniques tend to blunt the SMT through a repositioning of the SMAS posteriorly and superiorly. Although SMAS rotation improves the jowls and helps to achieve a smoother, better-defined neckline from the submentum to the angle of the jaw, the addition of tissue layers obscures the trough and its landmarks. A poorly defined trough will detract from the final aesthetic result.

Surgical Technique

If SMAS rotation is unnecessary during rhytidectomy but the trough lacks definition and is inconsistent with other facial features, defatting this area down to the sternomastoid and platysma fascia will suffice to redefine the region (Figure 3).

In patients requiring a SMAS rotation, repositioning the SMAS and soft tissues will often blunt the trough. In such instances the trough can be re-established and improved.

Preoperatively, with the patient in a sitting position and the head in a natural horizontal plane, outline the SMT with marking ink. During surgery, following the SMAS
rotation, carefully remove the fat and fibrous tissue over the trough area (Figures 4-6).

Sculpting should continue down to the platysma and sternomastoid. The appearance of the trough must be appropriate to the jaw line and the face (Figures 7 and 8). An overly skeletonized trough is aesthetically inconsistent with a heavier face.

SMAS rotation sutures must not lie in the trough. If the sutures cross this area, they will either be severed or skeletonized during the sculpting process. Exposed sutures traversing the trough may be visible or palpable postoperatively.

Conclusions

The well-defined SMT is an important enhancement to facial rejuvenation. Preoperative planning and surgical techniques that incorporate an awareness of the SMT will improve the overall aesthetic results of rhytidectomy.