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ADVANCES IN COSMETIC SURGERY

Rejuvenation of the Neck

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KEYWORDS
• Neck rejuvenation • Neck lift • Platysmaplasty • Platysma plication • Submental incision

KEY POINTS
- Signs of neck aging can occur due to a combination of retaining ligament attenuation and platysmal muscle banding, skin excess and loss of elasticity, excess preplatysmal and subplatysmal fat, submandibular gland hypertrophy/ptosis, and digastric muscle hypertrophy.
- Surgical management can consist of a combination of different access approaches and internal procedures, including fat excision (preplatysmal and/or subplatysmal fat), medial or lateral platysmaplasty, and submandibular gland and digastric muscle partial excision.
- Treatment must be individually tailored based on preoperative examination and discussion with patients to identify their concerns and goals of treatment.
- The face must be evaluated as a whole. Patients often benefit from other ancillary procedures to achieve harmonious rejuvenation of the face.

INTRODUCTION

Signs of neck aging can occur as early as the late 30s. Successful correction of these deformities requires a global evaluation of facial aesthetics, because neck rejuvenation is often performed in conjunction with rhytidectomy and other ancillary procedures, such as genioplasty, to achieve a harmonious surgical outcome. There are multiple surgical and nonsurgical methods to address the neck—thorough evaluation and discussion of a patient's goals helps determine the preferred intervention.

- The youthful neck is characterized by a distinct mandibular border, a cervicomental angle of 105° to 120°, a visible anterior border of the sternocleidomastoid muscle (SCM), a slight subhyoid depression, slightly visible thyroid cartilage, and the relative absence of jowls (Fig. 1) [1,2].
- It is critical to assess the position of the soft tissue pogonion, because this imparts a substantial cosmetic effect of the appearance of the neck and facial profile (Fig. 2). A retropositioned pogonion is usually associated with a class 2 occlusal relationship and contributes to an aged appearance and obtuse cervicomental angle.

RELEVANT ANATOMY

Knowledge of the local anatomy allows a surgeon to safely address the culprits of a patient's aesthetic concerns.

- From superficial to deep, the tissue planes include skin, subcutaneous or preplatysmal fat, platysma muscle, subplatysmal fat, deep cervical fascia, and the underlying digastric muscles and submandibular glands.
- The superficial muscular aponeurotic system (SMAS) and platysma muscle are in continuity, permitting neck rejuvenation and platysma tightening via rhytidectomy techniques that reposition the SMAS [3,4].

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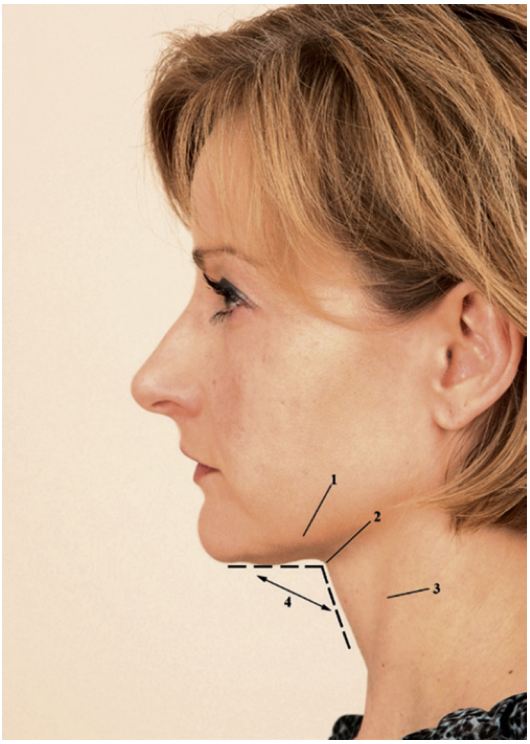

FIG. 1 Profile view demonstrating youthful features of the neck. 1, Defined inferior mandibular border; 2, hyoid depression; 3, visible anterior border of the SCM; and 4, cervicomental angle between 105° and 120°. (*From* Coleman SR, Saboeiro AP. Structural fat grafting. In: Neligan P, editor. Plastic surgery, vol 2. 4th edition. Philadelphia: Elsevier; 2012. p. 312; with permission.)

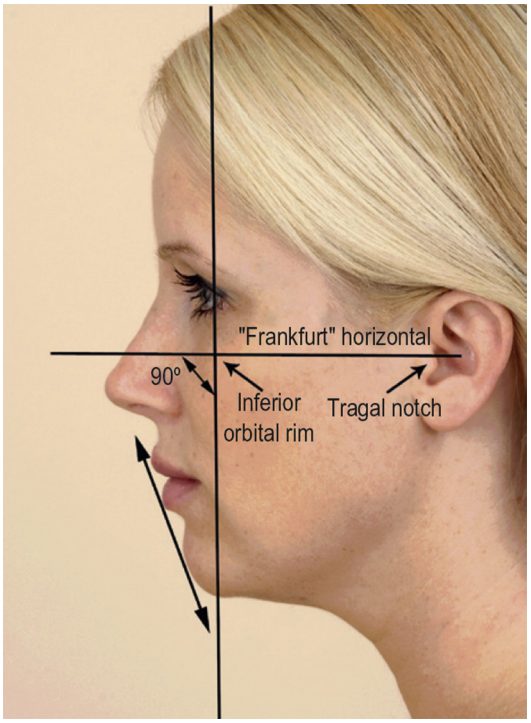

FIG. 2 Ideal lip and chin relationship on profile view: Riedel line. The chin position should fall on a line that connects the most projecting aspects of the upper and lower lip. (*From* Coleman SR, Saboeiro AP. Structural fat grafting. In: Neligan P, editor. Plastic surgery, vol 2. 4th edition. Philadelphia: Elsevier; 2012. p. 317; with permission.)

- Cervical retaining ligaments anchor the platysma to the deep fascia of the neck [5]. These are located along the anterior border of the SCM, between posterosuperior edge of the platysma and the mandibular angle and at the inferomedial border of the parotid gland/posterior submandibular gland. Furthermore, the platysma muscle has a horizontal osseous insertion along the medial mandibular body known as the mandibular septum, which contributes to jowl formation with aging [6].
- The digastric muscle is composed of 2 separate muscle bellies. The anterior belly originates form the parasymphyseal inferior border of the mandible and is innervated by the mandibular division of the trigeminal nerve. The posterior belly originates from the mastoid notch of the temporal bone and is innervated by the facial nerve. The anterior and posterior bellies meet via the intermediate tendon that inserts onto the hyoid bone. The 2 bellies of the digastric muscle, along with the inferior border of the mandibular body superiorly, form the submandibular triangle (Fig. 3).
- The facial vessels cross the submandibular triangle in the subplatysmal plane. The marginal mandibular nerve (MMN) also passes in this area, superficial to the facial vessels along the inferior border of the mandible [7], and is prone to injury with neck rejuvenation.
- The submandibular gland is composed of a superficial and deep lobe, with the MMN coursing superficial and along the cephalad aspect of the submandibular gland capsule [8]. When indicated, the superficial submandibular gland can be partially resected by incising the inferomedial capsule to avoid the MMN. Care must be taken to control supplying vascular branches from the facial or lingual vessels [8].