

Aesthetic Surgery of the Aging Neck: Options and Techniques

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78.1 Introduction

"I have baggy eyelids," and "I don't like my neck" are, arguably, the commonest complaints one hears from patients seeking facial aesthetic improvements. The latter complaint may be presented as "I am beginning to look like my mother," "I have a fat neck," "I have loose skin in my neck," "I hate my jowls" and other such specific or nonspecific complaints. When pressed to identify the exact changes needing improvement, patients may point to the obtuse cervicomenal angle, loose skin, neckbands, presence of jowls and submental fat.

To rejuvenate the aging neck, it is important for the surgeon to have an understanding of normal neck anatomy in youth, the chronological changes that occur in most patients, the anatomy of the aged neck and variations as they apply to gender and race [1, 2].

78.2 Anatomy of the Neck

The ideal youthful profile shows various distinct features (Fig. 78.1). The distinct cervicomenal angle is between 105 and 120° (Fig. 78.2). The cervicomenal angle is created by a breakpoint between the vertical portion of the neck and the transverse submandibular plane. The junction of the vertical and horizontal portion of the cervicomenal angle is at the anterior surface of the hyoid, which is normally at or above the plane of the jaw; therefore, a low hyoid or a recessed mandible may affect the position of the cervicomenal angle. The horizontal portion of the neck (transverse submandibular plane) is composed of the mandibular border, subplatysmal fat, digastric muscles, platysma, fat and skin. The digastric muscles, supplied by the mylohyoid branch of the inferior alveolar nerve, are attached superiorly to the medial surface of the parasymphiseal portion of the mandible bilaterally. The muscles course inferolaterally to attach to the lesser cornu of the hyoid bone by way of an aponeurosis. The muscle elevates during deglutination (Fig. 78.3).

On anterior view, the mandible should demarcate the face from the neck as a distinct inferior border, cast-

ing a shadow that hides the submandibular glands. This prominent jawline is often described as a "manly jaw" or a "strong jaw". The chin should be prominent, both anteroposteriorly in width and height ("strong chin"). The mandibular angle should be visible; there should be no skin laxity or jowling along the mandibular border.

There is a transition zone between the relatively fixed perioral area and the mobile neck and cheek skin. This transition in the neck is seen at the submental fold, which is barely visible in youth. In adults, with age, it often extends onto the cheeks. There are retaining cutaneous ligaments that originate from the anterior mandibular border, interdigitate among the muscle fibers of platysma and insert onto the skin. The labiomandibular groove forms in front of these ligaments.

The youthful neck has a subcutaneous layer of fat and a subplatysmal layer of fat, but these do not cause any prominence. The layer of subcutaneous fat is just sufficient to hide the underlying cartilaginous structures, although the youthful neck shows the thyroid notch as a gentle indentation, a subthyroid depression and a visible thyroid cartilage. The anterior border of the sternocleidomastoid muscle should be visible extending inferiorly, creating a small depression in the suprasternal notch.

The skin should show no horizontal rhytids or solar elastosis, and no vertical platysmal bands.

An understanding of the anatomy of the superficial musculoaponeurotic system (SMAS) is important when considering rejuvenation of the face or neck [3]. The SMAS is a fibromuscular layer that encompasses and distributes force among the facial mimetic muscles. Superiorly, the SMAS is continuous with the galea and incorporates the superficial temporal fascia (Fig. 78.4). In the parotid region, the SMAS is located superficial to and is distinct from the parotid fascia and peripherally, the branches of the facial nerve exit deep to the SMAS. The SMAS envelops the facial muscles anteriorly and has attachment to muscles in the perioral, nasolabial and periorbital areas. Inferiorly, the SMAS is continuous with the platysma muscle.

The platysma (Greek for "plate") is the vestigial remnant of the panniculus carnosus of animals. It is a quadrangular sheet of muscle, which originates on the fascia of the pectoralis major muscle and ascends

to three main points of insertion. The most anterior fibers decussate in the midline to a variable extent and for variable levels below the chin and insert into the mentum. The central fibers insert into the body of the mandible and the more posterior fibers turn anteriorly and blend closely with the fibers of the risorius muscle, the depressor anguli oris and mentalis muscles (Fig. 78.5).

Aging tends to splay the fibers laterally, diminishing the effects of this muscle on the midline and increasing the cervicomental angle. Immediately overlying the platysma is the subcutaneous fat and skin. The cervical branch of the facial nerve innervates the platysma: the main lower branch exits the parotid and enters the deep surface of the platysma. The upper twigs of the cervical branch and the lower twigs of the marginal branch intermingle before the marginal mandibular branch of the facial nerve passes on to supply the depressor anguli oris and risorius. This nerve is at or just inferior to the portion of the mandible traversed by the facial artery (Fig. 78.7).

Platysmal bands seen in the necks of patients represent the medial edge of the platysma or lateral pleats caused by laxity of the platysma muscle and its investing

fascia. Asking the patient to tense the platysma muscle will identify the bands as pleats or a true medial edge of the muscle. It was thought these bands simply represented loose platysma; however, the fact that the bands respond well to botulinum toxin injections indicates that these are tonic bands with the contracting folds bowstringing across the concave neck. Many procedures have been described for the management of these bands: lateral advancement of the SMAS, direct excision, anterior plication, platysmal notching, creation of muscle flaps and Z-plasty of the muscle.

Owsley [4] noted that some of his patients that only had lateral incisions and a SMAS-platysma tightening procedure developed recurrence of neckbands. In these patients, he subsequently notched the muscle at the site of the cervicomandibular groove. If only a lateral approach is used to tighten the platysma, subsequent tissue relaxation may result in recurrent bands. The best option is to suture the platysma at the midline and release, if necessary, at the level of the cricoid.

Vistnes and Souther [5] derived several basic anatomic principles based upon anatomic considerations of the platysma:

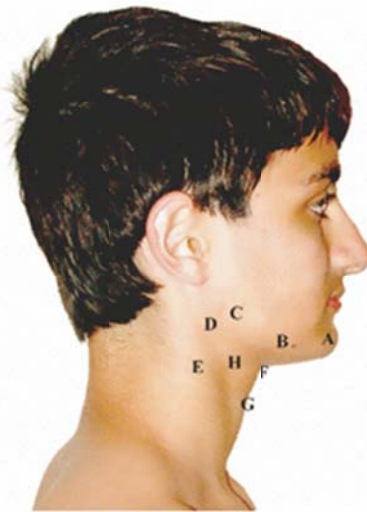


Fig. 78.1 Defining features of a youthful neck: A pronounced chin level or just anterior to the line drawn from the lower lip in men and just behind in women; B well-defined mandibular border with a submandibular shadow; C well-defined mandibular angle; D a distinct depression between the anterior border of the sternocleidomastoid muscle and the mandible; E a distinct sternocleidomastoid muscle; F a distinct cervicomental angle; G prominence of the thyroid cartilage. The skin is smooth with an absence of platysmal bands

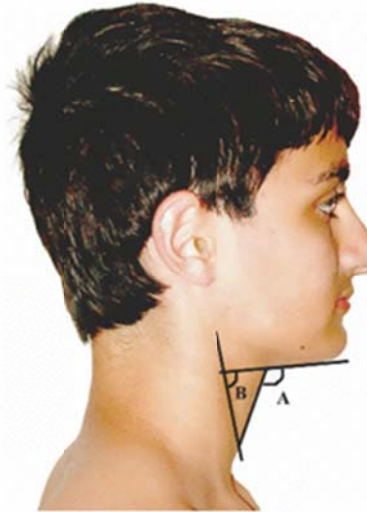


Fig. 78.2 The two angles useful in assessing a neck: A the cervicomental angle which should be between 105 and 120°; B the sternocleidomastoid-mandibular angles should be less than 90°