Face and Neck Lift Options in Patients of Ethnic Descent

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KEYWORDS

• MeSH • Rhytidoplasty • Cervicoplasty • Ethnicity • Aging
• Superficial musculo-aponeurotic system

KEY POINTS

- There is a significant ongoing shift in the utilization of cosmetic procedures across ethnicities.
- The most noticeable changes with age occur in all ethnicities over the mobile superficial musculo-aponeurotic system.
- Extended facelift techniques are most effective across all ethnicities by releasing the retaining ligaments.
- The complete release of the retaining ligaments of the midface and neck will facilitate the effective repositioning of soft tissue and allow for the best possible natural results.
- Opening the neck through a submental incision may be required for the effective management of deep neck problems.

INTRODUCTION

The group of patients who are seeking facial rejuvenation is globally becoming increasingly multicultural.[1] Ethnicity and race are both social constructs, concepts related to human ancestry, with race tending to categorize certain distinctive objective physical characteristics, whilst ethnicity tends to be more broadly used to categorize one's self-identity across language, culture, and religion.[2] The terms "race" and "ethnicity" are often interchangeably used by researchers and collapsed into a single dimension, or "ethnorace."[3] The "gold standard" for racial/ethnic assessment is self-report,[4] which means "people are who they say they are."

Differences in facial skeleton morphology across races were comprehensively studied by Farcas[5] and others.[6,7] However, there have been no published anatomic studies detailing differences in soft tissues, such as facial fat compartments or muscles across ethnic groups.[8] In addition, there is a paucity of information regarding facial aging across ethnicities.[9–14]

Historically, at a time when many surgeons came from a certain ethnic and cultural background with certain taught normative standards, many patients were transformed to reflect European standards of beauty, influenced by the neoclassical canons. These "canons," introduced by the ancient Greeks, are now thankfully recognized as incapable of being inclusive of all ethnic beauty.[6,7,15–19] Sadly, some patients do desire some form of transformation, perhaps to avoid ethnic or racial prejudice. There has also been a noted shift toward ethnic restoration where some patients experienced a loss of identity or rejection resulting from such alterations. Most patients seek preservation of racial identity with rejuvenation, and the question then arises as to whether techniques for such preservation require any form of adaptation whatsoever.

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The sophisticated facial plastic surgeon must not only be a master of applied anatomy but also be able to disentangle the racial, ethnic, sociocultural, and interpersonal motives of our modern cross-cultural patient populations. Surgeons must have a clear understanding of the differences between racial preservation and transformation and be able to communicate this effectively to their patients. The approach to each patient should be individualized,[2] and the surgeon must evaluate each patient's desires rather than attempt to impose their own views on "typical" ethnic features. This may help in part to negate the surgeon's own inherent biases.

AGEING DIFFERENCES AMONG ETHNICITIES

One of the most discernible characteristics is the amount of melanin pigment, though it can vary quite dramatically within ethnic groups. Darker skin with more melanin tends to maintain its structural integrity longer than those with lighter skin and shows the effect of ultraviolet radiation and DNA damage later in life.[20] Differences between skin extend beyond pigmentation, with darker skin having more cellular layers with increased adhesions. Fibroblasts are more numerous, larger, and more active with collagen bundles more parallel to the epidermis.[9] It is for these reasons that fine rhytids are less pronounced than in lighter-skinned individuals. It has been reported that more darkly pigmented individuals retain skin properties that are younger compared with lighter-pigmented individuals.[21] The less pigmented skin seems more susceptible to photoaging and atrophies more rapidly compared with other ethnicities, and it would seem that light-pigmented Caucasian skin is aging faster and is clinically more fragile and thinner than darker skin.[13] This area of research, regarding facial skin pigmentation, ultraviolet exposure, skin thickness, and aging, needs further exploration. Although it has been reported by authors that the facial skin of African Americans, Mestizos,[22] and East Asians[23] tends to be thicker and heavier,[24] this is controversial, as it has also been published that there is no significant difference in non-sun-exposed skin thickness between white and black women.[25,26] Furthermore, most authors who have studied the ultrastructural features of black skin agree that there are no structural differences other than the "packaging" and the number of melanosomes.[27,28] Aging black skin has many features of aging white skin.[29]

In general, African Americans are 15 times more likely to develop incision site keloids when compared with Caucasians.[30] Asian skin seems to carry a potential for greater fibroblast response post-surgery that may be associated with prolonged erythema, pigmentation, and hypertrophic scarring along incision lines.[31] Asian patients have a threefold increased rate of hypertrophic scarring compared with Caucasians. Informed consent should cover the potential for prolonged healing with hyperpigmentation and hypertrophic or keloid scarring because of greater fibroblast activity. Some authors recommend prophylactic scar prevention with topical silicon therapy.[31] Patient selection, informed consent, meticulous skin handling, closure with tension reduction sutures, maintaining moisture during wound healing, and alternative management techniques, such as corticosteroid injection and prophylactic silicon gels may be helpful during postoperative care.[32–34]

As skin loses its elasticity and hangs, tethered in part by the retaining ligaments of the face and neck, fine wrinkles develop. Although it would be naive to apply these heuristic shortcuts to all, fine rhytids have a greater propensity to develop earlier in Caucasians than in Hispanics, African Americans, and East Asians.[21] Therefore, traditional superficial musculoaponeurotic system (SMAS) face and neck lift techniques of Caucasians can predispose more to the delayed lateral or vertical sweep phenomenon seen postoperatively with these traditional techniques. The sweep phenomenon can be resistant to correction by revision with a repeat of the traditional SMAS facelift.[35,36] The complete release of the facial retaining ligaments is necessary to correct this most unsightly phenomenon using an extended facelift technique.[36,37] Other ethnicities, particularly African Americans[20,38] and Asians,[39] see aging manifestations in deeper structures of the face that are not primarily of skin origin, such as the SMAS, mimetic muscles, and adipose tissue. While soft tissue envelope laxity is less common in Asians than in Caucasians, the first signs of facial aging are often in the periorbital region[38] and midface, with the prominence of the nasolabial folds and a double-convexity of the midface[20] developing. Therefore, facelift techniques that include the true release of the anchoring ligaments of the midface allow for the adequate repositioning of lax tissues and are ideal for these patients to obtain a harmonious and natural result.[36,40]

Initial signs of aging in Indians were noted much earlier than Caucasians.[10] The most common esthetic concerns are malar volume loss and jowls, followed by marionette lines, with a deep prejowl sulcus appearing earlier in Indians due to their smaller lower facial framework. Midfacial volume loss is a major cause for concern in Caucasians within their fifth decade, followed by Latin

Americans and Asian populations in their sixth decade. It is then in the sixth decade that Caucasians and Latin Americans present with perioral lines, but Asians are not especially troubled until the seventh decade.[9] While the concern over the progressive deepening of the nasolabial fold occurs in all ethnicities except African Americans by the fourth decade, concern over irregularities around the tear trough region appears in all ethnicities barring African Americans by the fifth decade. In general, people of African descent have a 10-year advantage over all other ethnicities when it comes to these regions.

Concerns regarding the aging neck across ethnicities remain largely unknown because of the paucity of publications in this regard. Darker skin is generally accepted to maintain its elasticity for longer.[21] Therefore, direct neck approaches without skin excision are a possible option for such patients, even at relatively older ages.

COMMON FEATURES OF FACIAL AGING ACROSS ALL ETHNICITIES

There is no escaping the stigma of facial aging. Despite controversy with regards to differences in skin attributable to race, overall, we are all very similar. In all ethnicities, the attenuation of the retaining ligaments with age leads to the downward displacement of the facial fat compartments. This is responsible for much of the stigma attached to age. The most noticeable changes with age occur over the mobile SMAS located in front of the fixed SMAS and anterior-inferior to the zygomatic cutaneous and masseteric cutaneous ligaments[39,41,42] (**Fig. 1**). The descent and deflation of this midfacial soft tissue in an anterior and inferior direction contributes to jowling, loss of definition at the jawline, marionette lines, prominent nasolabial folds, and volume loss in the malar region with both ptosis and atrophy of the skin and fat. Similarly, blunting of the cervicomental angle, platysmal bands, and laxity of the skin coupled with submental fat are the main stigmas of the aged neck for all.[43] Presently, for all ethnicities, a youthful facial contour rates highly for perceived health,[44] and it is well documented and widely accepted that a volumized yet smooth face with a defined neckline and subtle demarcations between facial subunits tends to appear youthful and healthy. A slender, well-defined neck with a small amount of fat and a sharp lower mandibular border is ideal. There should be no tethering, hollowing, or pendulous regions, and therefore the elasticity of the skin envelope should be maintained in all positions and from all angles.[45,46]

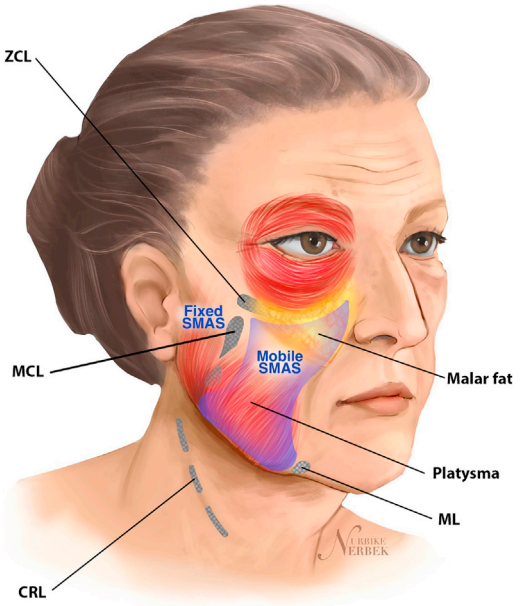

Fig. 1. The attenuation of the retaining ligaments leads to the downward displacement of the soft tissues of the face responsible for many of the stigma that occur with aging. The most prominent changes that occur with aging are anterior and inferior to the zygomatic and masseteric cutaneous ligaments (mobile SMAS). Retaining ligaments prevent the effective upward traction by suspension sutures to the SMAS of the face. Releasing of the zygomatic cutaneous ligament is important for malar repositioning, releasing of masseteric cutaneous ligaments is important for the effective correction of jowling, and releasing of mandibular ligament is important for correction of the prejowl sulcus and marionette lines. Releasing of cervical retaining ligaments is important for maximum improvement of the neck and definition of mandibular contours.

FACE AND NECKLIFT OPTIONS

The descriptive wording used to classify the variety of techniques of "face lifting" can at times seem confusing but reflects the development, heritage, and ingenuity of this surgery by passionate individuals through time.

Regarding the depth and extent of the surgical dissection, techniques can be divided into three groups. The first or "skin-only" techniques have been largely abandoned since the development of the SMAS technique by Skoog.[47] His technique allowed tension to be taken off the skin whilst also affecting changes beyond what was possible with earlier forms of facelift.

The second group is the traditional SMAS techniques of plication and imbrication.[48] Plication involves the folding over of the SMAS and its suturing into position without any incision of the

SMAS.[49] Imbrication involves incising the SMAS with a subsequent excision or alternatively a transposition, with or without a limited sub-SMAS dissection.[50] Neither technique divides the retaining ligaments of the midface (zygomatic cutaneous and masseteric cutaneous ligaments) and, therefore, both are limited in their ability to lift the midface and effect change to the nasolabial crease. The retaining ligaments of the face prevent effective traction by suspension sutures to the SMAS of the face. Inadequate or no release of the ligaments often leads to an unbalanced, unnatural appearance with an uncorrected nasolabial fold that remains despite surgery.[51–53] Attempts to improve the nasolabial folds with techniques, such as fat grafting to the malar region are more likely to result in a bizarre "overinflated" or "operated appearance." Additionally, the traditional SMAS techniques can lead to the development of a lateral sweep deformity, often delayed after what initially appeared to be successful surgery.[35,36]

The third group, or extended facelift techniques, involves the release of zygomatic cutaneous and masseteric cutaneous ligaments. SMAS dissection is advanced toward the midface along the superficial surface of the zygomaticus muscles, which allows for the repositioning of the malar fat. The correction of the nasolabial fold is only possible with the complete release of the zygomatic cutaneous ligaments, en bloc elevation of midfacial descendant tissues, and unopposed traction in a vertical vector (see **Fig. 1**). By releasing these retaining ligaments, it is then possible to reposition the midfacial soft tissue, reduce the depth of the nasolabial folds, and restore a more youthful lid–cheek junction contour without an operated appearance. Extended facelifts result in a balanced, harmonious rejuvenation of the midface, cheeks, and lower face without requiring a separate midface lift procedure.[51–53] Overall, it would therefore seem logical to restore perceived health and youth to all racial subtypes by addressing the main concerns of all ethnicities: the deepening nasolabial folds and midfacial changes.[36,37,54] However, the problem is that most facelift surgeons are hesitant to transect the retaining ligaments during a facelift because of the risk of facial nerve injury and the complex anatomy. The prezygomatic space dissection[55] (under or deep to the orbicularis oculi muscle) allows for a wide and adequate exposure of the main zygomatico-cutaneous ligament and safe release.[37,56,57] Moreover, a recent systematic review and meta-analysis showed that extended techniques while identifying and preserving the anatomy often lead to lower complication rates than the commonly held belief that it is better to avoid vital structures by blindly working around them.[58]

The main extended facelift techniques include the deep plane,[51] the composite plane,[36] the extended SMAS,[59] and the high SMAS technique.[60] The deep plane[51] or composite techniques[52] have the advantage of elevating the flap as a single laminated unit composed of skin, malar fat, and SMAS (**Fig. 2**). This helps to preserve a robust vascular supply to the skin whilst also avoiding the unnecessary dissection of the fixed SMAS over the parotid. The composite facelift technique includes the inferior portion of the orbicularis muscle so that a stronger flap is preserved and that in turn helps to reposition the ptotic malar fat more effectively while also diminishing the nasolabial folds [40,52] (**Figs. 3** and **4**).

The neck lift is often neglected and given less attention than the face lift. Careful analysis will often reveal that for many, the main problem is not the face but the neck. A variety of different techniques have been used to improve the changes seen within the neck, but they are often tailored to the needs of the individual patient. The hallmark of a surgeon committed to his or her craft is apparent by the way in which he or she manages the aging neck.

The lateral pull of the platysma through a facelift incision is very effective in producing a tight neck. However, neck esthetics can be further improved by releasing the retaining ligaments of the neck and undertaking myotomies to the platysma

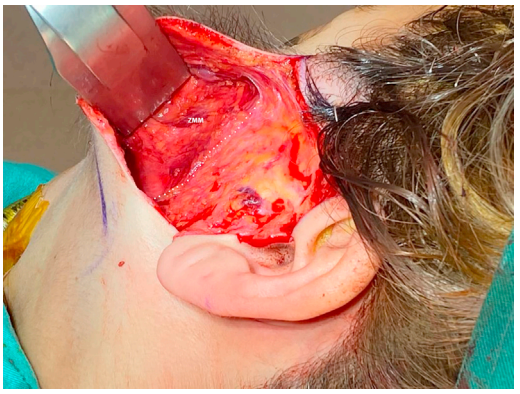

Fig. 2. The operative view of a modified composite facelift shows a wide sub-SMAS dissection with complete release of zygomatic and masseteric ligaments allowing for the effective repositioning of an "en bloc" composite flap consisting of the orbicularis oculi muscle, malar fat, SMAS (platysma), and skin. ZMM indicates the zygomaticus major muscle, and the dotted white line shows the sub-SMAS (deep plane) entry point.

Fig. 3. (*A*) and (*B*) Preoperative (*left*) and 1-year postoperative (*right*) photos of a patient who underwent a modified composite facelift with extended neck dissection, and deep neck work through submental incision.

muscle so that it can be redraped more effectively over the deep neck structures.[61,62] The cervical retaining ligaments secure the platysma to the sternocleidomastoid muscle and prevent the mobilization and redraping of the platysma during neck and facelift surgery (see **Fig. 1**). Extending the subplatysmal dissection 4 to 5 cm inferior to the mandible allows for the safe release of the cervical retaining ligaments.[54,56,59,61,63] Adding a horizontal myotomy below the mandible can facilitate a dual vector suspension that improves the cervical contouring and enhances the jawline rejuvenation whilst avoiding blunting of the jawline contour.[56,63] In most cases, a wide subcutaneous undermining should be considered to allow for adequate redistribution, redraping, and

Fig. 4. (*A*) and (*B*) Preoperative (*left*) and 6 months postoperative (*right*) photos of a patient underwent modified composite facelift with extended neck dissection, and deep neck work through submental incision.

repositioning of the skin while also decreasing the horizontal neck lines due to tight adhesions between the skin and deep structures. This helps to effectively eliminate the stigma of aging in the neck.[64–66] Although closed liposuction of subcutaneous fat is one of the most common techniques applied to improve neck contours, excess removal can lead to potential problems, such as unpredictable tethering, scaring, and skeletonization of the neck. Trimming of fat with scissors under direct vision through a submental incision helps to reduce such problems.[64,66,67] Besides, there are almost always some additional contributing factors, such as platysmal bands or dehiscence, subplatysmal fat, prominent digastric muscles, and submandibular glands that can interfere with exceptional neck rejuvenation.[64–67] Opening the neck through a submental incision allows for the management of such deep neck problems and can avoid the requirement of further revision neck rejuvenation surgery. Midline platysmaplasty techniques are often required for optimum results where there is excess or redundancy of the platysma muscle.[65,68] Subplatysmal fat can be a significant covert contributor to neck aging.[67,69] It is vital that removal of subplatysmal fat is undertaken

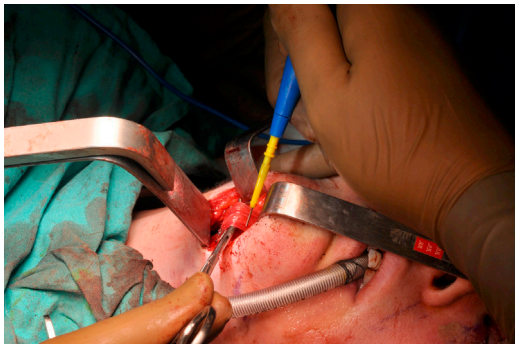

Fig. 5. Operative photo shows partial reduction of the anterior belly of digastric muscle with a cutting cautery to improve the deep neck profile.

carefully and artistically, as excess removal between the two digastric bellies can lead to an esthetically unattractive "dug out" neck contour when performed without a reduction in the digastric muscle volume.[66,67] Additional contributing factors to the obtuse neck are the prominent anterior bellies of the digastric muscles and hypertrophied submandibular glands. Partial removal of these deep neck structures assists in achieving a more desirable smooth and slender neck contour[64,66,67,70,71] (**Figs. 5** and **6**). In an otherwise well-executed neck lift, the avoidance of deep neck work is often complained about by patients and can be seen by the well-trained eye in postoperative photos. As an ancillary procedure, the release of the mandibular retaining ligaments (**Fig. 7**) effectively addresses the prejowl sulcus and marionette lines and is often a prerequisite. Due to its proximity to the marginal branch of the facial nerve, a subcutaneous plane through a midline submental incision is preferred as a safe approach.[72] Additional procedures may be beneficial for the management of mid-facial volume either through restoration by autologous fat transfer or reduction with buccal fat pad removal in some ethnicities/individuals.

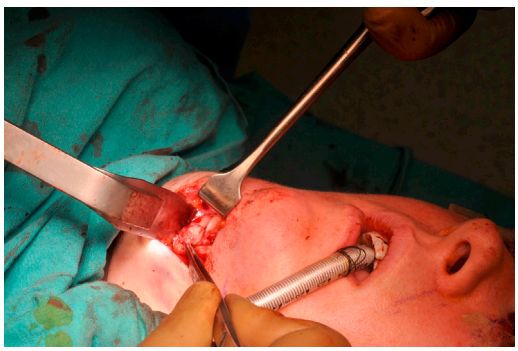

Fig. 6. The operative view showing hypertrophied right submandibular gland before its partial removal.

Fig. 7. Image shows subcutaneous release of the mandibular retaining ligament (ML) through the submental incision. This approach protects the marginal mandibular nerve from injury and allows the effective release of the ML helping to address the prejowl sulcus and marionette lines.

SUMMARY

There is an ongoing shift in the utilization of cosmetic procedures across ethnicities. Durable, natural-looking rejuvenation is not attainable unless the changes seen in aging are addressed effectively and harmoniously in all ethnicities. Although rejuvenation surgery shares common goals, the surgeon must consider each patient's individual motivations for surgery whilst also being aware of their own unconscious biases when it comes to ethnicity, aging, and beauty. Informing the patient on the limitations of the surgeries because of their specific condition, offering more aggressive techniques with additional maneuvers, and providing realistic expectations are extremely important. Face and neck lift techniques that involve the complete release of retaining ligaments of the midface and neck will facilitate the effective repositioning of soft tissue and allow for the best possible natural results. Inadequate release of these ligamentous attachments may lead to an unbalanced, unnatural appearance and may potentially result in the lateral sweep phenomenon. Additional maneuvers, such as fat injection, platysmaplasty, subplatysmal fat removal, partial resection of digastric muscles or submandibular glands may be required to provide long-term patient satisfaction.

DISCLOSURE

The authors have nothing to disclose.

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