A Progressive Approach to Neck Rejuvenation

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KEYWORDS

• Necklift • Facelift • SMAS • Individualized care • Natural results • Facelift evaluation
• Rhytidectomy • Surgical technique

KEY POINTS

- The progressive approach to neck and facial rejuvenation is a comprehensive method for evaluation and correction of common aging changes seen in the lower face and neck.
- The progressive approach takes into account a thorough preoperative assessment but also relies on systematic intraoperative evaluation of each patient as the procedure progresses so as to make surgical decisions based on the maximal amount of information obtainable.
- The ongoing assessments through the surgical procedure itself promote a decision-making process that ensures that appropriate and sufficient steps are taken to correct the aging changes discovered in each patient thoroughly and in a manner most conducive to the structure of their particular anatomy.
- The surgical results with this approach are natural in appearance, as the rejuvenation method chosen is specifically and continuously adjusted for optimal results in the particular patient throughout the evaluation and surgical process.
- The increased burden on the surgeon to master a variety of techniques and to develop the judgment needed to decide in a progressive manner which is the most appropriate for use in each patient is more than compensated for by improved results and greater patient satisfaction.

OVERVIEW AND HISTORY OF RHYTIDECTOMY

Approaches to neck rejuvenation have progressed steadily since the inception of the formal description and teaching of rejuvenation techniques effective in the neck and lower face in the early twentieth century. Beginning with techniques based only on skin elevation and advancement with or without lipectomy, a wide variety of techniques have been advanced and advocated by various groups of surgeons over the years. More aggressive management of the supportive tissues of the face and neck provided increasingly satisfying and durable results but are more complex surgeries, typically with more extended healing times. Most technique development occurred in North America in the twentieth century and is summarized as follows.

Direct Lipectomy

In the early twentieth century, several European surgeons including Lexer,[1] Bourget,[2] and Passot[3] reported successful improvement in the contours of the aging neck and face with techniques involving elevation and advancement of the facial and neck skin. These techniques were associated with various degrees of direct lipectomy. The primary differences among these techniques were length and placement of incisions and the extent of skin undermining performed. At this point in the evolution of rhytidectomy, there was no consideration given to manipulation of the deeper supportive tissues of the face and neck. Results were of limited degree and short duration, with a significant incidence of unfavorable scarring and unnatural appearance due to the tension placed

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on the skin flap and incisions exceeding the ability of these tissues to support and maintain the repair. Despite these limitations, skin-only rejuvenation procedures were the mainstay of the surgical treatment of neck and facial aging for many decades.

Platysma

The next major innovation in rhytidectomy technique occurred in 1968, with Tord Skoog's[4] description of a procedure that included the platysma muscle in the lower face and neck as a composite unit with the skin flap. This significant improvement allowed much better correction of contours along the jawline, as the inclusion of supportive muscular and fibromuscular tissue allowed a more robust reconstruction of facial contour than was possible with skin-only approaches. The technique was still limited in its ability to manage jowl formation, and the fatty fullness that is often present in the lower face along the jawline was not directly addressed. There was no real consideration of management of the position of midface tissues and the nasolabial fold was not improved significantly. A large series of Skoog rhytidectomies was reported by Lemmon and Hamra[5] and confirmed the limitations inherent to the technique.

SMAS

The next major development in the refinement of rhytidectomy technique was the description of the superficial musculo-aponeurotic system (SMAS) as a discreet fibromuscular tissue layer by Mitz and Peyronie.[6] The recognition that the SMAS comprised the primary supporting and contour-defining structure of the lower face and neck has served as the theoretical basis for most popular rhytidectomy techniques in use today. A variety of approaches to the SMAS and different methods of dissection, manipulation, and repositioning of this tissue have been advocated over time by various investigators. The popularity of different methods and their associated degree of invasiveness has waxed and waned rather than progressed steadily toward more extensive procedures. When SMAS repositioning is limited to the lower face, regardless of method chosen for advancement and fixation, then efficacy for correction of the neck is limited.[3] The mobilization and advancement techniques possible with an SMAS approach allow some choice in advancement vectors for the SMAS, including development of segmented flaps that can advance in differing directions. This may allow greater flexibility of correction in the lower face and neck compared with methods limiting advancement to a single vector. When needed, it is also possible to use different vectors of advancement for the SMAS and the skin. There is a variety of opinion regarding the most favorable vectors for advancement of the SMAS through the range of possibilities from oblique to vertical advancement of the tissue. In recent years, the popularity of more vertical advancements of the SMAS has increased, with advocates arguing that more natural-appearing results are obtained along with better correction of the neck due to the lifting of the platysma as an integral unit with the SMAS along a sliding plane over the deep cervical fascia.

Specific methodology for advancement and fixation of the SMAS covers a wide range of techniques. Plication techniques[7] encompass a group of procedures in which the SMAS is folded upon itself and fixated with suture. The simplest approach to managing the SMAS, the technique is relatively safe with no exposure of the facial nerve. Bunching of the SMAS may occur as it is gathered within the sutures, however, creating the risk of contour irregularities that may be challenging to manage. Imbrication techniques were developed that purported to avoid some of these difficulties. By removing segments of SMAS in a variety of configurations, the necessity of folding tissue can be eliminated; however, the plane of tissue advancement is dictated by the segment excised and may not always provide the optimal improvement in facial contour for a given patient. Additionally, there is some greater risk of the facial nerve being affected when the SMAS is excised, particularly if this excision is done anterior to the parotid gland. In recent years, a variety of named lifts have been advocated, such as the S lift and O lift, which are essentially variations of an SMAS plication lift using specific conformations of suture placement.[8] Thus, the popularity of both plication and imbrication techniques remains high, and in properly selected patients the results are quite good. These techniques are often performed through limited incision approaches, increasing their appeal to patients desiring less-invasive procedures with shorter healing times.

Deep Plane

Hamra's[9,10] description of the deep plane facelift and the composite facelift represent the next major advance in the development of facelift technique. Realizing the limitations imposed by traditional SMAS techniques, including limited mobilization of midfacial structures and minimal improvement at the nasolabial fold, Hamra's techniques advanced a method for mobilizing a robust composite flap of SMAS, platysma, cutaneous