



REVIEW ARTICLE

Evolution of the rhytidectomy



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Abstract Since the advent of facelift surgery, there has been a progressive evolution in technique. Methods of dissection trended towards progressively aggressive surgery with deeper dissection for repositioning of ptotic facial tissues. In recent decades, the pendulum has swung towards more minimally invasive options. Likewise, there has been a shift in focus from repositioning alone to the addition of volumization for facial rejuvenation. The techniques in this article are reviewed in a chronologic fashion with a focus on historical development as well as brief discussion on efficacy in relation to the other existing options. There is currently no gold standard technique with a plethora of options with comparable efficacy. There is controversy over which approach is optimal and future research is needed to better delineate optimal treatment options, which may vary based on the patient.

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Introduction

The last several decades have seen significant growth in facial esthetic surgery, not only in quantity, but quality. Consistent improvements in surgical technique as well as treatment strategy have grown naturally out of a greater understanding of facial anatomy and the aging process. Few procedures have seen as much innovation over the years as the facelift procedure. With this in mind, it is hard to believe that the facelift is just over 100 years old.

While esthetic surgery is relatively commonplace and socially acceptable in modern society, its early 20th century beginnings were secretive in nature. There was animosity against esthetic procedures, even by the surgeons who secretly performed the operations. In the 1920s, the American medical community attempted to ban cosmetic surgery.¹ This prompted the early pioneers to perform these surgeries in private clinics or purposely mis-label cases on operative logs to avoid discovery. Publication of surgical techniques was avoided for years. For this reason, the true origin of the facelift procedure is unclear.

We do know that surgeons in both Europe and America were employing early facelift techniques by the early 1900s. Eugene von Hollander is often credited with the first facelift, stating in 1932 that his original procedure was performed on a Polish aristocrat in 1901.² Hollander first mentions the performance of this procedure in a chapter entitled "Cosmetic Surgery" in 1912, though he did not mention the actual date of the procedure until later.³ In his chapter he discussed making elliptical skin excisions in natural skin folds near the hairline and ears. Similarly, in 1931 Lexer finally reported his performance of s-shaped excisions in the temporal region and elliptical incisions along the forehead and hairline for an actress in 1906.⁴

Charles Miller may have been the first American to perform a facelift, publishing an article discussing his techniques in 1907.⁵ Still others, including Joseph, Passot, and Bourget described similar techniques involving elliptical excisions to treat the aging face around the same time.⁶⁻⁸ Bourguet, however, was the first to describe subcutaneous dissection with undermining, as well as fat excisions to correct periorbital fat pads.⁹

It was not until the end of the World War I that innovations in facial rejuvenation really gained traction. The wake of the World War I saw a high demand for reconstructive surgery, which provided a foundation for the facelift. Likewise, an increase in surgeons, the wealth of Americans, and the increasing quality of anesthesia contributed to the evolution of facelift techniques.¹⁰ More surgeons began publishing their techniques. Noel contributed to the literature in 1926, publishing a book describing facialplasty, blepharoplasty, forehead and neck lifting.¹¹ In 1920, Bettman described a continuous temporal scalp, preauricular, postauricular, and mastoid incision that is very similar to the cutaneous incisions made in standard facelift procedures today.¹²

By the 1960s, surgeons began addressing the deeper tissues in order to compensate for the limitations of the subcutaneous facelift. Aufrict first promoted suturing deep to the superficial fat in 1960.¹³ Skoog is credited with the

first description of facelifting that included dissection of the deeper fascial layers. He described dissection of the superficial fascia of the face, which he termed the "buccal fascia", in continuity with the platysma in the neck. At the completion of the dissection, the flap was repositioned in a superoposterior direction and secured to the parotidomasseteric and mastoid fascia.¹⁴ In 1976, Mitz and Peyronie used the knowledge they gained from anatomic cadaver studies to describe the superficial musculoaponeurotic system (SMAS). They noted this layer was continuous with the platysma of the neck, the temporoparietal fascia of the scalp, and enveloped the facial mimetic musculature.¹⁵ The discovery of this fascial layer, distinct from the parotidomasseteric fascia, paved the way for modern facelifting techniques.

Further progress was made when Furnas described the ligaments of the midface in 1989. Knowledge of the midfacial ligaments provided an improved understanding of the support system of the facial soft tissues and the role they played in the aging process.¹⁶ More modifications of the facelift ensued culminating in a focus on retaining ligament release in a sub SMAS, or deep plane dissection. Still other surgeons developed subperiosteal techniques for facial soft tissue repositioning with the primary goal of resuspending descended malar fat to the malar eminence.¹⁷⁻¹⁹ In recent decades, volumizing procedures such as injectable fillers have enhanced outcomes. Likewise, an emphasis on more minimally invasive techniques has become part of the facial rejuvenation armamentarium. These include limited lifts and other non-surgical lifting procedures.

In the remainder of the article, we review the evolution of common facelifting procedures used today, with brief discussion technique and efficacy. The goal is to provide a basic understanding of both the development and role of each technique in modern facial plastic surgery.

Subcutaneous facelift

As previously described, early techniques focused on small local incisions near the hairline in natural skin creases, with excision of skin strips and closure without undermining. Modern techniques involve combining temporal hairline incisions with a pre or post-tragal incision that curves around the lobule postauricularly and ultimately terminates in the occipital scalp. Bourget and Bettman are credited with combining these incisions with undermining of a large random pattern skin flap.¹² Joseph was the first to introduce the concept of the post-tragal incision to the vertical preauricular incision in 1928.¹³

The main purpose of the subcutaneous lift is to tighten the loose facial skin and remove the excess without addressing the deeper tissues (Fig. 1). It is an easy and safe procedure, resulting in improvement in the lower face and neck. However, this technique fails to address ptosis of the midface and does not address the effects of aging on structures deep to the skin. Without re-suspending the deeper tissues, the skin flap is naturally placed under tension leading to loss of effect secondary to the inherent elasticity of the skin. For this reason, the subcutaneous technique is typically used in selected situations where skin laxity is the main issue.

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