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Review Article

Surgical facelift a new horizon in science and technology: An overview and new supervene ensuing better outcomes in esthetics

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ABSTRACT

A facelift, also known as a rhytidectomy, is a surgical procedure that improves visible signs of aging in the face and neck, such as sagging caused by relaxation of the skin, deepening of the fold lines between the nose and corner of the mouth, fat that has disappeared or fallen, the development of jowls in the cheeks and jaw, loose skin, and excess fat of the neck that can appear as a double chin or "turkey neck." A number of factors can cause the face to lose its youthful contours, including thinning skin, fat loss, gravity, sun damage, smoking, heredity, and stress.

Brow lifts and eyelid surgeries are additional operations that can be used in conjunction with a facelift to revitalize aging eyes. It may be suggested to use fillers or fat transfer to replace the lost fatty volume. Skincare procedures including lasers, dermabrasions, and peels could be recommended to enhance the skin's texture and quality. In the century since it was first introduced, the facelift procedure has seen a significant change. Numerous safe, reliable, and efficient surgical techniques have been developed because to the information gathered by earlier surgeons. There is currently disagreement in the literature regarding the most effective strategy. This indicates that, in the hands of an experienced surgeon, several available surgical options are comparable.

Many proponents of the various popular approaches have developed strong cases to back up their positions. The lack of consensus emphasizes how crucial it is to constantly innovating in order to meet patient expectations, enhance longevity, and achieve good surgical outcomes. Similarly, further examination of current methods via carefully planned research is essential for the final creation of a "gold standard." One can observe a similar level of progress in facelift development over the next century, with a focus on the use of new technology and a tendency in that direction. This review article focuses on face lift technique and associated problems experienced medical professional.

1. Introduction

The impact of contemporary culture on youth is also evident while perusing newspapers, periodicals, or television programs that elevate youthful, attractive people while devaluing older, wrinkly ones. People who are younger tend to view older people as ugly, unwanted, and defenseless. Surgeons from Europe and America started enhancing this procedure in the early 20^{th} century by adding fat removal and extensive skin undermining.[1] Even while World Wars I and II caused terrible suffering for civilians, they also created an environment that helped progress facial surgery procedures. As a result, surgeons are now better equipped to treat facial damage because of the advancements in anesthetics and antibiotics. Simple animal tissue anaplasty was practiced for years until new techniques were introduced in the 1970s.

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Skoog described the "buccal connective tissue" facelift procedure, which is a continuous facial flap attached to the mastoid animal tissue and the striated muscle of the neck, resulting in the superficial fascia of the bottom third of the face. Skoog realized that he could regulate the alterations to the jawline that went beyond the earlier types of a facelift by pushing the underlying fascial layers and taking use of the overlying skin linked. By the late 1970s, improving the neck by changing the striated muscle and cutting away animal tissue fat was a widely accepted procedure.

In 1976, Mitz and Peyronie named the superficial muscular and facia system (SMAS), as investment fascial layer among the duct gland and cheek areas that surrounds the facial mimetic system.[2] The recognition that this fascial layer functions mutually as a single unit reworked the approach to facelift surgery. We have a tendency to presently reposition the SMAS and rely on its strength to allow for stripped tension on the skin closure and largest longevity of the facelift. Aesthetic rhytidectomy involves techniques for the "enhancement" of appearance via surgical and medical techniques and is specifically involved maintaining normal look, restoring it, or enhancing it somewhere nearer to the esthetic level. For a long time, the only real aim of facial aesthetic surgical was alteration of the skin, to cut back wrinkles and folds.[3–5]

1.1. Anatomical consideration

It is necessary to understand the fundamental five-layer structure of the superficial soft tissues over the facial skeleton, to grasp the discourse connection of the SMAS. This ‘layer’ thought is well-established traditionally, and systematically described at intervals in the literature.

Layer 1: Skin.

Layer 2: hypodermic tissue, as well as the fibrous retinacular body covering.

Layer 3: Frontalis (upper face), SMAS (mid-face), facial muscle (lower face and neck).

Layer 4: Along with these 3 outer layers unite to form a composite anatomical unit, that is fastened in areas through ligaments within the sub- SMAS.

Layer 5: Investment layer of deep facia on the muscles of mastication or the periosteum membrane, where the skeleton might not be hid by these muscles. The surgical literature describes variations that occur periodically in the five-layer composition over the face and in completely different features of the cheek. The orbit and oral areas exhibit the majority of variations in the basic five-layer soft tissue composition. The soft tissues extend beyond the skeletal apertures to form the center cheek, lips, and eyelids. The vertical line of face masseteric retentive ligaments near the masseter’s medial border divides the cheek’s lateral from anterior regions. According to the arrangement across the orbit, the deeper soft tissues of the central cheek and the buccal fat are overlaid by the superficial layers, which pass medially to the current boundary. The region-specific anatomy of the SMAS is within the forehead, parotid, zygomatic, and infraorbital regions and the nasolabial fold with the lower lip. The SMAS forms one continuous, organized fibrous envelope, comprising albuminoid fibres, elastic fibres, fat cells and muscle cell, and connects the facial muscles with the derma.[6–8] The hypodermic fat of the body is divided from the muscle compartment by an investment layer of facia encasing all muscles of the body.

2. Types of Surgical Techniques

2.1. The high SMAS facelift

The face elevate technique called the “high SMAS” procedure was developed within the early Eighties as variation of the approach by Tord Skoog. Our early anatomic studies documented the good thing about leaving the skin and hypodermic mass connected to the SMAS in facial rejuvenation. The challenge was to try and do therefore, however still attain adequate mobilization and re location of the cheek. The second goal was to elevate the whole hypodermic cheek mass, each malar and inframaxillary, as one unit suspended by the SMAS. No portion of the cheek relocation was to rely on dermal pull. We have a tendency to read the cheek as having two components: the lower 2 thirds is that the hypodermic cheek mass; the higher one third is that the Lower lid suspension with its ptotic periorbital orbicularis which may be a necessary adjunct to high SMAS cheek suspension as a result of the 2 areas overlap. Most patients additionally receive some submental repair, sometimes of a “corset” kind, yet as a forehead redraping procedure. I think powerfully in mixing the facial units to preserve harmony in tone, as opposed the normal segmental or quilting approach. Here, specialise in the surgical steps of location the hypodermic cheek mass with the high SMAS technique.[8]

2.2. Composite facelift

Many of the fundamental concepts of facelift surgery have not changed since the procedures were first introduced, even with the advancements made in the last 20 years in body contouring and face-lifting. The benefit of using less complicated facelift surgery techniques has been demonstrated to support the acceptable outcomes observed in the postoperative phase after patients have a degree of edema that allows them to return to a regular lifestyle. Unfortunately, individuals who had this operation may not look as nice as they would have liked, which could cause the effects to fade too soon.[9] Up to recently, these results are powerful to correct. The composite facelift has evolved over a thirty-year quantity, by bit adding and developing various techniques that influence separate elements of the face. The evolution that began with an easy hypodermic raise has become a comprehensive or

international procedure that influences every deep structure of the aging face whose character influences the face. Facelifts ordinarily appear to be similar to the overall public and even to aesthetic surgeons who do not appear to be actively involved throughout a facelift observe, there are definite and clear variations between customary facelifts and composite facelifts.[10]

3. Facelift

The modern concept of facial rejuvenation places less emphasis on the stigma associated with surgery and more on harmonious, natural wanting. Up till now, a number of methods have succeeded in raising the midface by using different strategies for the anatomical placement of tissues. Currently, however, volume and vectors are solely linked to achieving the midface age symptoms with additional natural outcomes. Light-emitting diode to the notion of locating volume as a three-dimensional tissue structure propelled upward in a highly vertical direction due to improved comprehension of the facial aging procedure.This theory is supported by the measurement of facial rejuvenation techniques in ongoing investigation. Hindere, a pioneer in the anatomical description of the periorbital region and more specifically, the nasojugal groove, is credited with initiating the development of techniques. He delineate open surgical techniques for locating tissues during this region, via lower blepharoplasty incision.[10]

Since 1991, additionally to the periorbital region, attention conjointly turned to the midface, particularly with the work of Isse and Ramirez. And conjointly Graf, instructed scrutiny repositioning of middle facial tissues. New surgical principles were introduced, like preservation and repositioning of the periorbital fat, treatment for muscles of glabellar region, and locating of orbicular is muscle and suborbicular is oculi fat (SOOF). The open approach discussed here, through lower blepharoplasty incision, permits direct fixation of tissues on inferior orbital rim membrane, respecting vertical vectors, therefore the higher nasolabial fold and lid-cheek junction are measured directly improved. So as to get the specified, lower protective fold tension and to keep up a natural and young aesthetic of protective fold form, a lateral canthopexy is performed. common and heavy complications of blepharoplasty, scleral show and ectropion, are greatly decreased as a results of the midface direct fixation and also the lateral musculararcanthopexy.here in order to correct the neck and the lower third of the face (cervicomental angle, jowls, and puppet grooves), we put a pair of purse string sutures.[11]

3.1. Minimal access suspension facelift (MACS)

The stripped access suspension (MACS) is performed under anesthesia for 120 to 150 mins, which does not include a lateral tension and leads to a brief scar using a vertical vector for the lower and middle third of the face. According to the authors, its results are not only stable nut also decreases the recovery time and morbidity rate. Encouraged by the results of different less invasive face carry techniques, we have performed the stripped access suspension (MACS)–lift as our primary surgical facial rejuvenation procedure throughout the last seven years.[12] A brief scar facelift using a vertical vector only to elevate the deep tissues and skin may be called a MACS-lift. Through a preauricular and temporal prehairline incision, the MACS-lift strongly anchors permanent or slowly resorbable purse-string sutures to the deep temporal facies, suspending sagging facial soft tissues. We go over two variations of the process: (1) the extended MACS-lift (X-MACS), where we typically place a supplementary (third) string suture to suspend the malar fat pad; and (2) the simple MACS-lift (S-MACS), where we place a pair of purse string sutures to correct the neck and the lower third of the face (cervicomental angle, jowls, and puppet grooves). This suture can have an additional impact on the nasolabial groove, the midface, and also the lower protective fold.[13]

3.2. Minimal incision facelift

Procedures to boost facial prolapse are performed since the twentieth century. Initially, these consisted only of connective tissue dissections and easy skin excisions. Over time, rhytidoplasty techniques have evolved an excellent deal. In 1974, Skoog described a subfascial dissection. 12 years later, this fascial plane was delineated by Mitz and Peyronie as the superficial musculoaponeurotic system (SMAS).[2] Evolution of the procedure continued with the event of the subperiosteal, deep-plane, and composite facelifts within the latter a part of the century. However, these additional aggressive techniques have been related to magnified complications and prolonged recovery time, particularly with reference to dropsy and ecchymosis. Due to this, the senior author has developed a replacement technique to minimize complications and surgical recovery time whereas maximizing aesthetic results, significantly within the neck and jowl space. This new technique utilizes stripped incisions. Historically, facelift incisions are carried into hair-bearing skin in each the temporal and postauricular areas. This system needs no incisions in hair bearing skin. This has verified to be extraordinarily useful in avoiding each baldness and changes within the temporal or bone hairlines. Additionally, to the present stripped incision, a brief skin flap is elevated. Also, a submentoplasty is performed. Despite this stripped incision–short flap technique, a full SMAS flap is well elevated. Protein glue (Tisseel) is employed, preventating the necessity for drains or dressings postoperatively. With this

system, we've been ready to maintain favorable aesthetic results whereas minimizing dropsy, ecchymosis, and complications like hematomas.

3.3. Facial thread-lift

Since, the earliest reports of facial surgical rejuvenation by Miller and Kolle, additional study and fewer invasive measures of rejuvenating the face are wanted. A much better under-standing of the alterations that occur to facial soft tissues, leading to an aged look, has allowed the event of recent techniques to take care of the particular anatomy of facial aging. Following that, rejuvenation techniques developed from skin-tension-only procedures, engrossment on a spread of dis-section and fixation planes: hypodermic, sub-SMAS (super-facial muscular facia system) and subperiosteal. It is accepted nowadays that, in spite of the technique used, any facelift procedure ought to think about the very fact that the deeper tissues should be repositioned or crammed before the skin is force and resected.[14 15] For all of these techniques, soft tissue suspension with absorbable or non absorbable sutures is important. For many years, surgical lifting involving the excision of excess skin has been the gold standard for lifting procedures. This is a drastic and often stigmatizing medical solution. Soft tissues are now located in a more anatomical vertical orientation because to advances in our understanding and appreciation of the vectors that must be used to achieve optimal tissue elevation. Surgical operations, however, come with manageable hazards associated with general physiological conditions or maybe acutely conscious sedation, such as infection, skin death, hematomas, seromas, and damage to the frontal and marginal branches of the cranial nerve. They both have something to do with obvious scars and taking longer to heal.

In several things, patient prefer minimally-invasive procedures and are willing to simply accept a minor degree of esthetic improvement reciprocally for decreased morbidity and speedy healing. Non-surgical rejuvenation by volumetrical increase with many kinds of interventions, as well as injections with a spread of gels or fat, additional the "third dimension" to facial rejuvenation. However, better results are according shown and may be achieved once performed by consultant who are creative, the application of fillers might ensue accumulated facial volume with unnatural contours, visibly shifting the gravity center of the face to its lower third. Ablative or non-ablative resurfacing techniques enable the advance of the skin surface, however don't adequately elevate the underlying ptotic tissues, a crucial step in achieving a younger look. The use of threads for facelift procedures isn't a brand-new plan. This procedure involves the passage of suture fragmentise the skin of the face and neck to atone for sagging and flaccid tissues, avoiding giant incisions and greatly reducing recovery time.

4. Complications

4.1. Intra-operative complications

4.1.1. Parotid duct injury

Parotid duct injury to the salivary gland duct might occur on the anterior border of the facial muscle on a line from the external acoustic meatus to the higher lip. If it's burned, the distal finish of the duct is cannulated with a tiny low tubing and passed retrograde into the sphere so passed into the proximal cut finish. The duct may be sutured with 6-0 nylon sutures and therefore the tubing left in situ for concerning two weeks.[16]

4.1.2. Facial nerve branch injury

Injury of branches of the nervus facialis will occur during flap dissection if the dissection is simply too deep. The temporal branch is most vulnerable anterior to the temporal hairline therefore dissection here should be superficial with observation of the superimposed hair follicles within the skin flap to Marginal articulator and cervical branch injuries are potential if the dissection below the articulator border extends at a lower place the facial muscle. Bipolar cautery is useful in areas wherever the nervus facialis branches are superficial, like the temporal and cheek regions.[17,18]

4.1.3. Spinal accessory nerve injury

More posteriorly, injury to the nervus accessorius nerve will occur if the dissection becomes too deep. a decent superficial landmark to stay in mind is Erb's purpose, that may be a purpose on the posterior border of the sternocleido mastoideus.

4.2. Post operative complications

4.2.1. Hematoma

Hematoma formation typically happens within the primary twenty-four hours following surgery, and is that the foremost typical operative complication, if there is very important pain or uneven swelling, the dressings unit of measurement at once removed and additionally the flaps inspected. The incision is opened, clots exhausted, hemorrhage controlled, and additionally the incisions closed over a vigorous drain. Early associated prompt intervention reduces the prospect of associated anatomical structure compromise to an already compromised flap.[18,19]

4.2.2. Infection

Although infection after anaplasty is rare, it can happen as a result of a stitch symptom or, less frequently, a suture reaction to the tragal animal tissue. The problem is usually resolved with local wound care and an antibacterial ointment when the troublesome suture(s) are

removed. essential oral antibiotics to conceal streptococcus, pseudomonas, and coccus to prevent irreversible animal tissue damage in the event of erythema and soreness to the auricular cartilage.

4.2.3. Scarring

After a clean, well-done facelift, noticeable scars are rare. If evidence is found to be in opposition to the aforementioned methods, persistent scars may respond to periodic dye optical device medical care and usually require several treatments.[20] The optical gadget also lessens the telangiectasia that develops after receiving continuous injections of steroids. Once incisions are made on the hairline rather than behind it, hypopigmented scars are more frequently seen on the posterior hairline.

5. Conclusion

In the century since it was first introduced, the facelift procedure has seen a significant change. Numerous safe, reliable, and efficient surgical techniques have been developed because to the information gathered by earlier surgeons. There is currently disagreement in the literature regarding the most effective strategy. This indicates that, in the hands of an experienced surgeon, several available surgical options are equivalent. Many proponents of the various popular approaches have developed strong cases to back up their positions. Similarly, further examination of current methods via carefully planned research is essential for the final creation of a "gold standard." With an emphasis on the use of new technologies, the development of face lifts during the past 100 years appears to have advanced to the same extent.

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7. Conflict of Interest

None.

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