Chapter 22 Facelifting: The Treatment of the Lower 1/3 of the Face



Jose Carlos Daher and Leonardo Martins Costa Daher

22.1 Introduction

The search for youth by humans found in plastic surgery is one of its main tools: facial plastic surgery. The first reports on the subject date from the beginning of the century; however, the great demand occurred in the 1960s of the last century. This theme had great evolution initially by the development of western capitalism that values and demands the youth of the people for maximum performance and production, and in response, plastic surgery presented more modern and efficient techniques. The great pillar for the development of the techniques and its wide dissemination in Brazilian society and beyond our borders was Ivo Pitanguy, who developed a school which supported and continued his work through his disciples who, from then on, developed other plastic surgery schools. Today, there is a myriad

J. C. Daher (🖂)

Brazilian Society of Plastic Surgery SBCP, São Paulo, Brazil

International Society of Aesthetic Plastic Surgery (ISAPS), São Paulo, Brazil

Brazilian College of Surgeons (CBC), São Paulo, Brazil e-mail: daher@hospitaldaher.com.br

L. M. C. Daher Brazilian Society of Plastic Surgery SBCP, São Paulo, Brazil

International Society of Aesthetic Plastic Surgery (ISAPS), São Paulo, Brazil

Division of Plastic Surgery of Hospital Daher, Daher, Brazil

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Division of Plastic Surgery of Hospital Daher, (accredited by the Brazilian Society of Plastic Surgery) SHIS QI 07 Conjunto F, Hospital Daher, Daher, Brazil

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of procedures and technical approaches to reach the same goal of facial rejuvenation. A critical analysis of all is necessary, so that it can be defined which combination of resources are most convenient.

22.2 History

The initial technique was performed in the 1901 by the German surgeon, Eugene von Hollander, which consisted of small skin excision strips in the antero-auricular and temporal regions [14]. The results were poor. Such surgeries occurred, and the atmosphere of disapproval by society and the medical profession existed. From that point on, techniques progressed to larger incisions with tissue undermining, already delineating the thought that the rescue of youth and rejuvenation would come from the removal of wrinkles by stretching the skin. For this reason, it is called rhytidectomy or rhytidoplasty, wrinkle excision, from the Greek words rhytides meaning wrinkles and ectomy, excision.

The progress on the technique began with the thinking of larger and larger undermining areas until they interested the whole face, with a "round lift" concept of Pitanguy in the 1960s, communicating both hemifaces by undermining, including the submenton and frontal regions [13]. This tendency of traction and tissue stretching followed in the 1970s, with Tord Skoog in 1974 when he performed a deeper plane traction by undermining a platysma flap [15] and in 1976 with the publication of Mitz and Peyronie which identified and described the superficial muscular aponeurotic system (SMAS) [11].

This rejuvenation way of thinking based on skin traction began to have a new concept bias since the beginning of 1970s decade when the scissors defatting in the cervical region began [8], which showed very effective results when treating the jowls and the submenton, when in 1978 Illouz's liposuction was applied to the face in the early 1980s [10]. Surgeons began to understand that adequate facial volumes were of major importance in delineating a young face, sometimes as important or even more than the treatment of wrinkles. The young faces have well-drawn lines, the borders between the face and the cervical region are clearly defined, and these regions should not communicate. The senile face may show sub-platysmal fat, fallen cheeks, such as those of the bulldog (jowls) that have come to be identified as characteristic of the senile face. In 1988, Daher published a paper describing the 6-point volume of the face to be treated with liposuction to achieve a facial contour compatible with a young face [5], associated with fat injections in the areas where, in the aging process, fat is absorbed naturally, as example the malar region, which is abundant in young and "melts" with aging. The fat "moves" from place to place with the aging process. It leaves the cheeks and cheekbones and migrates to the jowls, submenton, and other areas.

There was a clear technical and conceptual evolution. Treating wrinkles has its importance, either by some superficial traction (skin) or deep (SMAS), but the main goal became the rescue of the young face by redefining its contours and volumes. In

this new stage, the techniques of liposuction and fat grafting evolved. Also, the appearance of the facial fillers (permanent and reabsorbable (PMMA, hyaluronic acid, and other products offered by the industry)) to fill thin wrinkles or as fillers of large volumes, rescuing lost volumes or creating aesthetically desirable volumes, and the various dermatological treatments to improve skin quality are also tools to be added to the surgical treatment.

22.3 Surgical Procedure

Here we present our surgical practice today, after a process of selection among all the techniques that have arisen since the 1960s, being said that we've practiced all of them in these 50 years of experience. The procedure here indicated was selected under a maximum cost-effectiveness ratio and is justified in a critical analysis when we discuss it.

Marking: Surgery begins in the moment of your planning. The patient in orthostatic position will be marked with indelible ink and will persist after asepsis. In this marking, we will identify the points to be corrected, notably in the first place, the volumes to be reduced and increased. The operative procedure begins with the liposuction of the marked areas and the fat grafting at the points where we must increase volumes. This stage may be complemented at the end of the surgery if needed.

Facial Liposuction: With aging there is a migration of facial fat that "changes from place to place," and the young pattern of fat distribution is lost, changing to a senile pattern. The idea is to aspirate the places where fat accumulates and replenish through fat grafting the places where it has decreased.

We have to rescue the contour of the young face, initially aspirating the fat that is accumulated in these six areas, *as illustrated and numbered in* Fig. 22.1. Every liposuction will be practiced with 2–3 mm, 15 cm length cannula, and should always be performed between the surgeon's fingers, to feel exactly what you are aspirating, without trespassing the limits.

- 1 Submenton: By a small incision (2 mm) in the submenton, at the sub-mental wrinkle, we introduce the cannula that will work until reaching the desired volume and without fat excess removal (*illustrated in* Fig. 22.2).
- 2 Jowls: This region will be treated by a small incision behind the auricular lobule that will later converge with the facelift incision. We first aspirate the jowls, which is located below the jawline (the upper jowls locates above the jawline), always between the fingers. When we come to work above the jawline, we need to be careful and aspirate a little less, because if we aspirate more than we should, we may get a very thin face on the frontal view, as well as produce undesirable depressions (*illustrated in* Fig. 22.3).
- 3 Jawlines: The redefinition of the jawline is very important, since it is the rescue of the borders between the face and the supra-hyoid region of the neck. This surgical stage begins when we treat the jowls at the jawline, concluding the

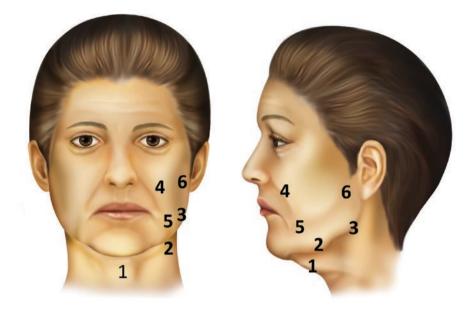


Fig. 22.1 Face zones to be considered for liposuction (Daher, 1988 [5]): 1 submenton, 2 jowls, 3 jawline, 4 nasolabial fold (high part), 5 marionette lines (cranial to the folds), and 6 pre-parotid region. Zones 1, 2, and 3 are most commonly submitted to liposuction while zones 4, 5, and 6 more rarely, only in special cases as in heavy faces

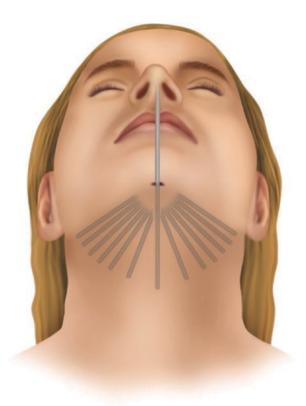
treatment of the entire line along the mandibular branch. At this time the liposuction will define the mandible edge and extend to the lateral parts of the supra-hyoid region of the neck, joining the aspiration areas of the jowls and submenton (*illustrated in* Fig. 22.3).

- 4 and 5 Upper regions: nasolabial folds and marionette lines. These wrinkles are treated primarily by fat grafting or synthetic fillers (facial fillers). However, in the very heavy or round faces, liposuction of the upper regions, cranial to the folds, can be performed gently, facilitating the equalization of the planes and diminishing the wrinkles. In order to access comfortably these areas, we can use a 2 mm incision in the supra-hyoid region of the neck, on the nasolabial fold extension (*illustrated in* Fig. 22.3).
- 6 Pre-parotid region: Also rare, but a possible indication is on very round and heavy faces (*illustrated in* Fig. 22.3).

22.4 Facial Fat Grafts

Fat grafts, along with facial liposuction, have come in an extraordinary way to complement facial contour. The target regions of the grafts are 1. malar region and tear trough, 2. nasolabial folds, 3. oral commissures (marionette lines), 4





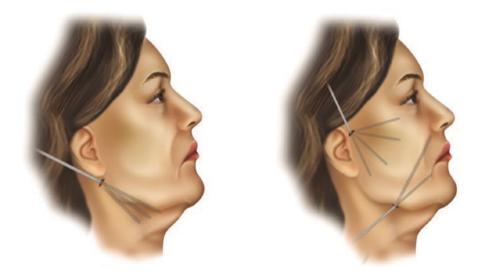


Fig. 22.3 Surgical access through retro-auricular (behind the ear lobule) region for treating the jowls and redefining the jawline. The picture on the right shows rarely done liposuction areas: preparotid area with a 2 mm incision near the crux of the helix and cranial part of the nasolabial fold and marionette lines, through a minimal incision on the neck

menton-mandibular fold, and 5 upper and lower lips or even a panfacial grafting which approaches the whole face.

Fat grafts since they are harmless (autologous grafts) and have quite an amount of reabsorption are being used more and more generously. We use today about 20–90 cc of centrifugated fat, at 2000 rotations per minute, for 2 minutes. This fat is transferred in 1 cc syringes and injected with 0.9 mm cannulas, with a drop-by-drop technique, preventing the formation of fat "lakes." The action can be manual or by a pistol that uniformizes the volume of each drop injected.

Skin benefits are evident, and the improvement in skin quality is clinically notable. Therefore, we indicate fat grafts on every part of the face that was not undermined; even though we do not want to gain volume in some areas, a thin fat graft layer may improve the quality of the skin.

22.5 The Platysma Bands

Continuing the surgery, after liposuction, if there is indication, we will approach the platysma bands through closed platysmotomy, a technique published by *Daher* 2011 [4].

This indication will be done during the physical examination and surgical planning. Patients who have preponderant and strong bands (which occurs mainly in cases of total or partially separated platysma types 1 and 3 in Cardoso de Castro classification (*Cardoso de Castro* et al. *1980*)) [2] will have the indication of sectioning of the bands. This section will weaken these bands, helping in the treatment lateral plication of the platysma, another operative stage that we will see ahead.

22.6 Closed Platysmotomy: How to Do It

When platysma band deactivation is indicated, we will section these bands, *without opening the submenton*. This surgical procedure, if the bands are identified, occurs after liposuction and before starting the facelift.

Closed platysmotomy is a procedure we published (*Daher JC*, *Closed Platysmotomy: A new Procedure for treatment of platysma bands without skin dissection: Aesth Plast Surg; 2011 35* [5]:866–77) [4] where we are able to place a steel wire loop around the platysma band, which will cut the band using only two small needle holes. How to do it: Mark 3–6 transversal lines of 3–5 cm on each band, where we would like to section it. In each cut to be done, a 1.2×40 mm caliber needle will be introduced through the skin behind the platysmal band, transfixing it in its posterior part and coming out along its medial border. Now we pass a soft steel wire (flexible), diameter 0.5. The needle comes out and the wire stays. Afterward, we reintroduce the needle through the same initial hole, but it will follow a different path: it will pass between the skin and the platysma muscle, coming out

in the same medial hole, where the wire is already. The end of the wire will be reintroduced into the needle, leaving it back in the initial hole. We remove the needle, and we will now have on the one hand the two ends of the wire and on the other a loop. This loop will be pressed between the fingers, and when it is well closed, we can pull it, and it will easily pass through the needle hole, without enlarging it. We therefore have, under the skin, a loop around the platysmal band and with its two ends coming out through a hole in the skin produced by the needle. These two ends of the loop will be inserted into the simplified platysmotome hole (illustrated in Fig. 22.4, a metal circle like a coin with a 1 mm center hole) and will be held by strong needle holder. When you begin to rotate the needle holder around itself and leaning on the platysmotome, you will twist the wire which is looped on the platysmal band that will crush the band. This maneuver will be performed three to six times on each side, weakening/deactivating the band completely, for long periods. Indications of closed platysmotomy: a) in cases of facelift where the bands are very present and strong. b), isolated from facelifting, in young patients with early platysma bands. c) in patients submitted to facelifting and who have returning platysmal bands. In these cases, we can easily solve the problem (because there is no more skin flaccidity) without having to reoperate the patient, as we can see in Fig. 22.5.



Fig. 22.4 Simplified platysmotome: The tool we use to lean the needle holder against it and twist the wire loop to crush the platysmal band (represented in this picture by the white tube being crushed by the wire as we twist the needle holder) [4]



Fig. 22.5 Isolated closed platysmotomy case. Closed platysmotomy can be performed independently to the facelifting surgery. In these cases the procedure can be done under local anesthesia. It is indicated in patients who have no skin flaccidity but noticeable platysmal bands or, as demonstrated in this case, in returning bands after a facelift surgery. In these cases the platysmal bands can be treated without submitting the patient to a new surgical procedure. After the procedure under local anesthesia, we only put ice for about 15–30 minutes

22.7 The Facelift Itself: Surgical Procedure

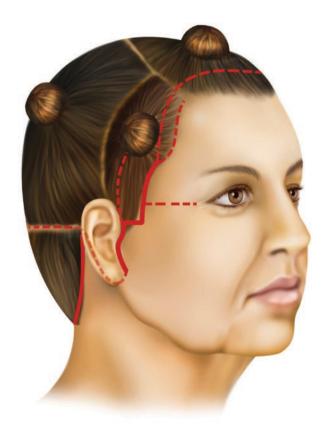
Video 22.3 A brief video of the procedure, according to the following explanation.

We mark the incision lines; it may be larger or smaller depending on the case.

We infiltrate the face with a solution of xylocaine and adrenaline 1/200,000. After liposuction and closed platysmotomy (if indicated), we start the incisions. These incisions begin in the temporal region, extend around the sideburns, and pass through the pre-auricular region, in the exact transition between the ear and face, passing through the tragus anteriorly, preserving its structure. They follow their retro-auricular path up to about 3 cm above the lobule implantation and descend posteriorly along the hair implantation line (Fig. 22.6).

In the scalp zone, we use the trichophytic incisions: the scalpel incises the tissues parallel to the hair follicle implantation, preserving them to its maximum, in such a way that they can regrow inside the scar, disguising it.

The incision is followed by the scissor undermining of the dermal-fat facial flap for about 4.5 cm around the ear, where it will already converge with the undermining made by the liposuction cannulas. We extended this undermining inferiorly to the infra-hyoid region toward the clavicle (*illustrated in* Fig. 22.9, *zone number 2*); Fig. 22.6 The most commonly used incisions are drawn above on the full lines; it starts on the pre-temporal region ahead of the hair implantation line, follows the preauricular region through the tragus preserving it, goes through the retroauricular region, and descends inside the hair implantation line



we undermine only the necessary to proceed with the SMAS-platysma extended lateral plication.

The intracapillary incision on the temporal region would elevate the sideburns and can only be used in patients with extremely low sideburns. The incision extension transforming it in a coronal incision is only useful in cases of the fontal region approach; indications are rare nowadays. The straight retro-auricular incision inside the scalp limits the neck skin resection, which is why it was substituted by the hairline incision.

The SMAS-platysma plication is the only procedure we do in these structures. We created a vertical incision starting at the ear lobule as a continuation of an auricular pavilion anterior line toward the clavicle until the infra-hyoid zone. This SMAS incision creates a lateral platysma edge. We identify this edge of the platysma and slightly dissect it about 0.5 cm cranially. The lateral platysma line created will continue with the methylene blue marking that follows a parallel line to the nasolabial fold (this is only a reference, because the surgeon will feel pulling the flap with his tweezers that will show the exact direction the tissues should move). The plication consists of separate 3-0 nylon stitches, with a 2.5 cm needle 1/3 of a circle. The neck plication should start below the hyoid bone (depending on the case, it may go to the

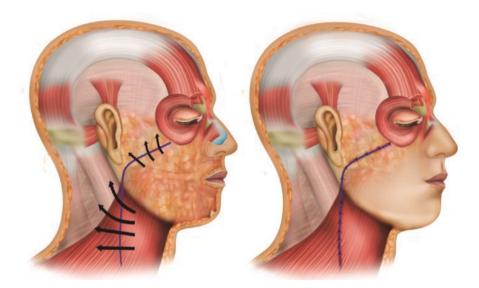


Fig. 22.7 The platysma plication line follows a straight line from the earlobe and advances upward in a parallel line to the nasolabial fold until it reaches the malar lateral zone. The arrows illustrate the different vectors in which the tissues can be tractioned, which are done with 3.0 separate sutures. Normally 15 to 25 sutures are done on each side

clavicle), and cranially the plication continues on the marking parallel to the nasolabial fold, plicating as far as the lateral side of the malar region (*illustrated in* Fig. 22.7).

About 15–25 inverted stiches with a 2-0 or 3-0 will be done for a complete and effective plication.

After plication, we will notice that the skin naturally comes since it was naturally pulled by the strong plication. We remove the skin excess, and the suture line will be tension-free. The skin resection is done in a systematic manner, starting in the temporal and antero-auricular regions, pulling the tissues in a upward/backward direction, having in mind that the tissue itself will follow its natural path. Normally the skin traction coincides with Pitanguy's teaching which advocates an oblique traction, up and back toward Darwin's tubercle (Fig. 22.8).

We will make the first fixation point of the flap above helix implantation. The second point will be retro-auricular, just before the incision passes to the scalp zone. We pull the flap upward and backward, following the direction the flaps "tells" you to go. It's the traction of the posterior flap that "suits" the neck. Afterward, we resect skin excess between these two points, following markings that circumvent the auricular region, sparing the skin next to the lobe avoiding tension that could lead us to a "trapped earlobe." We close the wounds, without tension using intradermal stitching *(illustrated in* Figs. 22.9 and 22.10).

Fig. 22.8 The skin traction is delicate (since the extended SMASplatysma plication naturally brings the tissues to its natural position). Usually the traction is made in upward, backward vector toward Darwin's tubercle, while the retro-auricular flap is pulled more horizontally to correct the neck flaccidity, which is the main goal of this surgery



Fig. 22.9 Undermining -Area 1 illustrates the typical undermining area, having a 4.5 cm of width. Area 2 shows a complementary undermining zone for the "extended lateral platysma plication," which goes below the hyoid bone level. Area 3 illustrates the cannula undermining zone where scissors are avoided, preserving the nerves and vessels, permitting the tissue to slide, and reducing complication risks

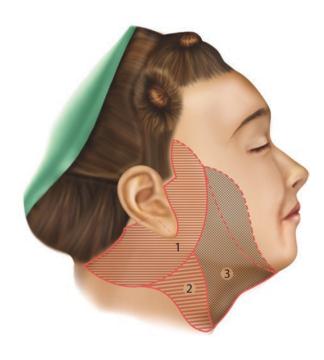




Fig. 22.10 Pre- and 6 months post-op of patient submitted to the presented technique: facial contouring liposuction, closed platysmotomy, facelift with the extended lateral SMAS-platysma plication (without opening the submenton), and fat grafting



Fig. 22.10 (continued)

22.8 Discussion

Facial Liposuction: The idea of taking out fat may seem contradictory when we know that with age the face "withers," but that is not it. Although the face loses volume as a whole (including bone reabsorption), the distribution of facial fat in the aging process changes, and we have to aspirate it where the volumes are undesirable, on the other hand, use fat graft where most volume reabsorption occurred "cheeks" before were full and with beautiful projections in the malar region, and through the aging process they wither. It is as if the fat of these areas "melted," migrating to the lower positions of the face, accumulating on the jowls and submenton, in the upper part of the nasolabial fold, oral commissure wrinkles, and jawline, erasing the borders between the face and the supra-hyoid region of the neck.

The facelift evolved from a discreet technique to a more and more evasive procedure as the knowledge in facial anatomy deepened (*Ivo Pitanguy, Tord Skoog, Bruce Connell, Robert Peterson, Guerrero-Santos, Daniel Baker, Sam Hamra*). The face "skin" lifting evolved to the so-called round lifting where the whole face undermined. In addition, scissors defatting was practiced as soon as demonstrated that noble anatomical structures were below the platysma muscle [1, 3, 8, 9, 12, 13, 15].

In the 1970s, surgeons began working the subcutaneous with scissors and felt the importance of taking out volumes (defatting) of the face, specifically in the jawline and submenton, as published by *Guerrero Santos in 1974* [8]. It was only a starting point for volume treatment, since skin traction was still the main goal of facelifting.

In 1976, Mitz and Peyronie described the superficial muscular aponeurotic system (SMAS) of the face [11]. The description of these structures led to a new era in which dozens of authors (Aston, Baker, Cardoso de Castro, Connell, Daher, Guerrero-Santos, Hamra, Peterson, Pitanguy, Skoog, etc.) [1, 2, 3, 4, 5, 6, 8, 9, 12, 13, 14] published different approaches to these structures, all of them focused on 1) the undermining or not of the SMAS and 2) traction vectors and its intensity, but always converging to a common sense: traction. We practiced this routine for facelifting until (undermining and SMAS traction) the 1980s, when facial liposuction began. The procedures became simplified in rhytidectomies. We adopted facial liposculpture (Daher, 1988) [5] and found (as Pitanguy advocated in personal communication) that the firm and well-conducted SMAS plication had as good results as the SMAS undermining, being a much less invasive procedure, therefore with a better cost-effectiveness ratio. The facial liposuction brought us the conviction that the volume treatment, rescuing the young facial contour, was essential, practicing in the deep structures (SMAS) only the efficient plication (instead of having to dissect/ undermine them). It is necessary to emphasize the great number of surgeons and authors who still advocate the treatment of SMAS by undermining in its several variables, although there is already a strong movement of more experienced surgeons who abandoned these techniques in favor of plication only, achieving good results and being less invasive.

Submenton: The conventional and still widely practiced treatment is to open the submenton to treat the platysma bands, sectioning them totally or partially and almost always culminating to the medial suture of the platysma muscles (corset technique) [2, 3, 7, 8]. At this time only Peterson was doing the lateral traction. Although attached to the medial suture [12].

Although we have used all of these procedures for more than 30 years, *today we* only use the lateral platysma traction with an efficient plication without opening the submenton, avoiding about 30% of the undermined area.

The treatment of platysma bands has been shown to be efficient simply through plication, eliminating them totally from the midline and achieving our goals of less invasive surgeries with excellent results.

With the aging process, facial structures and tissues tend to fall downward position toward the midline of the neck. Therefore, instead of pulling these structures to the direction they are naturally going (midline), it makes more sense to traction them laterally, returning them to their origins when younger, acting against gravity. This suggests the reason to choose this technique.

We should remember that when we do liposuction, we undermine a large area of the face and that these undermined areas remain attached to the deep planes, by their nervous vascular bundles, but they are loose to move. The areas without liposuction, we undermine with 3 mm or 4 mm cannulas so that the flap can slide.

The scissor undermining will be done in the retro-auricular region and inferiorly on the neck, below the level of the hyoid bone, being able to reach the sternal furcula if necessary. On the retro-auricular and antero-auricular regions, we go up to a two-finger width (approx. 4.5 cm). The areas to be undermined should be the least possible, serving us only to create the surgical field sufficient for the SMAS plication. Remembering that, beyond this limit, the face is undermined through liposuction areas and by the detachers, preserving the nervous vascular bundles that come from the deep planes to the skin as shown by *Marcelo Daher (Daher M, Lipofacelift: facelift with minimal skin undermining. Brazilian Journal of plastic Surgery; 2009, 24:4)* [6]. The closed platysmotomy is a complementary tool that will be used for deactivating very heavy and strong platysma bands, weakening them, and helping their treatment by the lateral traction and without necessity of submenton opening [4].

22.9 General Considerations

As we discussed, there are many techniques and procedures that can be used in facelifting. To those already mentioned, we can add other procedures, such as the sub-periosteal facelift, the approach of the sub-mandibular glands and the support threads, etc. We understand that none of them are wrong. Everyone can lead to good results, each one with its limits, but all of them showing improvements. For example, undermining and tractioning the platysma will surely give the same result as its simple and efficient plication. The question we ask: do we need all this (extensive undermining, SMAS undermining, submenton opening) simultaneously? Or can we choose the procedures that lead us to excellent results, being less invasive and having a good or the best cost-effectiveness ratio? It is up to the surgeon and his knowledge in medical literature to make good judgment and select the best technique. Our suggestion is the technique presented here: a selection of procedures used in our 50 years of facelifting practice.

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