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Long Terms Results of Temporal Facelift: 6 Years of Experience in 250 Cases

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Background: Temporal facelift (TFL) is an innovative technique for lifting the upper and mid-face. It is characterized by a unique dissection plane above the subgaleal fascia, which seamlessly transitions into the sub-superficial muscular aponeurotic system (SMAS) layer in the mid-face. This approach enables comprehensive mid-face elevation, robust canthopexy, and a significant brow lift in various vectors.

Objectives: The authors present their experience with 250 TFL procedures over a period of 6 years.

Patients and Methods: This retrospective study analyzed 250 of 441 patients who underwent TFL surgery. The surgical procedures, conducted under general anesthesia by a senior surgeon following the TFL method, involved a vertical-vector deep-plane mid-face lift, canthopexy, and brow-lift triad. Close monitoring of complications and detailed photographic documentation of the outcomes were performed. Postoperative care included taping the operation area to reduce swelling, with subsequent follow-up examinations and interventions such as lymphatic massage and botulinum toxin injections for asymmetric brow movements or steroid injections for excessive mid-face swelling.

Results: Among 250 patients (248 female, 2 male; mean age, 37 y), unilateral neuropraxia of the frontal branch of the facial nerve occurred in 5.6% and resolved spontaneously within 2.8 months. Persistent dimples (2.8%) resolved by the fifth postoperative month. Six patients (2.4%) underwent revision surgery with no observed complications like hematoma, necrosis, infection, or seroma.

Conclusions: The TFL technique represents a significant advancement in upper and mid-face lifting procedures and offers several advantages over the traditional methods.

Key Words: Mid-face lift, neck lift, temporal facelift, temporal lift

Temporal facelift (TFL) is a novel upper and mid-face lifting method with a unique dissection plane.[1] The plane over the subgaleal fascia (SGF) (also called the innominate fascia) is a mobile and avascular plane for dissection of the temporal region and continues directly as the sub-superficial muscular aponeurotic system (SMAS) layer in the mid-face.[2] With these features, the TFL provides the surgeon with the opportunity to lift the entire mid-face in the deep plane, perform strong canthopexy by suspension of the orbicularis oculi muscle, and perform considerable brow lift in the vertical horizontal and oblique vectors. There are few publications available in the literature regarding TFLs, and those that exist do not typically report long-term case outcomes.[3,4]

In this article, we present our experience with 250 TFL procedures over a period of 6 years. The surgical data, patient demographics, and complications associated with this method have also been reported.

PATIENTS AND METHODS

Study Design

This study was a retrospective evaluation of 250 cases selected from 441 patients who underwent TFL surgery over a period of 6 years. Three inclusion criteria for the study were at least 1 year of follow-up, a detailed story of good overall health, and no lifting surgery of the upper and middle face; therefore, all included cases were primary cases. The exclusion criteria were secondary or revision cases, unrealistic cosmetic expectations, previous thread application, or filler injections, especially in the temporal region.

Surgical Procedure

All patients underwent surgery under general anesthesia performed by a senior surgeon (H.Ş.). In all cases, in accordance with the TFL method, vertical-vector deep-plane mid-face lift, canthopexy, and brow-lift triad were performed.[2] Close follow-ups for possible complications and detailed photographic documentation for the assessment of surgical outcomes were performed.

The operation began with a 2.5 cm incision located 1 cm behind the temporal hairline. The dissection was performed down to the deep temporal fascia (DTF). After finding the DTF, the SGF was identified just over the DTF and left at the

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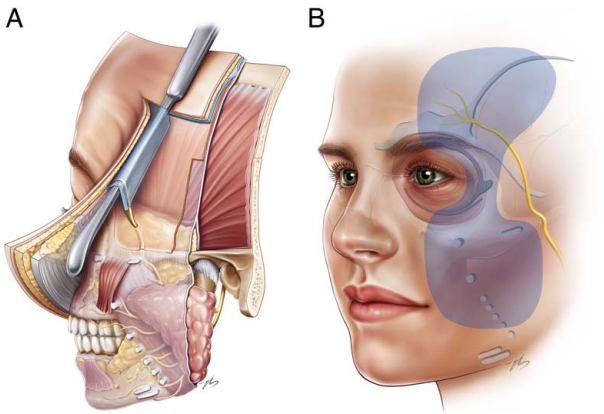

FIGURE 1. Illustrations of the dissection plane and dissection boundaries. (A) Dissection was performed over the subgaleal fascia with a blunt dissector from the temporal region down to the mid-face. (B) Illustration of the dissection boundaries.

bottom. Dissection was performed over the SGF with a blunt dissector from the temporal region down to the mid-face (Fig. 1) (Video, Supplemental Digital Content 1, http://links.lww.com/SCS/H186). The plane over the SGF is a natural plane of dissection; therefore, the dissector directly enters the sub-SMAS level in the mid-face without any resistance (Fig. 2) (Video, Supplemental Digital Content 1, http://links.lww.com/SCS/H186). Subsequently, the dissection area was expanded using a trap set retractor (Fig. 2). At the end of the dissection, the flap included the STF and orbicularis oculi muscles in the temporal region, whereas it included the malar fat pad and SMAS in the mid-face (Fig. 1) (Video, Supplemental Digital Content 1, http://links.lww.com/SCS/H186).

After adequate dissection, 3 or 4 mid-face sutures were placed with a light retractor to perform vertical deep plane mid-face lifting, followed by 1 or 2 canthopexy sutures, which were placed through the orbicularis oculi muscle (Fig. 2) (Video, Supplemental Digital Content 1, http://links.lww.com/SCS/H186). The operation continued with 2 or 3 brow lift sutures that were placed close to the eyebrow and used to lift the brow in vertical, horizontal, or oblique directions, according to the patient's desires (Video, Supplemental Digital Content 1, http://links.lww.com/SCS/H186). Finally, 2 or 3 sutures were placed between the STF and DTF to obliterate the dead space around the incision line (Video, Supplemental Digital Content 1, http://links.lww.com/SCS/H186).

Postoperative Care

At the end of the surgery, the operation area was taped to prevent excessive swelling and to straighten the dimples for 7 to 10 days. In the first control examination (7–10 postoperative days), all tapes were removed, and new tapes were applied for another week if required. In all patients, lymphatic massage was recommended starting on the 10th postoperative day. The following control examinations were carried out in the postoperative 2nd, 4th, 6th, and 12th months (Figs. 2–7). In these follow-up examinations, botulinum toxin injections may be performed in cases with asymmetric brow movements, and intralesional steroid injections may be performed in cases with excessive mid-face swelling.

RESULTS

Among the 250 patients, 248 were female and 2 were male, with an average age of 37 years (range: 18–61). The mean follow-up period was 21 months (range: 12–69 mo) (Supplemental Tables 1–2, Supplemental Digital Content 2, http://links.lww.com/SCS/H187, Supplemental Digital Content 3, http://links.lww.com/SCS/H188). In 14 patients, unilateral neuropraxia of the frontal branch of the facial nerve was detected (5.6%), and all healed spontaneously at an average time of 2.8 months. The longest-lasting neuropraxia took 9 months to recover fully. No permanent nerve injuries were observed. Superficial dimples are common in TFL, and most of these dimples disappear within the first postoperative month after manual massage. Dimples that lasted more than 1 month were named persistent dimples and were encountered in 7 patients (2.8%). The longest persistent dimples disappeared by the postoperative 5th month. An additional revision surgery was performed in 6 of these 250 patients (2.4%) using the same method (Supplemental Tables 1–2, Supplemental Digital Content 2, http://links.lww.com/SCS/H187, Supplemental Digital Content 3, http://links.lww.com/SCS/H188). No postoperative hematoma, skin necrosis, infection, or seroma were observed.

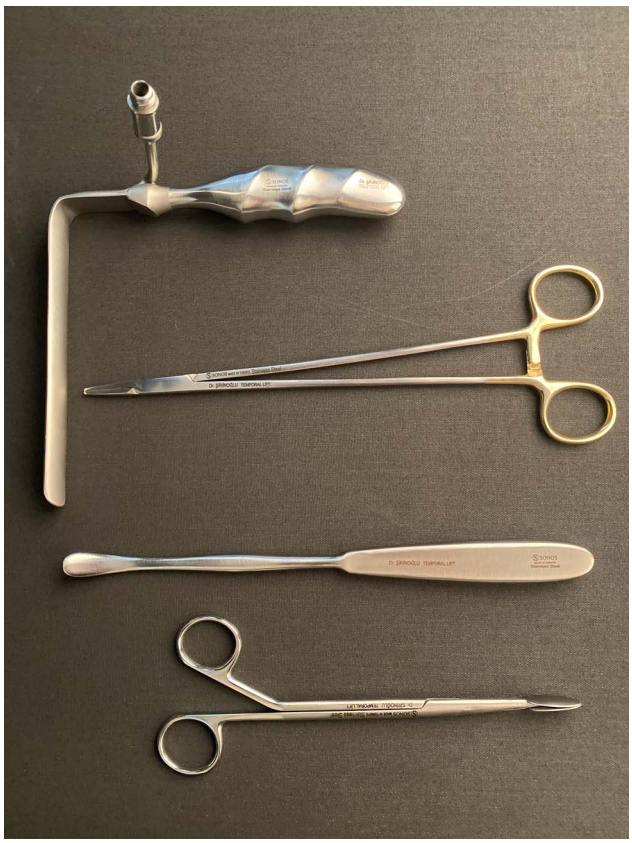

FIGURE 2. The instruments used during the operation, from top to bottom, were a lighted retractor, needle holder, elevator, and trap set.

DISCUSSION

Temporal facelift (TFL) is a deep-plane upper and mid-face lifting procedure that describes a novel surgical plane for tissue dissection. First, it emphasizes the importance of the dissection plane over the SGF.[4–6] Many sources do not include the SGF in the temporal region of anatomic sections. Almost all methods use only 2 planes of dissection for the temporal area: the plane over the deep temporal fascia and the subcutaneous plane.[7,8] The reason for this is that the myth between these 2 planes is safe for the frontal branch, and the area between these 2 planes is a danger zone for the nerve.

FIGURE 3. Preoperative and postoperative images of patients after the temporal facelift. (A) Preoperative image of the patient. (B) Patient's postoperative 2.5-year image.

In our previous publication, we clearly showed that the plane over the SGF is a very mobile and avascular plane for the dissection of the entire temporal area. The sentinel vein was the only structure that could be damaged.[2] The frontal branch was located superficial to this plane, and with a blunt dissector, it was easily protected during dissection. Furthermore, this plane has a unique feature that gives the surgeon the opportunity to enter the sub-SMAS level in a few seconds from a 2.5 cm long incision inside the temporal hair-bearing scalp. The entire mid-face could be lifted without performing any incision in the periauricular region.[9]

Temporal facelift (TFL) is a minimally invasive technique, which results in minimal scarring. A pretragal incision is typically used as an entry point for the deep plane, and skin resection is rarely required.[10] Excess skin usually occurs in the lower third of the face and neck, which is more mobile with mouth and neck movements.[11–13] The upper two-thirds of the face does not suffer from excess skin during aging, and excision is not required for upper facial rejuvenation. Avoiding a pretragal incision and not lifting the large, random skin flap prevents possible complications such as flap necrosis, skin atrophy, enlarged scars, and hypertrophic scars.[11]

FIGURE 4. Preoperative and postoperative images of patients after the temporal facelift. (A) Preoperative image of the patient. (B) Patient's postoperative 18-month image.

FIGURE 5. Preoperative and postoperative images of patients after the temporal facelift. (A) Preoperative image of the patient. (B) The patient's postoperative 1-year image.

Damage to the frontal nerve due to dissection is unlikely because blunt dissection is performed in the temporal and frontal regions. No permanent paralysis was observed in any patient. Temporary paralysis is likely caused by compression of the nerve between the wiring sutures or temporary damage to the frontal muscle due to tension-push-pull.[14] Owing to the parallel entry of the mid-face to the zygomaticus major and complete blunt dissection under the SMAS, the risk of nerve damage to the mid-face was minimal. No other facial nerve branch injuries were observed in any patient.

Classic facelifts can be performed for an average of 3 to 4 hours, which limits their use in combination with other procedures. The relatively short duration of TFL surgery (1 h on average) makes it easy to combine with other procedures; we often combine it with complementary facial procedures such as rhinoplasty, blepharoplasty, neck surgery, and lip lifting.[15] The

FIGURE 6. Preoperative and postoperative images of patients after the temporal facelift. (A) Preoperative image of the patient. (B) The patient's postoperative 13-month image.

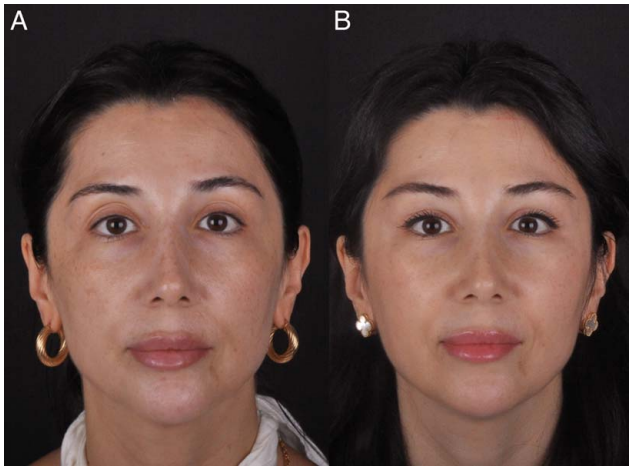

FIGURE 7. Preoperative and postoperative images of patients after the temporal facelift. (A) Preoperative image of the patient. (B) The patient's postoperative 18-month image.

fact that it is a quick and minimally traumatic procedure also limits postoperative swelling and edema, reduces the period of social isolation, and accelerates the return to social life.[16]

The TFL technique involves leaving the SGF at the base, with or without the galea, and excluding it from the flap. This technique has the advantage of creating a solid structure on the floor for fixation medial to DTF. Many techniques use drill holes to fix the eyebrows vertically because the medial extension of the temporalis muscle is often insufficient for a vertical vector.[17] This technique allows the mid-face to be fixed in a natural and vertical position. The eyebrows and lateral canthus can be adjusted in various combinations, including vertical, horizontal, and oblique directions, based on the patient's medical needs and preferences.

Methodological efficacy depends on the precise delineation of the dissection plane. Tolhurst et al[18] expounded on the anatomic nuances of the temporal region, notably delineating the SGF, an indurate fascial stratum positioned proximal to the DTF. If SGF persists within the raised composite skin flap, it becomes difficult to mobilize it adequately, leading to prolonged insufficiency of elevation and impeding desired outcomes. The plane that includes the SGF is relatively avascular, and the sentinel vein is the only vascular entity vulnerable to injury in this area. The trajectory below the SMAS extended smoothly into the mid-face, running parallel to the zygomaticus major. This reduces the risk of nerve injury in this area and makes the dissection process more secure and efficient.

One of the most predictable advantages of this technique is the absence of the risk of severe infection, as there is no intraoral dissection. No postoperative infections were observed in any of the 250 patients included in our study. The risk of hematoma, a common complication in the postoperative period, is almost zero because of the absence of dead space with the sutures used. Internal surgical net sutures reduce the risk of hematoma by decreasing dead space and promoting fibrosis in a larger area, resulting in a better and longer-lasting effect.

This technique is called TFL because it affects not only the temporal area but also the mid and lower faces and even the minimal neck. It can achieve a beautiful V-shaped effect on the lower face and neck, and in patients with significant neck deformities, it can be combined with a deep plane neck lift. Its greatest advantage in the lower face and neck is that it shortens the surgical time and reduces the need for tragal excision. In secondary cases, effective elevation can be achieved by easy dissection because this dissection plan has not been utilized. In the 6 cases in which we applied our own revision, the same plan was readily identified and dissected, leading to the desired elevation and fixation. In elderly patients, revision is necessary due to reduced tissue resistance to gravity

In other temporal lift techniques, the SMAS and the skin are lifted separately, causing both increased trauma and potential long-term effects. In the TFL technique, lifting the SMAS and skin as a composite resulted in less trauma. However, internal surgical sutures can also lead to skin dimples. In our series of 250 cases, with the exception of one, no permanent dimples were observed. In this case, this issue was resolved using rigotomy. Dimples typically resolve within 1 month, and improvement was achieved in all cases by the latest at the 5th month.

When comparing the TFL technique with other methods, the subperiosteal mid-face lift has an increased risk of nerve damage owing to extensive dissection. In addition, making an intraoral incision increases the risk of infection. In endoscopic facelift procedures, the requirement for an endoscope and other specialized equipment can present cost issues and is not always feasible. Furthermore, endoscopic facelifts have a significant learning curve. The gliding brow lift method is particularly important for preventing hematoma formation; however, because the TFL is completed without leaving any dead space, it can be considered an internal gliding brow lift.

Temporary hair loss around the incision site is commonly observed in all temporal lift techniques that utilize intra-hair incision. During the overcorrection period, patients experience social isolation similar to other deep-plane facelift techniques, albeit with a shorter duration than the subperiosteal lift techniques.

The TFL has some disadvantages. One of these is the cosmetic concern known as dimpling, which can disturb patients, particularly those with dimple formations. This issue primarily stems from the lifting and suturing of the skin together with SMAS as a composite, resulting in dimpling. Another disadvantage is overcorrection during suturing, which leads to social isolation, particularly within the first month.

CONCLUSIONS

The TFL technique represents a significant advancement in upper and mid-face lifting procedures and offers several advantages over the traditional methods. Our retrospective evaluation of 250 cases over a 6-year period demonstrated favorable outcomes and low complication rates associated with TFL surgery. The unique dissection plane over the SGF provides a safe and effective approach for lifting the entire mid-face, while minimizing the risk of nerve damage. In addition, the TFL technique allows for combined procedures, shorter surgical times, and minimal scarring, thereby enhancing patient satisfaction and recovery. Despite potential drawbacks, such as temporary dimpling and overcorrection, TFL remains a valuable option for facial rejuvenation with promising long-term results.

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Outcomes of Reconstructing Large Oncosurgical Defects of the Lateral Face in Older Cutaneous Cancer Patients Using Cervicofacial and Cervicothoracic Flaps

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Background: Older patients with cutaneous cancer often have comorbidities. Tumor resection and defect reconstruction in these patients are challenging.
Aims: To evaluate the safety and feasibility of cervicofacial (CFF) and cervicothoracic (CTF) flaps in the reconstruction of large oncosurgical defects in the lateral facial region of older patients.
Materials and Methods: The study enrolled 36 patients with facial cutaneous cancers (age range, 65–94 years). They were divided into CFF and CTF groups in the facial region and in the neck. The clinical stages were I, II, and III in 6, 21, and 9 patients, respectively. The lateral face was divided into 3 aesthetic units: forehead, cheeks, and neck. Postoperative complications were scored using the Clavien-Dindo classification.
Results: The CFF was used to reconstruct oncosurgical defects in 8 foreheads and 16 cheeks; the CFF was used to reconstruct defects in 4 cheeks and 8 necks. The median sizes of skin defects in the CFF and CTF groups were 3.9×4.4 and 6.8×7.7 cm, respectively. There were no full flap failures. The Clavien-Dindo grades were I, II, and IIIa in 20, 9, and 2 patients, respectively, in the CFF and 0, 2, and 3 in the CTF group. Twenty-nine patients were alive without disease, 5 patients were alive with disease, and 2 patients had died of local recurrence or distant metastases.
Conclusions: The CFF and CTF are simple, reliable, and excellent methods for reconstructing large oncosurgical defects in the lateral face of older patients with cutaneous cancer.

Key Words: Cervicofacial flap, cervicothoracic flap, cheek, cutaneous cancer, forehead, neck, older patient, reconstruction

Cutaneous tumors of the face are common in older adults, and surgical excision remains the treatment of choice for facial cutaneous cancer. The vast majority of facial defects are treated by primary closure, local flaps, or locoregional flaps.[1–3] The superficial muscular aponeurotic system (SMAS) is a shallow layer in the head-and-neck region that was first described by Mitz and Peyronie.[4] The obvious musculoaponeurotic layer lies deep in the subcutaneous adipose tissue of the face, on the surface of the parotid fascia, and is connected to the platysma muscle.[5] The cervicofacial flap (CFF) is based on the SMAS in the facial region, whereas the cervicothoracic flap (CTF) is based on SMAS extending to the platysma muscle in the neck. Deep plane dissection of the CTF, including the SMAS, has a low incidence of complications and has not been reported to cause permanent facial nerve injury. This type of flap is an ideal choice for repairing cheek defects caused by oncosurgical resection.[6]

If the oncosurgical defects are large, more complex surgical techniques are required; treatment selection may be challenging for older patients with cardiovascular, endocrine, and musculoskeletal diseases.[7] Comorbidity measurement using the Adult Comorbidity Evaluation-27 (ACE-27) predicts overall survival in patients older than 70 years with head and neck cancer.[8] Older patients with facial cutaneous cancer often have moderate to severe comorbidities, and tumor resection and defect reconstruction are challenging. This study evaluated the safety and feasibility of the CFF and CTF for reconstructing large oncosurgical defects in the lateral faces of older patients with facial cutaneous cancer.

MATERIALS AND METHODS

This retrospective observational study evaluated the outcomes of older patients with facial cutaneous cancer treated with CFF