

# Facelift Surgery after Permanent Filler: Outcomes after Removal of Permanent Filler under Local Anesthesia

Ahmad A. F. Alaslawi, MD\*  
Ahmed M. Zeina, MD†  
Tarek Zahra, MD†

**Background:** Permanent fillers were previously used to fix wrinkles associated with aging as they were considered a reasonable choice for facial rejuvenation. However, the subsequent removal of permanent fillers is of great concern to surgeons before performing a facelift surgery. Many studies have evaluated the outcomes of facelift surgery; however, we sought to evaluate the outcomes of facelift surgery which required removal of fillers beforehand.

**Methods:** This retrospective cohort study evaluated the outcomes of 50 patients with regard to patient satisfaction and postoperative complications of facelift surgery with removal of permanent filler under local anesthesia. A short scar rhytidectomy with superficial muscular aponeurotic system plication was performed. Preoperative and postoperative photographs were analyzed by two independent surgeons to report asymmetry scores ranging from one to three (one none, two slight, and three obvious asymmetries). Patient satisfaction scores were also recorded.

**Results:** The preoperative presentations of the permanent filler were asymmetry (82%) and disfiguring facial edema (26%). Removing fillers under local anesthesia is generally tolerable, with 56% of patients tolerating rhytidectomy. The degree of the participants' satisfaction after follow-up was satisfactory; two-thirds of patients (62%) were satisfied. There was a significant difference between surgeons' preoperative and postoperative assessment of asymmetry scores ( $P < 0.05$ ).

**Conclusions:** Permanent filler removal with concomitant face-neck lift surgery has satisfactory outcomes. The procedure length was primarily determined by the patient's skin characteristics and the severity of the local condition. (*Plast Reconstr Surg Glob Open* 2022;10:e4459; doi: [10.1097/GOX.0000000000004459](https://doi.org/10.1097/GOX.0000000000004459); Published online 22 August 2022.)

## INTRODUCTION

Surgical rejuvenation of the aging face has evolved into one of the most frequently performed cosmetic surgery procedures, despite the increase in nonsurgical rejuvenation.<sup>1</sup> According to the American Society for Aesthetic Plastic Surgery National Cosmetic Surgery Data Bank Statistics, the rate of all facelifts performed has significantly risen since 2017.<sup>2</sup>

Facelift surgery is now a widespread procedure based on an enhanced understanding of aging-related facial changes, patient preferences, and the safety profile of

surgery over the past several decades.<sup>3</sup> However, few studies have reported on facelift surgery outcomes that require preoperative filler removal. Permanent filler removal is of concern because the surgeon must take into account possible complications from subsequent facelift surgery.<sup>4</sup>

Nonsurgical facial rejuvenation (ie, placement of fillers) was popularized due to satisfactory outcomes with improving facial contour. Widely used throughout the world, the number of patients using permanent filler was estimated to be more than 250,000 in 2005. Fillers have previously been satisfactorily used to correct aging-related wrinkles and improve soft tissue fullness.<sup>5</sup>

However, prior placement of fillers can create an unfavorable soft tissue environment, which may adversely impact the cosmetic outcome of facelift surgery. Many surgeons are discouraged from offering facelifts to patients

From the \*Consultant of Plastic Surgery, French Aesthetic Clinic, Kuwait City, Kuwait; and †Department of Plastic and Reconstructive Surgery, Faculty of Medicine, Mansoura University, Mansoura, Egypt.

Received for publication January 19, 2022; accepted June 3, 2022.

Copyright © 2022 The Authors. Published by Wolters Kluwer Health, Inc. on behalf of The American Society of Plastic Surgeons. This is an open-access article distributed under the terms of the [Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 \(CCBY-NC-ND\)](https://creativecommons.org/licenses/by-nc-nd/4.0/), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

DOI: [10.1097/GOX.0000000000004459](https://doi.org/10.1097/GOX.0000000000004459)

**Disclosure:** The authors have no financial interest to declare in relation to the content of this article.

Related Digital Media are available in the full-text version of the article on [www.PRSGlobalOpen.com](http://www.PRSGlobalOpen.com).

with preexisting fillers as removal may require intensive surgery to restore anatomical integrity for appropriate release and suspension during face-neck lift surgery.

The drawbacks with the use of fillers include granuloma formation and the development of facial asymmetry.<sup>6</sup> The most popular filler was polymethyl methacrylate (PMMA), because its structure makes it biocompatible and it remains stable 10 years after implantation.<sup>7</sup> However, there have been recent reports of patients presenting with facial edema after implantation of PMMA, suggesting that there are long-term consequences of permanent filler placement. Additionally, several clinical trials have reported complications after injection of permanent filling materials, including soft tissue induration, nodules, infections, abscesses, and delayed granulomas.<sup>8,9</sup> The biocompatible nature of nonabsorbable hydrogel polymers is a nidus for bacterial infection, biofilm formation, and potential secondary soft tissue infections. Permanent fillers frequently lead to inflammatory reactions and fibrous encapsulation.<sup>10</sup>

The present study aimed to assess the outcomes of facelift surgery under local anesthesia in patients who required removal of permanent filler. Since previous studies assessed the outcomes of facelift surgery, we opted to focus on the association between surgery and permanent filler removal, since it represents a higher level of complexity, which is distinct from primary cases.

## PATIENTS AND METHODS

This retrospective cohort study was conducted over a 2-year period starting from January 2018. Fifty patients were recruited from outpatient clinic at French Aesthetic Clinic in Kuwait. Written consent was obtained from patients. Ethical approval for the study was granted from the institutional review board of Mansoura Faculty of Medicine.

Patients who had permanent filler previously and had subsequent face and neck lifts to correct deformities from the filler were included in our study. Other permanent fillers beyond PMMA, as well as patient injected by non-medical personnel, were excluded. Patients without pre-existing fillers, other associated lifts such as a forehead lift, with open wounds in the treatment area, and local infections such as herpes simplex or impetigo were excluded. Patients with genetic disorders of connective tissue (cutis laxa) and body dysmorphism disorder or patients who had undergone facelift with general anesthesia were also excluded.

Preoperative magnetic resonance imaging (MRI) was ordered on all patients to detect filler volume, level, and location. Patients received intravenous antibiotic therapy 12 hours before surgery and at induction of surgery. Preoperative medication, including 5 mg of diazepam and oxycodone-acetaminophen 5–325 mg, was given to patients 1 hour before surgery.

Patients were placed in the supine position with the head in a neutral position to avoid cervical hyperextension. The eyes were protected and earplugs were utilized to prevent accumulation of blood clots. All landmarks were demarcated. The operative approach, including

## Takeaways

**Question:** Is there a link between facelift surgery and permanent filler removal? Could local anesthesia be used efficiently? It may constitute a unique type of surgery from main instances.

**Findings:** A retrospective cohort study was conducted to evaluate patient satisfaction, and postoperative complications of facelift surgery with removal of permanent filler under local anesthesia. Postoperatively, the percentage of obvious asymmetry is markedly reduced.

**Meaning:** Local anesthesia is tolerable with rhytidectomy. An adequate subcutaneous dissection was required to remove the material injected years before and to perform SMAS plications to fill in the areas thinned by the removal of granulomas and filler.

incisions and all secondary incisions, were discussed with the patients preoperatively. Local anesthesia was chosen after discussion between surgeon and patient.

The tissues were typically infiltrated with 100 ml 0.9% saline, 20 ml of 2% lidocaine, 10 ml of 0.5% bupivacaine, and 1:1000000 adrenaline. The maximum dose of lidocaine was 20 mg/kg. No other drugs were administered during the procedure. All patients were monitored by pulse oximetry and noninvasive blood pressure.

A short scar rhytidectomy with superficial muscular aponeurotic system plication using pretragal incisions was performed for both male and female patients. The hair follicles were trimmed out of the skin flap or by laser therapy. A posterior auricular incision was utilized if the neck demonstrated considerable laxity.

Dissection was performed on the zygomaticus major muscle bilaterally with elimination of all permanent fillers above the Superficial Musculoaponeurotic System (SMAS). (See Video 1 [online], which shows a big amount of filler. Permanent filler of fluid type is squeezed out from the malar area and cheek. Notice the big amount of filler.) The subcutaneous dissection was performed to the cervical region to address the neck, as our patients had concomitant neck lift with platysmaplasty utilizing a submental incision. Each case had a plication or SMAS resection performed, and 3-0 clear polydioxanone suture was used in a similar circuiting fashion in the appropriate vector. After the SMAS and platysma were plicated and/or repositioned in the appropriate positions, the skin was redraped in a tension-free manner while maintaining the face in the neutral position. Subcutaneous negative suction drains were placed in all patients. Drains were usually removed on postoperative day three. Facelift garments with comfortable pressure dressings were used immediately after surgery and for the first postoperative month.

## Outcome and Data Collected

Data included patient demographics, medical history (Table 1), and presentations (Fig. 1). Intraoperative complications related to the procedure or anesthesia regimen were recorded. All postoperative details were recorded. Pre- and postoperative photographs were analyzed by two independent surgeons to report asymmetry. A

**Table 1. The Demographic Characteristics and Medical History of Patients Recruited into the Study**

| Variables                  | Frequency | Percent |
|----------------------------|-----------|---------|
| <b>Age</b>                 |           |         |
| 35–40                      | 6         | 12.0    |
| 41–45                      | 5         | 10.0    |
| 46–50                      | 17        | 34.0    |
| >50                        | 22        | 44.0    |
| <b>Gender</b>              |           |         |
| M                          | 7         | 14.0    |
| F                          | 43        | 86.0    |
| <b>BMI classification</b>  |           |         |
| <25 (ideal)                | 7         | 14.0    |
| 25–30 (overweight)         | 25        | 50.0    |
| 30–35 (mild obese)         | 13        | 26.0    |
| 35–40 (moderate obese)     | 5         | 10.0    |
| <b>Educational level</b>   |           |         |
| Intermediate (1 y or 2 y)  | 10        | 20.0    |
| High (postgraduate)        | 40        | 80.0    |
| <b>Smoking Hx</b>          |           |         |
| Yes                        | 26        | 52.0    |
| No                         | 24        | 48.0    |
| <b>Chronic diseases</b>    |           |         |
| D.M.                       | 11        | 22.0    |
| Hypertension               | 17        | 34.0    |
| C.V.D.                     | 8         | 16.0    |
| None                       | 14        | 28.0    |
| <b>Current medications</b> |           |         |
| Antidiabetic medications   | 11        | 22.0    |
| Antihypertensives          | 17        | 34.0    |
| C.V. medications           | 8         | 16.0    |
| None                       | 14        | 28.0    |
| Total                      | 50        | 100.0   |

simplified form of asymmetry scores assigned by Rohrich et al<sup>11</sup> was used to evaluate pre- and postoperative asymmetry. Asymmetry scores ranged from one to three (one none, two slight, and three obvious asymmetries). Patient

satisfaction scores were also recorded from one to four, as well as their ability to tolerate local anesthesia.

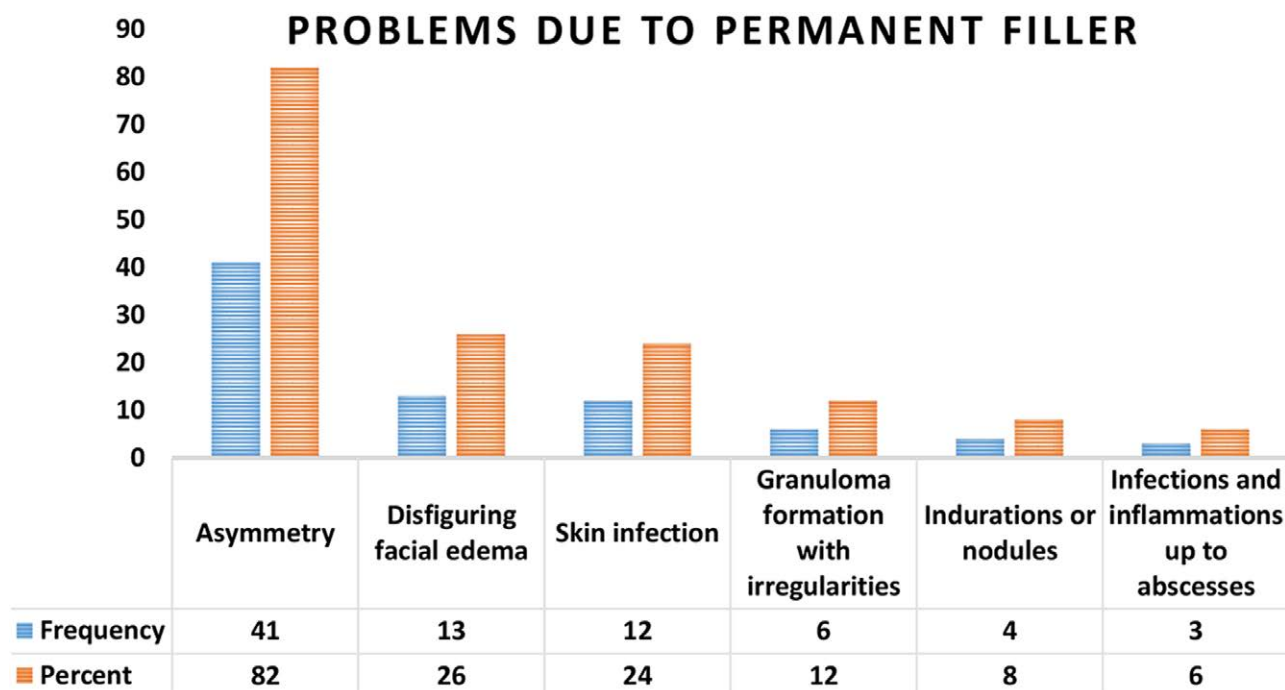
**Statistical Analysis**

Data entry and analysis were done by statistical package of social sciences version 23. Qualitative variables are summarized in number and percent. The marginal homogeneity test is used for prepost comparisons. The Kappa coefficient is used to test interrater reliability. A level of significance less than 0.05 is considered statistically significant.

**RESULTS**

The study included 50 patients. Most of the patients were aged more than 50 years (44%). Thirty-four percent of patients were aged between 46 and 50 years (Table 1). Eighty-six percent were women. Half of the patients were overweight, while 26% were mildly obese, 14% were at their ideal body weight, and only 10% were moderately obese. Eighty percent of patients had a higher level of education (graduates or postgraduates). Fifty-two percent were smokers. Thirty-four percent of patients were on hypertensive medications, 22% of patients had diabetes, and 16% had cardiovascular disease. The preoperative presentations of the permanent filler were mainly asymmetry (82%), disfiguring facial edema (26%), skin infection (24%), with granuloma formation causing irregularities (12%), indurations or nodules (8%), and abscess (6%).

The mean operative time was 5.842±0.7741 hours, ranging from 4.5 to 7 hours. The facelift technique was a superficial rhytidectomy with SMAS plication with concomitant neck lift and platysma suspension. The most common complications were hematoma and ecchymosis



**Fig. 1.** Preoperative problems due to permanent filler.

## Postoperative complication

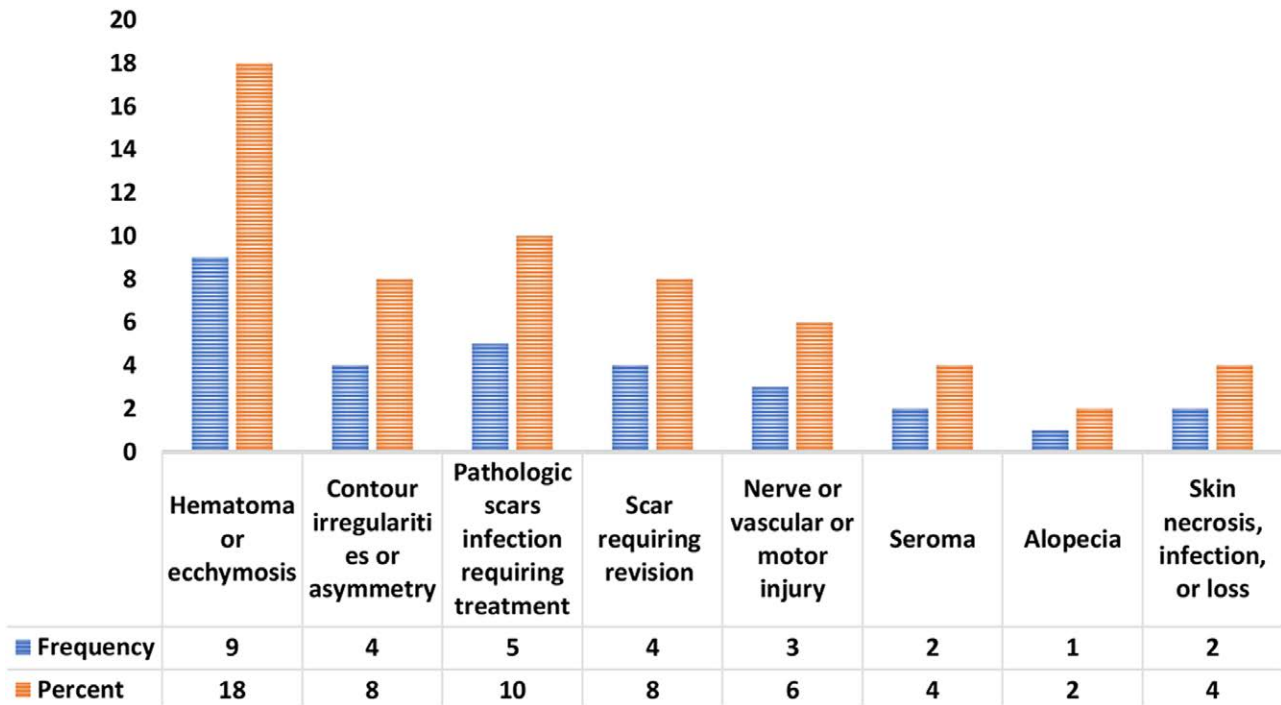


Fig. 2. Postoperative complications.

(18%), infection requiring treatment (10%), and contour irregularities or asymmetry (8%). Other complications included seromas, nerve or vascular injury, and alopecia (2%) (Fig. 2).

The patients were asked about their level of tolerance to local anesthesia and their responses varied. Greater than half of patients (56%) were able to tolerate local anesthesia (Table 2). The follow-up period ranged from 9 to 12 months postoperatively with a mean of 10.7 months ± 1.407 months. The degree of the participants' satisfaction after follow-up was satisfactory; two-thirds of patients (62%) were satisfied. Most of the patients (86%) recommended surgery and reported that surgery was the correct decision. Most of the patients (76%) reported no asymmetry.

### Asymmetry Score

There was a significant difference between both surgeons with regard to pre- and postoperative assessment of asymmetry ( $P < 0.05$ ) (Tables 3 and 4). The percentage of obvious asymmetry was markedly reduced (Fig. 3). There was substantial agreement between both surgeons with respect to the postoperative assessments of asymmetry among the facelift cases (Fig. 4).

## DISCUSSION

The surgical approach to perform a facelift varies greatly between surgeons. However, it is a good operation because of its ability to restore aging-related changes to facial contour that are induced by descent of facial fat,

loss of volume, and increased laxity of the skin.<sup>12,13</sup> Over the years, the popularity of minimally invasive cosmetic procedures has also increased, including the application of dermal fillers, which are mainly used to create

Table 2. Degree of Participant Satisfaction

| Variable                                 | Study Patients (n = 50) |
|--|-------------------------|
| Degree of satisfaction                   |                         |
| Not satisfied                            | 3 (6)                   |
| Somewhat satisfied                       | 5 (10)                  |
| Satisfied                                | 11 (22)                 |
| Very satisfied                           | 31 (62)                 |
| Recommend surgery for a friend           |                         |
| No                                       | 7 (14)                  |
| Yes                                      | 43 (86)                 |
| Tolerability of anesthesia               |                         |
| Not tolerable                            | 2 (4)                   |
| Mild                                     | 9 (18)                  |
| Moderate                                 | 11 (22)                 |
| Tolerable                                | 28 (56)                 |
| Adverse effects                          |                         |
| No                                       | 38 (76)                 |
| Mild                                     | 10 (20)                 |
| Moderate                                 | 1 (2)                   |
| Severe                                   | 1 (2)                   |
| Assessment of asymmetry (patient view)   |                         |
| No                                       | 38 (76)                 |
| Mild                                     | 4 (8)                   |
| Moderate                                 | 6 (12)                  |
| Severe                                   | 2 (4)                   |
| Surgery was the correct decision         |                         |
| No                                       | 7 (14)                  |
| Yes                                      | 43 (86)                 |
| Permeant filler was the correct decision |                         |
| No                                       | 43 (86)                 |
| Yes                                      | 7 (14)                  |

**Table 3. Comparison of Asymmetry Scores for Both Surgeons**

|         | Surgeon 1 (n = 50) No (%) |               | Surgeon 2 (n = 50) No (%) |               |
|---------|---------------------------|---------------|---------------------------|---------------|
|         | Preoperative              | Postoperative | Preoperative              | Postoperative |
| None    | 12 (24)                   | 40 (80)       | 10 (20)                   | 39 (78)       |
| Slight  | 15 (30)                   | 5 (10)        | 19 (38)                   | 8 (16)        |
| Obvious | 23 (46)                   | 5 (10)        | 21 (42)                   | 3 (6)         |
| P       | <0.001*                   |               | <0.001*                   |               |

\*Level of significance <0.05 is considered statistically significant.

**Table 4. Degree of Agreement between Two Surgeons in Asymmetry Assessment**

|                           | Degree | Postoperative Surgeon (2) |   |   | Total |
|---------------------------|--------|---------------------------|---|---|-------|
|                           |        | 0                         | 1 | 2 |       |
| Postoperative surgeon (1) | 0      | 37                        | 3 | 0 | 40    |
|                           | 1      | 1                         | 4 | 0 | 5     |
|                           | 2      | 1                         | 1 | 3 | 5     |
| Kappa statistics          |        | 0.66                      |   |   |       |

volume or reverse the signs of aging and to correct facial asymmetry.<sup>14-16</sup>

An aesthetic surgeon must achieve consistently excellent outcomes while minimizing operative time and maintaining safety.<sup>17,18</sup> Face lift surgery has evolved over the past few decades from simple subcutaneous undermining and

redraping, SMAS suspension, minimal access cranial suspension lift, and superficial musculoaponeurotic system lift (SMAS lift), to lateral SMASectomy.<sup>19-23</sup> Approaches for anesthesia have also similarly evolved. General anesthesia and conscious sedation are modalities frequently used by surgeons. Total intravenous anesthesia and simple local anesthesia have become popular alternative methods of anesthesia delivery.<sup>24</sup>

Patients who seek aesthetic surgery usually seek the most noninvasive approaches that avoid the operating room and prolonged recovery time. This generally forces patients toward facial augmentation with the use of permanent fillers. Despite their popularity and widespread adoption, the use of permanent fillers is not without its drawbacks and complications.

Some complications of using fillers, such as nodules and lumps, were commonly reported in early clinical trials. However, subsequent follow-up has demonstrated that those nodules and lumps were likely early-onset complications occurring within the first 4 weeks of filler placement. They generally occur as a result of using extra filler or placing them too superficially. With continued follow-up, late-onset inflammatory nodules were discovered occurring between 4 weeks and 1 year from the incorrect use of fibroblast stimulatory fillers (ie, poly lactic acid and



**Fig. 3.** A, A 47-year-old woman presented with cheek swelling and facial asymmetry. B, Preoperative lateral view; points to palpable induration of cheek. C, Preoperative oblique view. D, Postoperative anterior view after subcutaneous dissection and extraction of filler, which was solidified with tissues. E, Postoperative lateral view. F, Postoperative oblique view.

## POSTOPERATIVE SYMMETRY ASSESMENT

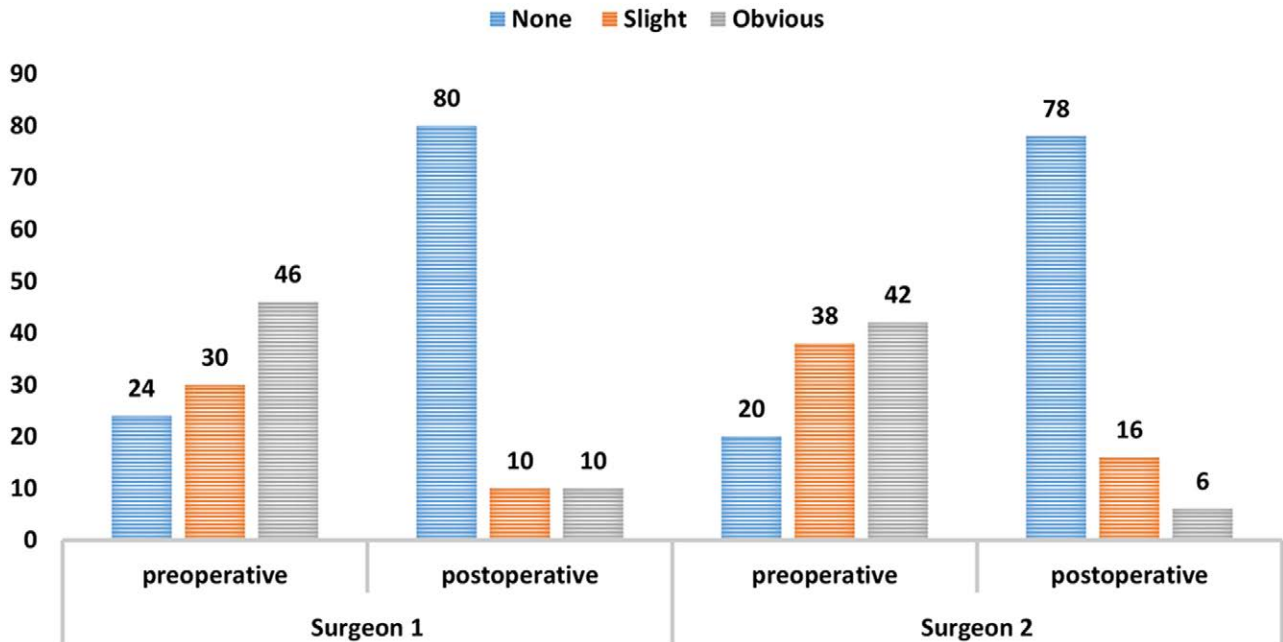


Fig. 4. Distribution of symmetry assessment among facelift procedures.

calcium hydroxyapatite) in areas where the skin was too thin or mobile.<sup>25</sup>

The serious complications of permanent filler use include vascular occlusion, hypersensitivity and allergic reactions, infection, nodules, and granuloma formation.<sup>26</sup> Many cases have required filler removal for these complications. However, outcomes from filler removal have not been widely reported.<sup>27</sup>

Fifty patients who had permanent filler and were seeking corrective facelift for complications related to their fillers were analyzed in this study. Most of the patients were older than 50 years old (44%). This is consistent with reports in the literature demonstrating that most cosmetic surgical procedures were performed in patients aged more than 65 years.<sup>28</sup> A large prospective study reported that the mean patient age seeking a facelift was 59.2 years.<sup>29</sup>

Our patients sought facelift surgery to correct problems resulting from permanent filler. The main side effects of the permanent filler among our patients were asymmetry (82%), disfiguring facial edema (24%), skin infection, and granuloma formation (12%), causing irregularities from indentations or nodules. As reported in the literature, the most common complication of all fillers is foreign body granuloma formation. They present clinically as erythematous nodules or papules 6–24 months after injection of filler.<sup>30</sup>

These complications forced patients to seek surgical consultation. Most of the patients were able to tolerate local anesthesia despite the longer operative time that was primarily required to remove the filler. The patients were asked about their level of tolerance to local anesthesia and their responses varied. Fifty-six percent of patients found it tolerable, whereas 4% stated that it was not tolerable.

Southwick and Jaeger<sup>31</sup> reported similar patient satisfaction scores with local anesthesia.

Most facelift procedures (64.9%) are combined with a neck lift, liposuction, or blepharoplasty. This requires more local anesthetic infiltration with perhaps more risk than a facelift alone. Data have suggested that local anesthesia favors faster recovery while decreasing the risks of general anesthesia and cost of surgery.<sup>31</sup>

Although some authors use a local anesthetic of 100 mL or 0.25% lidocaine with 100,000- and 200,000-units epinephrine, there are others who reported that a different combination of local anesthetic solution is superior during a facelift.<sup>32,33</sup> The minimal access cranial suspension lift uses a standard anesthetic solution of 100 ml of 0.9% sodium chloride, 20 ml of 2% lidocaine, 10 ml of ropivacaine at 10 mg/ml, 2 ml of 8.4% sodium bicarbonate, and 0.2 ml levorenin at 1 mg/mL, and 10 mg triamcinolone.<sup>34</sup> The choice of the anesthetic solution depends upon the surgeon's experience and preference. Some surgeons use a tumescent approach similar to that used in liposuction. Also, the degree of anesthetic infiltration differs depending on the surgeons' preference; some prefer to maintain a consistency in infiltration to help eliminate human error.<sup>35</sup>

In the current study, surgeons used superficial rhytidectomy with SMAS plication or SMASectomy with concomitant neck lift and platysma suspension. Intraoperative findings included granulomas, calcifications, and nodules of inflammatory and noninflammatory nature (Fig. 5). These were capsulated, fluid-filled, or solid. Some were deeply incarcerated within the tissues. Different shapes of extracted filler (cohesive type of filler, cystic type of filler,



**Fig. 5.** A 54-year-old woman with permanent filler was injected 13 years ago. A, Her complaint was firm swelling on both cheeks with asymmetry. B, Preoperative left oblique view. C, Preoperative right oblique view. D, Postoperative anterior view after intraoperative removal of granuloma extend deep to SMAS layer. E, Postoperative left oblique view. F, Postoperative right oblique view.

huge amount of unsolidified filler, small sacs, pyogenic membrane, rice distribution, and superficial cysts) were detected in the current research. (See Video 2 [online], which shows a cohesive type of filler. Permanent filler is found in subcutaneous tissue in form of cohesive mass without a defined cystic wall.) (See Video 3 [online], which shows a cystic type of filler. With deep filler injection, we found cyst infiltrating SMAS layer up to periosteum with terminal branches of facial nerve.)

Operative time varied considerably, from 4 to 7 hours. Surgeons encountered different presentations and locations of foreign bodies. The volume ranged from anywhere between 15 and 20 ml. (See Video 4 [online], which shows a huge amount of filler versus small sacs.) The most common plane of filler was the subcutaneous plane; however, in most cases, the material also affected the SMAS and sub-SMAS layers.

The objective of surgery was to excise the filler material and any associated inflammatory granulomas and sinuses. Preoperative planning required proper facial analysis with MRI. After removal of the filler, the concept was not to simply plicate the SMAS or redraped tissue, but to do facial shaping to create symmetry as adopted by Stuzin.<sup>13</sup> The aim of surgery was to restore facial symmetry and contour rather than lifting only, so we used a combination of techniques including SMAS plication/SMASectomy/redistribution with augmentation. After filler removal, the face usually deflates due

to the decreased volume throughout the face. Most patients present with a loss of the mandibular angle or with an oversized submalar fullness, leading to a square-shaped face.

Overall, the patients reported high satisfaction scores (84% were satisfied or very satisfied). Only 6% were unsatisfied with their results, largely due to postoperative complications. This is consistent with previous studies utilizing questionnaires to assess the changes in self-esteem and satisfaction at 6 months after facelift surgery.<sup>36–40</sup>

The most common postoperative complications were hematoma and ecchymosis (18%). Ten percent of patients had infection requiring treatment, 8% had contour irregularities or asymmetry, and the rest varied between seroma, emesis, nerve or vascular injury, and scars requiring revision (8%). Only 2% had alopecia. Southwick and Jaeger<sup>31</sup> reported a complication rate of 26.44%. A similar study analyzing complication rates in facelift surgery by Gupta et al<sup>41</sup> found that hematomas were the most common complication, representing about 62% of all complications, at a rate of 1.1%. This was followed by infection in 0.3% of patients, representing 15.1% of all complications, which is consistent with our findings. The rate of postoperative hematoma is considered very high, but this may be attributed to two factors. The first was that the surgery involved the removal of a preexisting permanent filler, and the second reason was that we included ecchymosis as a complication.

Our study is limited by the small sample size; therefore, we recommend future studies on a larger sample size to generalize our results with an assessment of patient postoperative self-esteem using a proper questionnaire. Another limitation was that patients with PMMA injection were included, which was the only registered permanent filler. However, we have encountered patients injected with other types of permanent fillers, outside the population of this study, by nonmedical staff or even at homes with no record available about name or composition of injected filler.

The main strengths of this study are that it is the first study to assess the effect of facelift surgery with permanent filler removal with use of local anesthesia. There were no signs or symptoms of lidocaine toxicity in our group of patients. Optimizing local anesthetic to provide adequate pain control is one way to maximize patient satisfaction in terms of patient perceptions of outcomes.

### CONCLUSIONS

Removing foreign body granulomas while performing a concomitant facelift has satisfactory results with minimal complications. An adequate subcutaneous dissection is required to remove permanent fillers and to perform SMAS plications to fill in the areas thinned by the removal of granulomas and filler. While multiple approaches to dissection have been described in facelift surgery, the authors of this article were forced to perform dissection in the subcutaneous tissue plane for adequate filler removal. The final outcome of the surgery was ultimately dependent upon the local tissue characteristics and the severity of the presenting problem.

Ahmed M. Zeina, MD

Department of Plastic and Reconstructive Surgery  
Faculty of Medicine  
Mansoura University  
60th Elgomheria Street  
35516 Mansoura, Egypt  
E-mail: xeena66@mans.edu.eg

### ACKNOWLEDGMENT

We would like to thank the scientific research office of Mansoura Faculty of Medicine for statistical analysis.

### PATIENT CONSENT

Patients provided written consent for the use of their images.

### REFERENCES

- Sinno S, Schwitzer J, Anzai L, et al. Face-lift satisfaction using the FACE-Q. *Plast Reconstr Surg*. 2015;136:239–242.
- The American Society for Aesthetic Plastic Surgery. Cosmetic surgery National Data Bank Statistics. *Aesthet Surg J*. 2018;38:1–24.
- Rohrich RJ, Sinno S, Vaca EE. Getting better results in facelifting. *Plast Reconstr Surg Glob Open*. 2019;7:e2270.
- Wolfram D, Tzankov A, Piza-Katzer H. Surgery for foreign body reactions due to injectable fillers. *Dermatology*. 2006;213:300–304.
- Serra MS, Gonçalves LZ. Permanent fillers. In: Issa M, Tamura B, eds. *Botulinum Toxins, Fillers and Related Substances. Clinical Approaches and Procedures in Cosmetic Dermatology*. Cham, Switzerland: Springer; 2019:1–8.
- Carruthers A, Carruthers JD. Polymethylmethacrylate microspheres/collagen as a tissue augmenting agent: personal experience over 5 years. *Dermatol Surg*. 2005;31:1561–1565.
- Fischer J, Metzler G, Schaller M. Cosmetic permanent fillers for soft tissue augmentation: a new contraindication for interferon therapies. *Arch Dermatol*. 2007;143:507–510.
- Kadouch JA, Nolthenius CJT, Kadouch DJ, et al. Complications after facial injections with permanent fillers: important limitations and considerations of MRI evaluation. *Aesthet Surg J*. 2014;34:913–923.
- Ono S, Ogawa R, Hyakusoku H. Complications after polyacrylamide hydrogel injection for soft-tissue augmentation. *Plast Reconstr Surg*. 2010;126:1349–1357.
- Lemperle G, Gauthier-Hazan N, Wolters M, et al. Foreign body granulomas after all injectable dermal fillers: part 1. Possible causes. *Plast Reconstr Surg*. 2009;123:1842–1863.
- Rohrich RJ, Ghavami A, Lemmon JA, et al. The individualized component face lift: developing a systematic approach to facial rejuvenation. *Plast Reconstr Surg*. 2009;123:1050–1063.
- Warren RJ, Aston SJ, Mendelson BC. Face lift. *Plast Reconstr Surg*. 2011;128:747e–764e.
- Stuzin JM. MOC-PSSM CME article: face lifting. *Plast Reconstr Surg*. 2008;121(1 suppl):1–19.
- Urdiales-Gálvez F, Delgado NE, Figueiredo V, et al. Preventing the complications associated with the use of dermal fillers in facial aesthetic procedures: an expert group consensus report. *Aesthet Plast Surg*. 2017;41:667–677.
- Rzany B, Hilton S, Prager W, et al. Expert guideline on the use of porcine collagen in aesthetic medicine. *J Dtsch Dermatol Ges*. 2010;8:210–217.
- Eppley BL, Dadvand B. Injectable soft-tissue fillers: clinical overview. *Plast Reconstr Surg*. 2006;118:98e–106e.
- Huq NS, Nakhlooda TI. Cosmetic face, neck, and brow lifts with local anesthesia. *Clin Plast Surg*. 2013;40:653–670.
- Alghoul M, Codner MA. Retaining ligaments of the face: review of anatomy and clinical applications. *Aesthet Surg J*. 2013;33:769–782.
- Rouso DE, Adams AS. Nuances in superficial musculoaponeurotic system rhytidectomy. *Facial Plast Surg Clin North Am*. 2020;28:285–301.
- Choucair RJ, Hamra ST. Extended superficial musculaponeurotic system dissection and composite rhytidectomy. *Clin Plast Surg*. 2008;35:607–622, vii.
- Baker SR. Deep plane rhytidectomy and variations. *Facial Plast Surg Clin North Am*. 2009;17:557–573, vi.
- Baker DC. Lateral SMASectomy, plication and short scar facelifts: indications and techniques. *Clin Plast Surg*. 2008;35:533–550, vi.
- Perkins SW, Patel AB. Extended superficial muscular aponeurotic system rhytidectomy: a graded approach. *Facial Plast Surg Clin North Am*. 2009;17:575–587, vi.
- Failey C, Aburto J, de la Portilla HG, et al. Office-based outpatient plastic surgery utilizing total intravenous anesthesia. *Aesthet Surg J*. 2013;33:270–274.
- Cassuto D, Sundaram H. A problem-oriented approach to nodular complications from hyaluronic acid and calcium hydroxylapatite fillers: classification and recommendations for treatment. *Plast Reconstr Surg*. 2013;132(4 suppl 2):48s–58s.
- Dayan SH, Arkins JP, Brindise R. Soft tissue fillers and biofilm. *Fac Plast Surg*. 2011;27:23–28.
- Kalantar-Hormozi A, Mozafari N, Rasti M. Adverse effects after use of polyacrylamide gel as a facial soft tissue filler. *Aesthet Surg J*. 2008;28:139–142.
- The American Society for Aesthetic Plastic Surgery. Cosmetic surgery national data bank statistics. *Aesthet Surg J*. 2015;35(suppl 2):1–24.



29. Varun G, Julian W, Hanyuan S, et al. Preoperative risk factors and complication rates in facelift: analysis of 11,300 patients. *Aesthet Surg J*. 2016;36:1-13.
30. Rohrich RJ, Monheit G, Nguyen AT, et al. Soft-tissue filler complications: the important role of biofilms. *Plast Reconstr Surg*. 2010;125:1250-1256.
31. Southwick G, Jaeger M. Commentary on: facelift performed safely under local anesthesia with oral sedation: analysis of 174 patients. *Aesthet Surg J*. 2019;39:470-471.
32. Koeppe T, Constantinescu MA, Schneider J, et al. Current trends in local anesthesia in cosmetic plastic surgery of the head and neck: results of a German national survey and observations on the use of ropivacaine. *Plast Reconstr Surg*. 2005;115:1723-1730.
33. Aston SJ, Walden J. Facelift with SMAS technique and FAME. In: Aston SJ, Steinbrech DS, Walden JL, eds. *Aesthetic Plastic Surgery*. London: Saunders Elsevier; 2009.
34. Tonnard P, Verpaele A. The MACS-lift short scar rhytidectomy. *Aesthet Surg J*. 2007;27:188-198.
35. Lapid O. Syringe-delivered tumescent anesthesia made easier. *Aesthetic Plast Surg*. 2011;35:601-602.
36. Gianoutsos MP, Hunter-Smith D, Smith JG, et al. Oral premedication for local anesthesia in plastic surgery: prospective, randomized, blind comparison of lorazepam and temazepam. *Plast Reconstr Surg*. 1994;93:901-906.
37. Friel MT, Shaw RE, Trovato MJ, et al. The measure of facelift patient satisfaction: the Owsley Facelift Satisfaction Survey with a long-term follow-up study. *Plast Reconstr Surg*. 2010;126:245-257.
38. Swanson E. Outcome analysis in 93 facial rejuvenation patients treated with a deep-plane face lift. *Plast Reconstr Surg*. 2011;127:823-834.
39. Alves MC, Abla LE, Santos Rde A, et al. Quality of life and self-esteem outcomes following rhytidoplasty. *Ann Plast Surg*. 2005;54:511-514.
40. Pusic AL, Lemaine V, Klassen AF, et al. Patient-reported outcome measures in plastic surgery: use and interpretation in evidence-based medicine. *Plast Reconstr Surg*. 2011;127:1361-1367.
41. Gupta V, Winocour J, Shi H, et al. Preoperative risk factors and complication rates in facelift: analysis of 11,300 patients. *Aesthet Surg J*. 2016;36:1-13.