

The Ugly Face of Cosmetology

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Abstract

Background: In recent years, there has been a tremendous increase in the number and types of cosmetic or aesthetics procedures, mostly indicated and some are non-indicated and not advised procedures.

Objective: To report all side effects and complications of all cosmetic procedures.

Methods: This is a case series descriptive study that was carried out during the period from 2014-2025, where all cases with cosmetic procedures that developed effects and complications were recorded, and full clinical assessments were performed.

Results: Fifty-five patients with different cosmetic complications were enrolled in the study. The following side effects and complications were noticed and as follows: filler problems in 26 (47.2%) patients, 15 (27.3%) patients presented with biofilms, 6 (10.9%) allergic reaction, 3 (5.5%) overcorrection and 2 (3.6%) cases with gangrene. Fourteen female (25.5%) patients with tattooing sarcoidosis were included. Pigmentation and scarring following facial Laser hair reduction were seen in 7 (12.7%) patients. Botulinum A toxin side effects were reported in 3 (5.5%) cases, including left asymmetry of lips and eyelids, allergic reactions, and pigmentation. Three (5.5%) male patients had scalp gangrene that followed a hair transplant.

Conclusion: Many complications and side effects were observed in different patients, predominantly among females. Grave complications included gangrene, biofilm formation, and tattoo-induced sarcoidosis. Many of these complications could be avoided and prevented using the appropriate injecting materials and most importantly, by selecting the right procedures.

Keyword: Cosmetic procedures; Ugly face; Biofilm; Filler problems; Tattooing; Botulinum A toxin.

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Introduction

Over the past few decades, nonsurgical cosmetic procedures are ever-expanding range and a rising trend worldwide abruptly, at the same time, carries benefits for patients and physicians, but as indications and the quantity of intervention performed increased, the number of worries will probably also increase.^{1,2}

For optimal outcomes, aesthetic doctors should have a

comprehensive knowledge of facial structure, the characteristics of drugs and instruments, and their indications, side effects, benefits, and methods to prevent and avoid possible complications.¹ Even a routine technique such as a punch biopsy may lead to cutaneous complications if not performed meticulously.³ Among these uppermost minimally invasive aesthetic interventions performed were soft-tissue fillers augmentation, botulinum toxin injection, chemical peels, laser hair removal, microdermabrasion

and hair transplantation.^{3,4} Furthermore, there has been an increase in eyebrow tattooing in the last few years, and it goes parallel with the upsurge of tattooing sarcoidosis.⁵

Early reactions of fillers include redness, ecchymosis, swelling, biofilm, anaphylaxis, and rarely skin necrosis and vascular infarction, but potentially extremely distressing complication. Late adverse effects include infection, abscess formation, and granuloma formation.^{6,7} Filler adverse effects can also lead to serious complications such as permanent blindness.⁸ Botulinum purified neurotoxin type A (BTA) is the most extensively used for cosmetic goals. Its use is continuously growing due to its benefits and infrequently reported serious adverse effects.⁹ Laser hair removal (LHR) is considered a safe technique for unwanted hair removal; however, the most frequently observed adverse effects are purpura, ecchymosis, dyspigmentation and scar.¹⁰ The most often reported complications of follicular unit transplantation (FUT) were pain, edema, swelling, and scarring.¹¹

Most researchers reported their greatest results, which are published online while there are very few publications reviewing the complications and bad outcomes. This research aimed to highlight the distressing cosmetic consequences following aesthetic interventions, particularly those procedures that cause harms, and their clinical consequences.

Methods

This is case series descriptive study that was carried out during the period from 2014-2025 years, where all cases of any ages, of both sexes obligated to an aesthetic intervention that performed by professional

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persons, lead to development of disfigurement, deformity, and complications were screened for eligibility, and full clinical assessments were performed. Exclusion criteria comprised individuals with traumatic injuries, congenital distortions, those who refuse to be included in the study, and an aesthetic intervention performed by untrained persons.

A thorough clinical evaluation focused on the type and facial site of the performed aesthetic procedure, time-to-onset, the severity of cosmetic insult, such as: non-transient erythema, facial distortion, asymmetry, dyspigmentation, necrosis, scarring, vision loss, or any further visible distortions. Furthermore, outcome assessment was done by an experienced dermatologist depending on visual deformity, functional weakening, psychological distress, and individual dissatisfaction, and classified as mild, moderate, or severe. Furthermore, drug history and related past medical diseases, such as diabetes mellites, hypertension, and tobacco use were documented. Participants were also questioned about any history of prior performance of the same procedure.

Variables were entered and analyzed using SPSS (Statistical Package for the Social Sciences), version 29 (IBM Corp., 2022, Armonk, NY, USA). Collected Data were summarized using frequencies and percentages, as well as means and standard deviations where applicable.

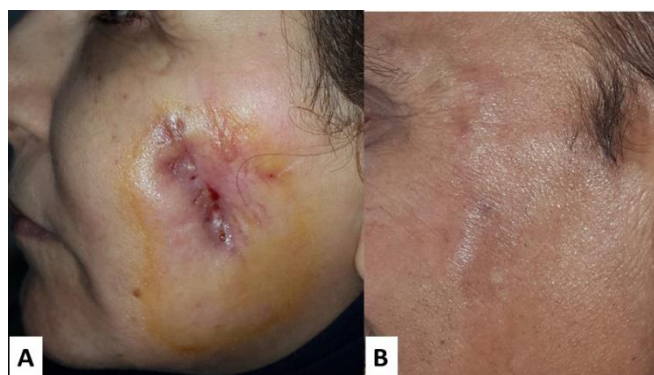
High-quality clinical images; besides, an informed consent was given by each participant before any data were collected, and optimal privacy, safety, and confidentiality were taken into consideration when collecting data. The study was conducted in accordance with the principles of the Declaration of Helsinki (1964) and its most recent amendment in October 2024. The Ethical Approval Committee approved the current study.

Results

Analysis of fifty-five patients with different facial cosmetic complications, their ages ranged from 20 to

Table 1 Types of the facial cosmetic complications and their procedures (n=55).

Procedure n (%)	Complications	The sites	N(%)	Time-to-onset	Past same procedure
Filler 26(47.2%)	Biofilms	Upper lip	8(14.5%)	2-7 days	4 Third, 2 Second, 2 First
	Biofilms	Checks	5(9.1%)	2-7 days	3 First, 2 Second
	Biofilms	Periorbital	2(3,6%)	2-7 days	Second
	Allergic reactions	Checks	4(7.3%)	1 to 24 hours	2 First, 2 Second
	Allergic reactions	Lips	2(3,6%)	≤1 hour	Second
	Overcorrection	Lips	2(3,6%)	≤1 hour	Second
	Overcorrection	Checks	1(1,8%)	≤1 hour	Third
	Vascular occlusion + gangrene	Nose	1(1,8%)	24 hours	First
	Vascular occlusion + gangrene	Lower lip	1(1,8%)	2 days	First
Tattooing-black ink 14(25.5%)	Sarcoidosis	Eyebrows	14(25.5%)	4.1(2-12) months	First
Laser hair reduction 7(12.7%)	Pigmentation	Checks, forehead and chin	4(2.2%)	2-7 days	3 Third, 1 Fourth
	Scarring	Nose	3(5.5%)	14-28 days	2 Second, 1 First
Botulinum toxin A injection 3 (5.5%)	Left asymmetry	lips and eyelids	1(1.8%)	7 days	First
	Allergic reactions	Checks	1(1.8%)	≤1 hour	Second
	Allergic reactions+ Pigmentation	Checks	1(1.8%)	24 hours	Second
Hair transplant 3(5.5%)	Scar	Scalp	2(3,6%)	28 days	First
	Scalp gangrene	Scalp	1(1,8%)	2-7 days	First
Fat augmentation 2 (3.6%)	Biofilms	Cheeks	1(1,8%)	2-7 days	First
	Biofilms	Cheeks+ Donor site	1(1,8%)	2-7 days	First

**Figure 1.** Showing filler complications: (A) biofilms, (B) allergic reaction.

50 years, with a mean±SD of 30±14.86 years, with forty-four (80%) females and 11 (20%) males. The following side effects and complications were noticed and as follows (**Table 1**): filler problems (**Figure 1**) in 26 (47.2%) patients, 25 females and one male, 15 (27.3%) patients presented with biofilms, 6 (10.9%) allergic reaction, 3 (5.5%) overcorrection and 2 (3.6%) cases with gangrene. Notably, patients of filler

**Figure 2** Showing: (A-C) filler gangrene of lip, and resume their normal anatomy, (D-F) filler gangrene of nose, resume their normal anatomy, by conservative management alone.

gangrene of nose and lips resume their normal anatomy by conservative management alone (**Figure 2**). Laser complications were seen in 7 (12.7%) patients, six males and one female that treated for facial hair that was followed by pigmentation, and scarring in 4 (2.2%) and 3 (5.5%), respectively (**Figure 3**). Adverse



Figure 3 The complications of laser facial hair reduction: (A) pigmentation, (B&C) scarring.



Figure 4 The adverse effects from botulinum A toxin: (A) allergic reactions, (B) pigmentation.



Figure 5 scalp gangrene that followed a hair transplant.



Figure 6 Showing a woman patient with eyebrows tattooing sarcoidosis.

effects from botulinum A toxin occurred in 3 (5.5%) cases, one female developed left-sided asymmetry of the lips and eyelids, and two patients exhibited allergic reactions that were subsequently followed by pigmentation. Around 23 (41.81%) of participants had a history of repeated filler, botulinum toxin A, or laser interventions (**Figure 4**). Three (5.5%) male patients had scalp gangrene that followed a hair transplant. Two female patients, 45y and 26 years old, had transfer biofilms; one female patient had gangrene of the right thigh following fat aspiration (**Figure 5**). Time-to-onset of complications ranged from ≤ 1 hour to 28 days. Individuals who undertake filler or Botulinum A toxin problems had multiple past similar procedures. On the other hand, the reported past medical diseases in this study, were 3 (5.5%) cases had diabetes mellitus, 3 (5.5%) had hypertension, and 8 (15%) had tobacco use.

Furthermore, fourteen (25.5%) females with eyebrows tattooing sarcoidosis were included, their ages ranged from 22-48 years with a mean \pm SD of 32 \pm 38.7 years. They gave a history of tattooing using mostly black ink, and rash appeared a few months to one year after

the procedure. All noticed swelling and itching that were gradually increasing in severity over-time. Also, these patients had granulomatous rash elsewhere in the body (**Figure 6**).

Discussion

Recent years have identified a great rise in the number and variety of aesthetic interventions, although the majority are achieved for appropriate indications, a subset was neither recommended nor advisable. This report underscores the disturbing harm and the clinical outcomes of the common aesthetic procedures. The overarching strength of this report is its providing of evidence-based, illegal thresholds for recognizing high-risk interventions and participant profiles.

The present study indicated that individuals experiencing facial aesthetic complications were chiefly reported in their third and fourth decades of life. This matches current trends, displaying that cosmetic interventions were predominantly sought by young adults; in this age group, in particular, they were

more implicated with digital media, heightened aesthetic awareness, and significantly influenced self-image.¹² The clear predominance of females compared to males in the current study was also consistent with preceding literature, as women continue to account for the popular cosmetic procedures, that often attributed to sociocultural engagement and greater cosmetic acceptance.¹³ However, the proportion of male patients is growing in the current study; recent article suggested that the proportion of men was increasingly looking for cosmetic treatments, and the rising importance regarding physical appearance within both professional and social settings.¹⁴ Overall, the demographic characteristics detected in this study were in line with global literature, where younger adults, mainly women, undergo facial aesthetic procedures and, therefore, were those most frequently getting related complications.

Aesthetic medicine comprises many types, but dermal fillers are widely utilized, yet their complications remain clinically significant, predominantly among women, including mild inflammatory reactions and severe life-threatening events.^{7,15} The presented study emphasizing biofilm formation and was the most common documented complication. This finding was consistent with a recent article, considering that biofilms were a major cause of delayed filler side effects, anywhere in filler-biofilm, there were groups of microbes adhered to filler material and established resistance to both immune clearance and antibiotics, presenting with nodules and chronic inflammation. This supports that many delayed side effects are infectious rather than merely immunologic. The upward understanding of biofilm-associated infections has important consequences for both diagnosis and management.¹⁶ Filler allergic reactions were described in 10.9% of cases; previous reviews reported that many assumed allergic reactions may in fact represent foreign body responses or biofilm-linked inflammation, leading to probable overestimation in clinical reporting.¹⁷ Regarding the filler technique-dependent complication, such as overcorrection in (5.5%) of patients. Although typically temporary and

reversible, practitioner expertise should follow the current guidelines highlighted careful dosing, filler physiochemistry, facial anatomy, and the mandatory use of reversal drugs when required.¹⁷

Of particular observation and as a set of specific adaptations, the present study noted that in some cases, like nose and lips gangrene following filler injections, might resume their normal anatomy, and restore their normal appearance by conservative therapy alone. This natural restorative process may be comparable to that noticed in certain animals that regenerate or restore normal anatomy after the removal of body parts, such as tails.¹⁸

Of particular clinical significance was the gangrene in 3.6% of cases, a serious adverse event. indicate vascular compromise resulted in tissue necrosis. Although rare in clinical practice, many recent article instructions stressed early diagnosis and rapid management to avoid irreversible damage. The referral of high-risk cases to the dermatologists was considered as a clue for the relatively elevated cases frequency in this study.¹⁹

The observed findings of pigmentary changes and scarring as laser-related complications with a pure predominance among males align with recent literature, which showed post-inflammatory hyperpigmentation as the most common drawback of laser hair reduction.²⁰ Notably, existing evidence underscores that laser-related risks can be avoided by device selection, pre-management preparation, selecting proper parameters, preliminary patch testing, and firm photoprotection.²⁰ Besides, in men, facial hair contributes not merely to aesthetic appearance but also provides a supportive structural role, analogous to a reinforcing framework, which may preserve a younger-looking appearance compared to age-matched women.²¹ Therefore, the authors recommend avoiding laser facial hair removal in men.

On the other hands, the detected transient facial asymmetry following botulinum toxin type A injection

was also reported in recent studies, and attributed to neuromuscular side effects due to accidental dissemination of the toxin to adjacent muscles, followed by temporary muscle imbalance.²² Furthermore, in susceptible individuals, an allergic reaction has been documented that can advance to post-inflammatory hyperpigmentation. New studies confirmed that allergic complication associated with botulinum A toxin was mild to moderate in severity, and especially reported during the COVID-19 pandemic.^{9,23}

Remarkably, the current reports underscored the scalp gangrene in (5.5%) of cases, the disastrous outcome following hair transplantation, although FUT was considered a safe procedure. The interpretation was often linked to the poor surgical planning or accidental technical factors such as high dose of vasoconstrictive agents, great graft density, biofilm-associated infections (poor aseptic conditions), and compromised vascular supply or scalp perfusion.²⁴

Additionally, the time-to-onset of adverse events associated with aesthetic procedures in this study ranged from ≤ 1 hour to 28 days, reflecting the varied nature of complications. Typically, early presentations were often linked to injection maneuver, technique, vascular compromise, or hypersensitivity responses. Alternatively, delayed complications are typically related to infection, biofilm formation, or delayed inflammatory responses.^{25,26} Notably, (41.81%) of participants developed complications following multiple prior similar procedures. Frequent exposure has been linked with a high risk of cumulative tissue changes, immune sensitization, and delayed complications.²⁷ Concerning patient-related risk factors, such as smoking, diabetes mellitus and hypertension were well recognized in this study. Whereas, in recent literature regarded as contributors to microvascular compromise, impaired wound healing, and increased susceptibility to infection, thereby prompting the postoperative complications.²⁸

Furthermore, about 25.5% of cases in this study

developed cutaneous manifestations of sarcoidosis, localized not only to eyebrow tattoo sites, but other sites were affected and predominantly with black color ink. These features are consistent with preceding literature, describing tattoo-associated sarcoidosis as a late granulomatous response.²⁹ The delayed onset detected in this cohort, lines up with recent evidence suggesting that tattooing sarcoidosis might occur, months to years after pigment implantation, reflecting a chronic immunologic process rather than an acute inflammatory reaction.⁵

Conclusion

Overall, the findings highlight the complications in cosmetic practice, implicating both procedural and patient-related factors, particularly among females. The dangerous reported outcomes included gangrene, biofilm and tattoo-induced sarcoidosis. Therefore, meticulous careful case selection, systematic medical evaluation, proper risk stratification, early diagnosis and appropriate dermatologic evaluation remain essential for minimizing complications or their prevention. Full-thickness gangrene of the nose and lips following filler injections or trauma can undergo complete anatomical and aesthetic restoration through conservative therapy alone, without surgical intervention. Further studies and reports from all over the globe are crucial to estimate the true magnitude of this major problem, thereby enabling its avoidance or prevention where feasible.

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