

The Overfilled Face

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Abstract

Keywords

- ▶ injectables
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The desire for longevity, beauty, and health is as old as the history of human culture. Minimizing tissue damage and invasive surgeries has led to a variety of options in the 21st century medicine. In the past 20 years, hyaluronic acid filler injections have thus become a popular modality of treatment for facial rejuvenation due to low costs for patients with immediately visible results. Ideally, the treated face looks natural. We aim at stopping time, maybe tweaking the handles of our clocks a bit backward to counteract aging processes, but creating a natural look and maintaining the individual appearance.

The desire for longevity, beauty, and health is as old as the history of human culture. First traces of make-up have been found in caves on the Iberic Peninsula and South Africa dating back to 100,000 before Christ. Living on earth and underlying gravity and environmental damages such as UV-light exposure and free radicals, certain changes on various levels of our bodies are implemented on living beings. As we age, our bodies undergo dynamic and cumulative transformations of the tissue structure due to the combined effects of bone resorption, weakening of the anchoring complex, facial muscle laxity, and movement changes, as well as soft tissue malpositioning. As all of this weakening occurs, we start to appreciate sagging and soft-tissue repositioning, translating into prominent eye-bags, tear troughs, nasojugal lines, nasolabial folds, and jowls.^{1,2}

In the past 20 years, hyaluronic acid filler injections have become a popular modality of treatment for facial rejuvenation due to low costs for patients with immediately visible results.³ The number of minimally invasive procedures is constantly growing reaching 1.6 million procedures per annum performed in the US in 2018.⁴

The change in self-perception and also self-criticism has shifted our minds and desires, where the egocentric selfie-

culture and self-portrayals and showmanship know no boundaries.

Along with the increased demand for filler treatments, the incidence of unexpected complications has simultaneously risen.⁵ Adverse reactions can be attributed to the use of higher filler volumes, larger bolus injections, frequently repeated treatments,⁶ as well as hasty or inappropriate injection techniques⁶ or combined filler mixture techniques. In many countries, a medical expertise or even surgical education and profound anatomical knowledge is not required, and medical ethics (“*nihil nocere*”) are thrown overboard for financial benefits.

One of the dangers of injectable rejuvenation, the **overfilled face syndrome**, is multifactorial. Incorrect assessment due to lack of experience or training, incorrect filler placement in fat compartments, poor selection of the injected product, and problematic injection techniques can all lead to the overfilled face syndrome.^{5,6} Often, an incorrect volume of filler is delivered due to physician over-zealousness or repeatedly placing fillers in the same tissue compartment over multiple treatment sessions.⁵ This syndrome is also known as overly puffy or “plastic” appearance. Too much of a good thing is never good, and additionally to fillers causing myomodulation, too much toxin (neuromodulation) can

give a paralyzed, mask-like face (frozen face syndrome) without remnant mimics or non-verbal expression. This does not only look odd but also hinders non-verbal communication, micro-mimics, and interpersonal connection.⁵⁻⁷

The possibilities of changing our looks seem endless nowadays, on a daily, shop-like basis from fashion and make-up over hair- and lash-extensions, brow tattoos, and artificial gel nails...to surgical interventions: desires are created and fulfilled.

Ideally, the treated face should look natural. We aim at stopping time, maybe tweaking the handles of our clocks a bit backward but creating a natural look and maintaining the individual appearance and not causing the unified beautification as seen in many actors and stars. This leads to an odd or awkward impression and not to a naturally beautiful face.

Where are we now?

Overfilled faces as depicted in ► **Figures 1 and 2** rise in the prevalence in social media and there is a justified concern in the aesthetics industry about imaging filters and smartphone applications exaggerating the beauty and perception, affecting patients and providers alike. This perception drift is dramatic and needs to be addressed. However, our perception of natural appearance is gradually changing. As certain features such as oversized lips become more ubiquitous, they are resetting social norms and making textbook anatomical norms seem, at times, insufficient. Still, there is a fine, malleable line between desirable and deviant.

Overfilled face syndrome is frequently seen among patients who desire more volumization or excessive midface lifting without a correct assessment. These overfilled faces could occur by wrong assessment or after multiple series of excessive filler bolus injections and may lead to an aesthetically unattractive volumization and bulking up compartments of the face. This highlights a prioritization of profit over artistry or lack of comprehension of the pathophysiology of aging, creating overfilled faces.

The patients' demand for "more fillers" must be halted by the experienced injector with a good eye, as well as excluding body dysmorphic syndrome. Often, personal judgments by our patients cannot be relied on anymore, their "thirst" for procedures seems unquenchable, and it is not only ethical but also precise to guide the patient into pausing their treatments.⁸

The call for a natural look by shifting volume ratios back to the youthful scheme and proportions restoring facial symmetry and youth, help creating a fresher and more rested look. We aim at repositioning the structures versus perfecting them because no face is naturally symmetric or perfect, as well as relax rather than freeze mimics.

Another delusion is the aim at the perfectly rated face, which is unnatural. The by Marquardt developed perfect face mask to depict the ideal ratios and golden angles does not describe an "ideal" facial shape because its proportions are inconsistent with the optimal preferences of most people, especially with regard to femininity.⁹

Aesthetic delusions also occur by repeated exposure: an investigation showed the role of rapid visual adaptation in aesthetic practice—an individual's perception changed when being presented with distorted and too full lips into that direction—thus the injectors must put an increasing demand of injections of some individuals to a halt.¹⁰

Where in the beginnings of minimally invasive rejuvenation, beauty was in the eye of the injector, we now have more clinical and anatomical research to strongly advise against intuitive and promote planned injections with a treatment plan and injection schemes producing reproducible and safe results (visualize—analyze—create a treatment plan—correct—refill).¹¹

Inappropriate filler usage and placement, as well as poor techniques, can create overfilled faces, and the main areas that can be affected are the cheeks, the jawline, and the tear trough. Overfilled cheeks may cause a wide unaesthetic face, overfilled jawlines may masculinize the female face giving a square shape face. In the tear trough area, overuse of filler can easily distort contours and produce the Tyndall effect, requiring hyaluronidase treatment.¹² It is crucial to use a full-face approach, including the jowls, jawline, chin and neck to create a harmonized rejuvenation.

Furthermore, overfilled faces can result from the cumulative effect of previously injected fillers¹³ or of filler migration, formation of biofilms and granulomas.¹⁴ These accumulations within a single area can lead to the development of non-inflammatory nodules that may become fibrotic causing a mass effect.¹³ In addition, using larger volumes of filler is one contributing factor in foreign body granuloma development, and if the filler used is non-biodegradable, then the granulomas may appear more pronounced and persist for much longer creating overfilled faces.¹⁵

Outlook and Recommendations

Overfilled face syndrome leads to an aesthetically displeasing appearance that may worsen psychological distress and irreversibly alter tissue. Research into filler longevity and histological studies on the permanent and transient changes in tissues is needed. Although some fillers are biodegradable, this has not been proven and these prescribed longevity quotes are completely arbitrary based on either no evidence whatsoever or extremely poor evidence. In studies, subjects are not usually followed beyond trial endpoints to document true filler duration. Yet, these numbers have conditioned patients to habitually ask injectors about the life span, and injectors responding without evidence, pushing to touch-ups based on unfounded information.

Also, many physicians do not consider overfilling to be problematic as they assume that this will resolve naturally after several months or years, but overfilled structure is generally unable to withstand gravity and aging, creating a distortion in ligaments that worsens the aging process, eventually leading to an unnatural looking sagging face.

Furthermore, studies comparing the migration rates of fillers of different volumes with fillers of different rheology will help physicians understand the volume limits



Fig. 1 Overfilled face 1.

underneath the skin. We have found a maintained result after several years from injection biodegradable fillers; hence, maybe these particles stimulate collagen product or unintended tissue layers.¹⁶

In addition, there is no precise tool for measuring how much remnant filler there remains in a face. To detect remnant filler material, injectors are advised to use imaging technology, such as MRI and ultrasound. While these modalities cannot calculate the exact amounts of gel in a cheek or tear trough, they can clearly show these substances sticking around long after purported absorption dates. This technology is unfortunately not routinely used for scanning faces before injecting.¹⁷

Injectors must be able to immediately recognize when an overfilled condition is present and provide treatments to address it. Treatment in these cases is cause-dependent. Overfilled faces require the direct injection of hyaluronidase into the areas containing excessive fillers. It is important for the physician to identify the layers in which the fillers could have been deposited. However, it is often very difficult to detect the clear borders of filler locations. Thus, injections are performed at multiple depths and angles in the hope of penetrating in multiple areas to dilute the filler. The use of radiofrequency micro-needling can help speed up the me-



Fig. 2 Overfilled face 2.

tabolism of the filler by denaturalizing it and sometimes a slight overcorrection is useful.

In biofilms or granulomata/capsulations, also hyaluronidase (e.g., Hylase) will allow for correction and may require multiple sessions of hyaluronidase treatments to achieve significant volume changes. The use of hyaluronidase may be ineffective if filler implants have been present for a longer time or are non-biodegradable fillers. Sometimes, to remove lumps may require needle punctures and a squeeze maneuver to remove it. Further, if this fails, it may require surgical removal, and a combination of oral antibiotics and steroids can be used.¹⁸

It is very important to increase patient awareness of overfilled syndrome to prevent this complication by advocating natural results. Having an awareness of the overfilled syndrome is the key among aesthetic doctors in preventing the creation of distorted, unnatural, and aesthetically unappealing faces and it is crucial to ensure that the aesthetic doctors make an effort to avoid overfilling and learn filler selection and volume quantity used depending on the location and rheology of the filler. By ensuring that practitioners are not deliberately causing harm by overfilling, the quality of aesthetic medical outcomes also improves. There is also a strong network among the top injectors to help less experienced colleagues, and their help should be appreciated when in doubt ([https://eafps.org/focus-groups/Aesthetic medicine](https://eafps.org/focus-groups/Aesthetic%20medicine)), and we encourage you to do so.

Conflict of Interest

None declared.

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