Contrasting post-filler lip bruises and shortening healing times: insulin needles as new frontier tools in facial aesthetic medicine

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Abstract

Background **The frequent use of aesthetic medicine and the decision to enhance injection precision have placed the community of aesthetic doctors before a significant challenge: to experiment with increasingly innovative injection techniques that can shorten healing times and ensure patients can quickly return to their daily routines (1). This article summarizes a careful observational analysis of female patients who received HA-based lip fillers. This study evaluates the reduction in healing times and post-treatment lip ecchymosis achieved through the use of these precision needles (2).**
Materials and methods **We treated 452 female patients of various ages, collecting observational data over 18 months. We treated 223 patients with a standard syringe and a 27G needle, while the rest were treated with 30G needles. Lip filler procedures were performed at two centers: Dr. Benedetto Michele's and Dr. Calvani Francesco's.**
Results and discussion **Of the patients treated with this syringe, only 22% experienced minor bruises that healed in about three days, 37% showed edema, and 3% exhibited asymmetry. This confirms that using a different injection device significantly reduces healing times, decreases the frequency of bruises, and clearly enhances patient comfort.**
Conclusions **Lip filler with 30G insulin needles offers reduced healing times, less bruising and swelling in the treated area, and better control over the injected volumes.**

Keywords: Lip augmentation, HA Lip Filler, filler post-treatment

Introduction

Nowadays, many aesthetic medicine treatments are frequently used worldwide, leading to increased outpatient access to specialized clinics.
Among the aesthetic medicine treatments most commonly used by the general population, lip filler stands out for enhancing and optimizing lip volume as well as redefining the shape and contours of the lips themselves (3).
Hyaluronic acid (HA) fillers for lip augmentation involve constantly evolving injection procedures and techniques, emphasizing aesthetic medicine as a field that requires extreme precision.
From an anatomical and functional perspective, the lips, in addition to playing a

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supplementary role in speech and language articulation, are a facial feature of significant physiognomic importance. The vascularization of both the upper and lower lips is particularly relevant for injection techniques (4).

Being highly vascularized, the HA injection treatment, using the syringe and needle provided, often causes the appearance of superficial edema and bruises, which, in the period immediately following treatment, can be visible blemishes for the patients receiving the treatment (2,3,4).

The enhancement of lip aesthetics through precision HA injection techniques is considered one of the gold standards among aesthetic doctors, aiming to minimize patient discomfort caused by lip bruising during treatment. The accuracy of HA injection can be improved by using thinner needles, such as those used for insulin administration. (3,4). Using insulin syringes with a 30G fixed (welded) needle offers several notable advantages in administering dermal fillers. Due to the small gauge, passing filler through a 30G needle can be challenging, often resulting in increased resistance during extrusion. This can compromise precision and raise the risk of tissue trauma, primarily caused by involuntary hand movements due to the greater force needed to depress the plunger.

Insulin syringes, which have a much smaller plunger surface area, require less force to push the product out. This leads to a more controlled and less painful injection process. Additionally, transferring the filler from a standard syringe into multiple insulin syringes allows for more accurate dosing and better product tracking. Using a thinner needle and less plunger resistance reduces injection-related trauma and improves overall safety and precision during the procedure.

Because of the characteristics discussed above, the lips are particularly well-suited for insulin needle use since the injection is superficial and the amount of hyaluronic acid to be injected is small. The most common filler used to treat lips has a capacity of 0.7-1 ml with 27 G needles or larger, depending on the filler's cross-linking degree and molecule size. Using insulin needles not only results in less trauma but also significantly reduces edema and bruising, allows for more precise filler infiltration, and lowers the risk of asymmetry from incorrect filler placement (5,6).

In this study, we aim to compare the frequency of bruises and edemas occurring after treatment with insulin needles and supplied needles, the relative healing times associated with each injection technique, and the injection accuracy of HA filler infiltration at the lip level using a syringe and supplied needle, compared to decantation in a 30G electrowelded insulin needle.

At the end of the data analysis, the pros and cons of using insulin needles will be assessed through both qualitative and quantitative statistical methods.

Several articles in the literature show less tissue trauma and a shorter recovery time with the use of insulin syringes and 30G needles (1-6).

Retrospective studies (6.7) have shown that submucosal infiltration of HA is safer and prevents episodes of vascular occlusion. In this regard, using insulin needles is ideal because, in addition to providing much greater injection accuracy, it reduces the pressure applied to the submucosa, thereby decreasing post-injection bleeding, superficial edema, and significantly minimizing injection trauma and the associated formation of ecchymosis.

Materials and methods

We treated 452 female patients of various ages, collecting observational data over 18 months. We used a standard syringe and 27G needle for 223 patients, while the remaining patients were treated with 30G needles.

The lip filler treatments were carried out at two separate centers by private practitioners: Dr. Benedetto Michele's center and Dr. Calvani Francesco's center. (Figure 1)

Both injecting doctors used the vertical lip technique (Figure 1).

After filling out the informed consent form, each patient underwent an anamnestic interview to assess the compatibility of the treatment with their health condition, the initial state of the lips, and their desired results.

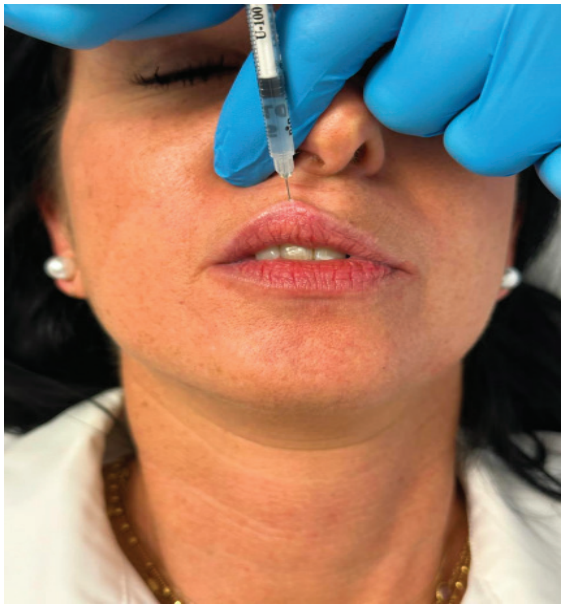


Figure 1. Vertical lip technique.

During the post-treatment period, each patient was monitored for 15 days at 48 hours, 72 hours, and 15 days to assess the frequency of superficial bruises and edema, healing times, the appearance of asymmetries after healing, and the degree of patient satisfaction with the final outcome based on healing times and resumption of daily activities.

We compared the results only in the lip area, using a standard 27 G syringe and needle with Yvoire® volume plus filler, to those obtained with a 0.5 ml insulin syringe and a 30 G electrowelded needle from the PIC, including transfer of the same filler into the insulin syringe (Figure 2).

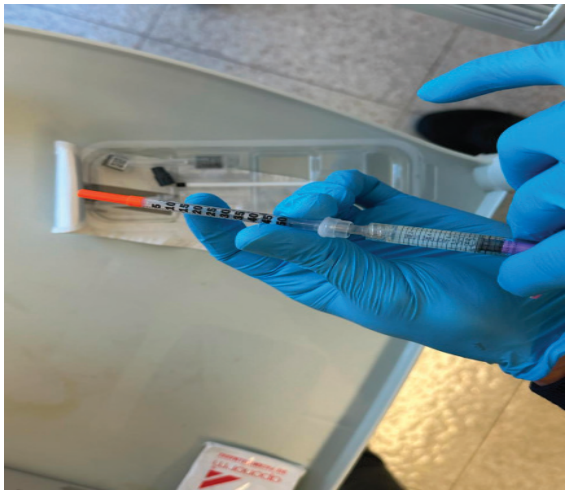


Figure 2. Yvoire® volume plus, filler transfer procedure with 0.5ml insulin syringe.

The filler used for the treatment is Yvoire® Volume +, which contains 1 ml of cross-linked HA supplied with a 27G needle. The concentration is 20 mg/ml HA.
All patients treated with both techniques had never undergone lip augmentation with HA or other fillers.
It is important to emphasize that, during the decanting phase of the filler in the insulin syringe, all sterility standards were maintained to protect the patient fully.
Since this was a qualitative study, the data were collected, analyzed statistically in Excel, and validated using Chi-Square tests.

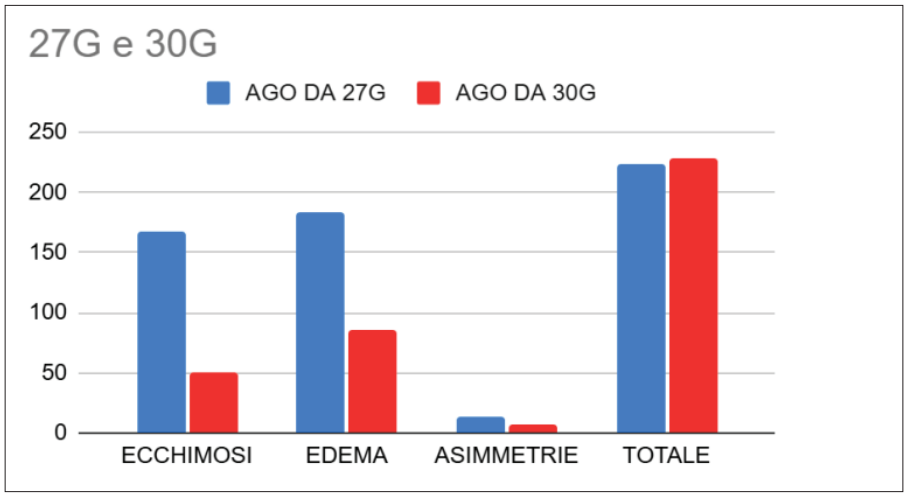
Results

We collected data from March 2022 to September 2024: 452 patients were treated with the same injection methods and filler. Of these, 223 patients received treatment with a 27-G syringe and needle, which showed increased bleeding. Ecchymosis two days after treatment was observed in about 75% of patients, with a longer healing time; lip edema occurred in 82% of patients the day after treatment; and asymmetries were seen in approximately 6% of patients (Graph 1).

The remaining 229 patients were treated with an insulin syringe and a 30-G electrowelded needle.
Among the patients treated with this syringe, only 22% experienced minor bruises that resolved in about three days, 37% had edema, and 3% showed asymmetry.
In detail, the healing times of ecchymosis and lip edema, as well as the frequency of atypical asymmetries, were observed in relation to the thresholds of imprecision tolerated during the precise execution of the technique (Figure 3).
Based on a comparison between Figure 3 and Figure 4, evidence suggests that using a 30G syringe decreases ecchymosis and trauma after treatment. To improve observational accuracy and facilitate better comparison of results, three variables were analyzed in evaluating the two techniques: the occurrence and healing of ecchymosis, the occurrence and healing of edema, and the presence of asymmetries beyond the maximum threshold permitted by the technique.
For each variable and each technique (Lip filler with 27G needle and Lip filler with 30G needle), observation and monitoring intervals of 48 hours, 72 hours, and 15 days were used. This allowed for a broad and comprehensive estimate of individual healing times.
From Graph 2 below, a high incidence of edema and ecchymosis after treatment with the 27G syringe is evident at 48 and 72 hours.
Conversely, the technique using 30G insulin needles has demonstrated a lower incidence of edema and ecchymosis, with reduction already evident 48 hours after treatment and complete resolution by 15 days. Asymmetries are also minimal, and unlike the technique with 27G needles, they are negligible 48 hours post-treatment.
No partial or total vascular occlusion occurred with either syringe. Compared to the standard 27 G needle, using 30 G needles offers greater comfort during treatment and a lower perception of pain.

Discussion

Lip filler is an aesthetic medicine treatment that a large portion of the world's female population undergoes (8,9). Due to its frequent use and the success of



Graphic 1

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Figure 3. Comparison of lip HA Filler before and after treatment with a 27G syringe.

the post-treatment aesthetic results, the technique has been continuously refined until today, reaching significantly high levels of safety and post-treatment recovery (10,11).

The study conducted by Dr. Benedetto's team showed that using a different injectable device significantly reduced healing times and bruising frequency, while also improving patient comfort and simplifying the injection procedure (according to results in 15,16).

Conclusions

This article examined the accuracy and healing effectiveness of post-HA filler lip ecchymosis using 0.5 ml insulin syringes with 30G needles, comparing the results with the same treatment performed with the supplied 1 ml syringe and 27G needle. As shown in the results and discussion sections of this article, it is clear that lip filler administered with 30G insulin needles results in shorter healing times and a lower incidence of ecchymosis and edema in the treated area, as well as offering greater precision in infiltration and requiring a smaller amount of HA (12,15,16).

Furthermore, this technical approach, which involves transferring specific filler volumes into insulin syringes, ensures better control of the actual injected amounts (11,16). A 53% reduction in bruising, a 45% decrease in edema, and a 3% decrease in asymmetries were observed, showing that using 30G needles reduces the likelihood of post-treatment complications and enhances the overall outcome (13,14,15).

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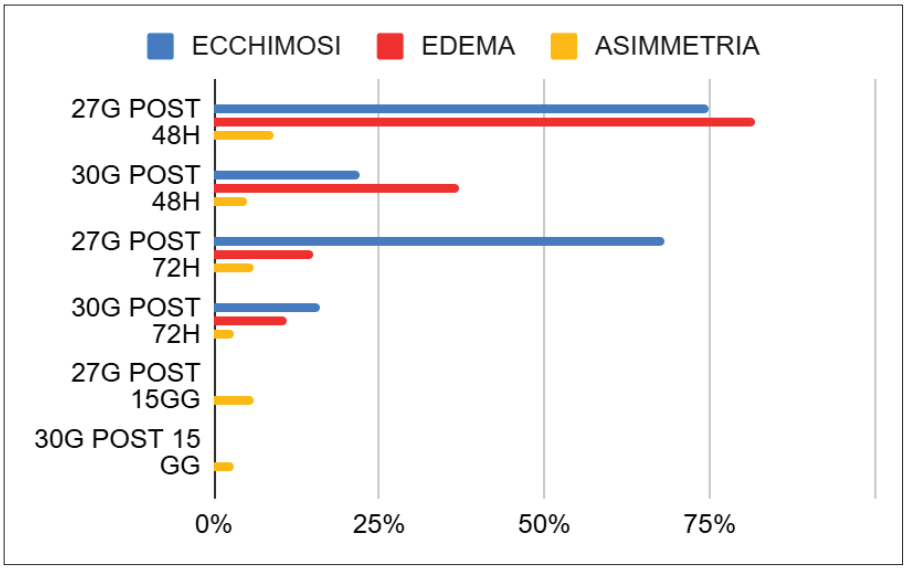
Figure 4. Comparison of lip HA filler before and after treatment with a 30G syringe.



Graphic 2

Conflict of Interest statement

The authors declare that they have no conflicts of interest to disclose. This article doesn't contain any studies with animals performed by any of the authors.

Statement of human and animal rights, ethical approval, and informed consent

This article does not contain any studies with animals performed by any of the authors.
This article involves human participants whose informed consent has been signed and approved.
All studies were performed in accordance with ethical principles, and for datasets containing clinical data, the authors confirm their ethical and legal responsibility to respect participants' rights to protect their identity and privacy.

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