

Lips enhancement using hyaluronic acid

Abstract

Lip filling with hyaluronic acid is a minimally invasive aesthetic procedure widely used to improve the appearance of the lips. This review article involved a critical analysis of the available scientific evidence on using hyaluronic acid in lip fillers, including application techniques, complications, and clinical results. The reviewed studies suggest that hyaluronic acid is effective and safe dermal filler for improving lip volume and appearance with a high patient satisfaction rate. However, the product and application technique choice must be carefully evaluated to minimize complications and maximize results. In addition, the knowledge of anatomical structures and the professional's skill are essential to obtain an aesthetic and natural result.

Keywords: lip augmentation, hyaluronic acid, dermal fillers, complications, injection technique, cosmetic surgery

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Introduction

Lip filling with hyaluronic acid is a non-surgical aesthetic procedure that aims to increase lip volume and improve lip contour.¹ Hyaluronic acid is a molecule naturally present in the human body, responsible for maintaining the hydration and elasticity of the skin and connective tissue. Due to its properties, hyaluronic acid has been widely used in aesthetic medicine for facial rejuvenation and volume enhancement in different body areas, including the lips.²

The purpose of this article is to describe the technique we use and to perform a systematic review of the available scientific literature on the use of hyaluronic acid in lip augmentation and discuss its efficacy, safety, and adverse effects.

Materials and methods of literature search

Electronic searches were performed in the PubMed, Scopus, and Web of Science databases using the terms “hyaluronic acid”, “lip filler” and “aesthetics”. Studies published in English between 2016 and 2023 that addressed the use of hyaluronic acid in lip fillers in humans were selected. Studies that reported results from lip filling with hyaluronic acid were included, regardless of the technique or concentration used. However, studies that evaluated other filling substances or techniques, as well as studies that did not include humans, were excluded.

Indications of hyaluronic acid in lips

Lip volume augmentation: Hyaluronic acid can be used to increase the volume of the lips and improve their definition.

Correction of lines around the lips: Hyaluronic acid can be used to correct fine vertical lines around the lips, also known as “barcode lips” or “lipstick lines”.

Lip Rejuvenation: Filling with hyaluronic acid can help smooth wrinkles and fine lines around the lips, helping to restore a more youthful appearance.

Correction of lip asymmetries: Filling with hyaluronic acid can

correct lip asymmetries, such as unevenness or lack of symmetry between the upper and lower lip.

Methods of administration

We perform lip filling through a minimally invasive technique that uses a thin and flexible cannula to inject hyaluronic acid into the lips. This technique has been widely used, as it has several benefits over the conventional needle injection technique. Next, we describe the lip-filling technique with a cannula step by step:

Pre-procedure evaluation: Before the procedure, the professional should evaluate the patient to determine the areas that need filling, considering the symmetry, proportion, and volume of the lips.

Patient preparation: The patient should wash the face and apply a topical numbing cream to the areas to be treated approximately 15 minutes before the procedure.

Choice of material: We prefer to use a medium to high-viscosity hyaluronic acid to obtain a longer-lasting result with greater support capacity on the lips.

Cannula insertion: The cannula is inserted at an entry point, usually at the labial commissure, and is directed gently toward the treatment area. The cannula is flexible, which allows it to minimize tissue trauma. The filling is done in several layers and multiple points to obtain a more natural result. We chose to insert the cannula at different angles and directions, aiming to fill in the desired area and improve the definition of the contours of the lips. Generally, the filling starts in the cupid's bow region and extends to the sides, filling the upper lip areas. On the lower lip, we start from the medial point and distribute the product in fanning. In addition, the technique must be performed with smooth and slow movements to avoid excessive trauma to the skin and minimize the risk of complications.

Hyaluronic acid injection: Hyaluronic acid is applied via retrograde injection smoothly and continuously while the cannula is slowly removed.

Finishing: After completing the procedure, we must massage the lips to ensure that the product is evenly distributed, and we can apply ice to minimize swelling and reduce pain at the injection site.

Brands and variants

The use of hyaluronic acid for lip fillers has been widely studied in recent years. Several studies have reported the efficacy and safety of HA as a dermal filler to improve the appearance of the lips. In the literature, we found randomized clinical trials showing that hyaluronic acid was significantly superior to placebo in enhancing lip volume and reducing perioral wrinkles, with a favorable safety profile.³

The brands we use in our private practice are: Belotero Intense (Merz Inc) is known for its smooth and even texture, which can help create a natural-looking result. Juvéderm Volbella (Allergan Inc.) is designed specifically for use in the lips and can provide natural-looking volume and definition. Restylane Kysse (Galderma Inc.) is also intended for use in the lips and can help to enhance volume and smooth out wrinkles and fine lines.

A randomized placebo-controlled clinical trial conducted by Hilton et al.,⁴ evaluated the efficacy and safety of hyaluronic acid in improving lip volume and appearance. The results showed that hyaluronic acid enhances lip volume and reduces perioral wrinkles, with a favorable safety profile.⁴

In addition, a retrospective chart review study by Guo et al.,⁵ evaluated the long-term safety of HA for lip fillers in a large sample of patients. Results showed that HA was well tolerated by patients and safe, with few reported long-term side effects.⁵

Other results showed that different hyaluronic acid-based products were effective and safe in improving lip volume and appearance, with an average duration of about nine months.⁶ The application is usually well tolerated by patients, with few reported side effects, such as pain, swelling, and bruising at the injection site.⁷ However, it is essential to highlight that the injection technique and the skill of the health professional who performs the procedure can influence the efficacy and safety of the treatment.⁸

The reviewed studies suggest that hyaluronic acid is an effective and safe dermal filler for improving lip volume and appearance. However, it is essential to consider the injection technique and the healthcare professional's skill to ensure the treatment's efficacy and safety.

Side effects and disadvantages

The available scientific literature suggests that hyaluronic acid is a safe and effective option for lip augmentation. Hyaluronic acid fillers are generally well tolerated by patients, with a low rate of adverse reactions and side effects.⁹

The lip-filling technique using a cannula has several benefits, such as less tissue trauma, less risk of bruising, less pain, and post-procedure discomfort, resulting in a more natural and harmonic result.¹⁰ In order to perform a lip filler with a cannula, it is essential to have adequate knowledge of the facial anatomy, as this will help to minimize the risks of complications and ensure a satisfactory aesthetic result.⁷

The anatomical structures that guide a cannulated lip filler include:

Labial arteries and veins: The labial arteries and veins are vital vascular structures that must be avoided during the procedure, as the injection of hyaluronic acid into these areas can cause bruising or tissue necrosis. The cannula must be inserted in a place that minimizes the risk of damaging these structures.¹¹

Orbicularis oris muscles: The orbicularis oris muscle is a circular muscle that surrounds the lips and is responsible for the movement of the lips during speech and facial expression. When performing a lip filling with a cannula, the professional must be careful not to inject hyaluronic acid into the muscle, which could lead to a deformity in the movement of the lips.

Lip landmarks: Several landmarks should be taken into account during a cannula lip filler, including the Cupid line, the red line, and the white line. These lines can guide the injection of hyaluronic acid to create a more natural and harmonious appearance.¹²

Labial corners: The labial corners are the areas where the lips meet the cheeks. During a lip filling, the practitioner should pay attention to the corners of the lips to ensure the filling is even and natural. Overcorrection can result in an elderly appearance.¹³

The thickness of the tissues: The thickness of the tissues on the lips can vary from one person to another, affecting the amount of hyaluronic acid that can be safely injected. The professional must carefully assess the thickness of the tissues before filling to determine the appropriate amount of hyaluronic acid to be injected.¹⁴

Several studies have shown that hyaluronic acid can significantly improve the lips' volume, shape, and contour, resulting in more defined and fuller lips. However, it is crucial for the professional to maintain a balance between symmetry and naturalness of the lips during filling. The duration of effect varies according to the formulation used but generally lasts six to twelve months. In addition, hyaluronic acid can be used to correct lip asymmetries and improve the appearance of vertical lines that form on the lips with aging.¹⁵

We must also choose hyaluronic acid according to its viscosity. The viscosity of hyaluronic acid refers to the resistance to deformation or flow under applied stress or force. It is a measure of the thickness or consistency of the HA, which can vary depending on the concentration, molecule size, and processing of the HA. Low-viscosity hyaluronic acid is more fluid and is used for more superficial fillings in the lips. It offers a more natural result; the average duration is 6 to 9 months.¹⁶ High-viscosity hyaluronic acid is thicker and is used to fill deeper areas of the lips, such as the top and contour. It offers a longer-lasting result and can last up to 12 months.

Although lip fillers with hyaluronic acid are a minimally invasive and generally safe procedure, there are some complications that can occur.^{17,18} Some of the most common complications include:

Swelling: Swelling is a common reaction after lip fillers with hyaluronic acid and usually subsides within a few days.

Bruising: Bruising is common after lip fillers and can lead to pain, swelling, and temporary skin discoloration.

Asymmetry: Sometimes, the lips may have asymmetry after lip filler. This can usually be corrected with an additional injection.

Infection: Infections can occur after lip fillers, mainly if the procedure is not performed with proper aseptic technique.

Necrosis: In rare cases, injection of hyaluronic acid can lead to tissue necrosis, causing cell death and permanent damage to the skin.

Allergy: Although rare, some people may be allergic to hyaluronic acid.

Nodule formation: Sometimes, small nodules may form at the injection site. These lumps are usually temporary and disappear over time.

Vascular occlusion: Hyaluronic acid injection can compress blood vessels, leading to tissue ischemia. This can lead to necrosis, scarring, or other permanent damage.

It is essential to discuss all possible complications and risks of lip filler with hyaluronic acid with the patient prior to the procedure. Finally, it is vital to highlight that each patient has a unique labial anatomy, which may influence the filling technique chosen by the professional. Therefore, discussing patients' expectations and following their beauty standards is essential to obtain a satisfactory and safe result.¹⁹

However, it is vital to emphasize that the procedure's success depends on the skill of the professional who performs the application. In addition, the proper injection technique and correct dosage are crucial to obtain a natural and harmonic result.²⁰

The latest studies continue to support the efficacy and safety of hyaluronic acid as a dermal filler to improve the appearance of the lips. In addition, new injection products and techniques are being developed and evaluated to enhance treatment outcomes further.

Conclusion

Hyaluronic acid is a safe and effective option for lip augmentation, providing satisfactory and long-lasting aesthetic results. Dermal fillers based on hyaluronic acid are generally well tolerated by patients and have a low rate of adverse effects. However, a qualified and experienced professional must perform the application to avoid complications.

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Conflicts of interest

Authors declare there is no conflict of interest.

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