

# Lip filling with microcannulas

## Preenchimento labial com microcânulas

### ABSTRACT

This paper describes a lip filling technique that administers hyaluronic acid using microcannulas. This technique considerably reduces the number of punctures compared to the conventional method, which uses needles. In addition, the microcannula's blunt tip reduces the risks of intravascular injection of the substance and of disrupting key structures such as vessels and nerves. The results obtained by the authors confirm the less frequent occurrence of adverse effects and a high degree of physician and patient satisfaction.

**Keywords:** hyaluronic acid; lip; rejuvenation.

### RESUMO

Trata-se da descrição de técnica de preenchimento labial com ácido hialurônico utilizando microcânulas, que diminui muito o número de punções necessários ao método convencional com agulhas e reduz a possibilidade de injeção intravascular do produto, além de restringir o risco de ruptura de estruturas nobres, como vasos e nervos, devido à ponta romba. Os resultados encontrados confirmam a menor ocorrência de efeitos indesejáveis e alto grau de satisfação de médicos e pacientes.

**Palavras-chave:** ácido hialurônico; lábio; rejuvenescimento.

### INTRODUCTION

Despite their wide use in other medical specialties, such as ophthalmology, there are few reports on the use of microcannulas to inject filling material in dermatology.<sup>1,2</sup> Aging causes the lips to become narrower and lose their volume and contour, however hyaluronic acid injections help re-establish those characteristics.<sup>3,4</sup>

### METHODS

Patients with aesthetic complaints about their lips (such as deficiency in contour definition, volume and projection) were included in the study. Patients with a history of allergy to the filler product, those with collagen disorders and pregnant women were excluded. The treatments were carried out at a private practice between October 2010 and May 2011.

### APPLICATION TECHNIQUE

If the needles and cannulas used has a small gauge, there is no need for an anesthetic point to introduce the microcannula into the skin. Punctures are made in the skin 25 mm from the apex of the cupid's bow on the upper lip with a 26G ½ needle, as shown in Figure 1. After inserting the 30G calibre 25-mm long microcannula (Magic Needles®, Needle Concept, Paris, France), the practitioner will feel a resistance caused by the dermis' fibrotic fibers. Continuing the injection past that point indicates that the subdermic plane, where the filling should be placed, has been reached. We used 24-mg/ml hyaluronic acid with added lidocaine (Juvéderm Ultra®, Allergan inc, Irvine,

## New techniques

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**Figure 1** - Lips before and after the green dots mark the introduction of the 30G x 25 mm microcannula



**Figure 3** - Implementation of the technique for lip projection: the 30G x 25 mm microcannula is moved through the same puncture towards the labial mucous membrane and the product is applied *in bolus* or through retro-injection; the tip of the microcannula can be seen as a moderated relief shown in the treated lip

California, USA) for the implant.

This technique uses only one micropuncture for the introduction of the microcannula, allowing the treatment of three different features of the lips with different results: contour definition, projection and increase in lip volume.

To improve the upper lip's contour, the microcannula is introduced between the skin and the vermilion of the lip. Next, the linear retro-injection of the product is carried out starting from the apex of the cupid's bow (on the side being treated) towards the corner of the mouth (Figure 2).

To improve the projection of the lips, the microcannula, which is still in the subdermic plane, is moved towards the lip's mucus membrane. The product is then retro-injected or injected all at once (Figure 3).

To increase the lips' volume, the microcannula is directed towards the oral mucus membrane and inject the product all at once (Figure 4).

To treat the lower lip's contour, a 26G ½ needle enters 10 mm from each corner of the mouth and the same technique used for the upper lip is carried out. For treating the shape of the middle of the lower lip, a micropuncture is made 25 mm from the first orifice, and the hyaluronic acid is retro-injected (Figure 5).



**Figure 2** - Left: 30G x 25 mm microcannula; Right: demonstration of the technique to improve the contour of the lip: the microcannula is introduced into the micropuncture made with a 26G ½ needle and the product is retro-injected linearly from the apex of the cupid's bow to the corner of the mouth; the microcannula's tip can be seen in the apex of the cupid's bow



**Figure 4** - Implementation of the technique for increasing the lips' volume: the 30G x 25 mm microcannula is moved through the puncture towards the oral mucous membrane and the product is applied *in bolus*; the tip of the microcannula can be seen inside the treated lip

When the objective is to treat the corners of the mouth, the filling of the contour of the lower lip is carried out by retro-injection with a microcannula so as to form the 25-mm base of an inverted triangle. Next, three vertical support pillars are formed by retro-injecting hyaluronic acid from the same entry micropuncture, located 7 mm from the horizontal base, with a 30G needle, as shown in Figure 6.

Using the same micropuncture made in the corner of the lip, it is possible to treat perioral wrinkles by directing the 30G microcannula upwards to those wrinkles to carry out the retro-injection (Figure 7).

## RESULTS

Patients aged 18-71 (n = 55, 47 women and 8 men) were treated. The patients reported a high degree of satisfaction (Figure 8). We observed minimal edema and erythema compared to conventional procedures that use needles when reshaping the lips. Mild edema, without erythema, was noticed in the treatment of the lip and oral mucus membrane areas. There was no bleeding and, consequently, no ecchymose. No edema or erythema was observed in the treated lips in the six hours following the procedure.



**Figure 5** - Above: Implementation of the technique to improve the commissure and lateral labial contours through the same puncture in the lower lip; Below: Implementation of the technique to improve the shape of the center of the lower lip



**Figure 6** - Above: The technique's method for treating the corner of the mouth with a needle is seen on the left: a horizontal line, 1 cm laterally from the corner, is made by retro-injecting up to 1 cm medially; Below: the needle is introduced below the horizontal pillar and three vertical lines are retro-injected starting from the same micropuncture, forming an inverted triangle to the right of the corner of the mouth

## DISCUSSION

The lips are centrally located in the lower third of the face and are capable of expressing emotion, sensuality and vitality.<sup>3</sup> In this technique to treat the lips, the author's classification, which divides the lips into three different anatomical areas, was employed. A different result will be obtained in each of those areas after the filling:

- Lip contour: it is enhanced when the product is retro-injected linearly from the central to the lateral area of the lips.
- Lip mucous membrane: the projection of the lips is obtained when this area is injected.
- Oral mucous membrane: when filling that region using the *bolus* technique, the volume of the lips is increased because



**Figure 7** - The 30G x 25 mm microcannula treating perioral wrinkles in the upper lip; its tip can be seen in the supralabial region



**Figure 8** - Above: lips before treatment; Below: the lips, newly filled with hyaluronic acid through a 30G x 25 mm microcannula; the contour was corrected and the projection was increased in the upper lip; the contour was corrected and the projection and volume were increased in the lower lip

the local dental arch pushes the filled area to the front.<sup>4</sup>

The skin of the lips can be described as thick and juxtaposed to the muscular layer, with its thin and delicate red zone comprised of transition epithelium between the skin and the mucous membrane. The lateral region of the lips' subcutaneous layer affects the adhesion of the skin and mucus membrane to the muscles.<sup>5</sup>

The superior and inferior labial arteries (branches of the facial artery) are responsible for irrigating the lips. Facial arteries are extremely tortuous; needle-based or intravascular injection techniques frequently perforate them, producing a greater risk of hematomas and ecchymoses.<sup>6</sup> Injections with sharp and short (7 mm) needles require several punctures for the fillings to be carried out,<sup>7</sup> which causes a higher release of histamine and increases the risk of edema, erythema and hematomas, in addition to causing more pain.

Microcannulas are very safe due to their flexibility and blunt tip, which does not hurt vessels or nerves, and is more comfortable for patients. Although the procedure is not completely without complications, the use of microcannulas avoids the lesion of important structures and accidents that can be caused by intravenous injection, considerably decreasing the amount of bruising.<sup>8</sup>

## CONCLUSION

If procedures are carried out carefully and delicately, it is safe to work in deep, subdermic planes with microcannulas, which reduce the risks to the patient. ●

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