

## Case Report

# Mid- Facial Restructuring with Hyaluronic Acid: A Case Report

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## Abstract

**Introduction:** The correct planning of the restructuring of the middle third of the face is essential in minimizing the amount of fillers and procedures that will be used. In addition, this makes it possible to employ appropriate filler techniques and materials to correct volume losses and lines characteristic of facial aging in a way that is natural. So, this article aims to report a clinical case of restructuring the middle face.

**Case report:** A 59-year-old female was concerned with her very deep nasolabial fold and absence of cheekbones. For attending her issues, it was performed a global face reconstruction, starting with the middle third of the face, and including the malar eminence region, zygomatic arch, pre maxilla and pyriform space, using hyaluronic acid.

**Conclusion:** The restructuring of the middle third of the face in the case presented satisfactorily improved the aspects initially pointed out by the patient and repositioning of the malar region.

**Keywords:** Hyaluronic acid; Aging; Rejuvenation

## Introduction

The middle third of the face extends from the supraorbital margins to the base of the nose [1], and includes the eyes and the periorbital region, the zygomatic-malar projection, and the nasal region. Greater fat volume makes the middle third of the face more susceptible to changes in contour and volume as a result of the aging process [2], which is a dynamic and continuous process that involves intrinsic and extrinsic factors [3]. For this reason, the restructuring of the middle third of the face is essential to reverse characteristic signs of aging and to bring balance and harmony to the face [2]. The variety of procedures available for restructuring the middle face was made possible by the development of long-lasting resorbable materials [4]. Hyaluronic acid has become the gold standard material for facial fillers because it is biocompatible, has minimal migration, is easily applicable and because it has a longer-lasting effect on the skin, without being permanent [5]. Differences in the degree of

reticulation, particulation and rheological properties of hyaluronic acid gel allow different formulations to be created to meet different needs. In other words, the physical-chemical properties of the gel are related to clinical use [6]. Thus, in the middle face, we opt for a more fluid gel in the medium to deep layers of the skin (subcutaneously) to correct moderate to severe lines, and a gel with a high lifting capacity to suppress the level for malar volumization, restoring the volume of the defects in the contour of the middle face, correction of infraorbital lines and nose remodeling [7-9]. Restructuring should begin in the malar region, serving as a parameter for all volumetric replacements in the middle face [10]. Applying fillers in the malar region is recommended for cases in which there are pronounced orbital-eyelid lines or deep nasolabial fold. After applying the filler, this region must be immediately massaged so as to mold the material, assessing the need for greater volume. Once a satisfactory malar volume is achieved, the zygomatic, submalar, periorbital and nasolabial regions should be reevaluated. This approach is most often able to achieve satisfactory results in correcting these lines [2,11]. Many times, this direct filler technique is not enough to correct the nasolabial fold. In these cases, the treatment can be complemented by using a more fluid hyaluronic acid for dermal filling in the remaining skin impression, or one with a greater lifting capacity to fill deeper folds, following the direction of the fold, positioning the needle parallel to the skin and with retrograde injections. For this reason, the direct filling of the nasolabial fold has been losing ground [10]. The filling of the orbital malar groove can be done directly. This requires the use of a hyaluronic acid with low reticulation and in small volumes in the subcutaneous plane due to the small thickness of the skin. For the lacrimal grooves, even smaller volumes in the supraperiosteal region should be used due to the absence of subcutaneous tissue in the region, thus avoiding

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the material be visible [12]. The shape of the patient's face is one factor that must be taken into account when planning the restructuring of the middle third of the face. In oval or round faces, adding volume to the malar region should be more restricted, avoiding the zygomatic projections so that there is no further enlargement of the middle third. Volumizations in the zygomatic projections are preferable in a patient with square faces to highlight this region from the rest of the face. The correct planning of the restructuring of the middle third of the face is essential in minimizing the amount of fillers and procedures that will be used. In addition, this makes it possible to employ appropriate filler techniques and materials to correct volume losses and lines characteristic of facial aging in a way that is natural. With this in mind, this article aims to report a clinical case of restructuring the middle face.

## Case Presentation

A 59-year-old female with leucoderma came to our clinic with the objective of complete facial improvement and her primary concern was a very deep nasolabial fold and absence of cheekbones (Figure 1). In light of the patient's concern, and upon following the photographic protocol, clinical examination and facial analysis, a global face restructuring plan was proposed, starting with the middle third of the face, and including the malar eminence region, zygomatic arch, pre maxilla and pyriform space. Initially, it was removed her makeup by applying a makeup remover and washing her face. We then applied 2% chlorhexidine to her face and used 0-12% chlorhexidine for intraoral asepsis (Figure 2). Local anesthesia was performed by blocking the infra-orbital nerve (extra-oral) and complementary stitches were made at points of other devices corresponding to the application of hyaluronic acid, using 2% mepivacaine with 1: 200 000 adrenaline vasoconstrictor (Figure 3). Following the proposed protocol, we began restructuring of the middle third of the face in the malar region. To locate the malar eminence (Figure 4), the authors used the Hinderer's [13] technique, which located the intersection between the tragus lines/wing of the nose and corner of the eye/buccal commissure as the point of the malar eminence on the patient's face. The marking of the points followed in the zygomatic arch [14]. The three points defined in each zygomatic arch (Figure 4) were marked equidistantly [15] along an upper line, slightly angled in relation to the tragus/nose line previously traced. Following the malar eminence



Figure 1: Initial photographs and primary patient concern.

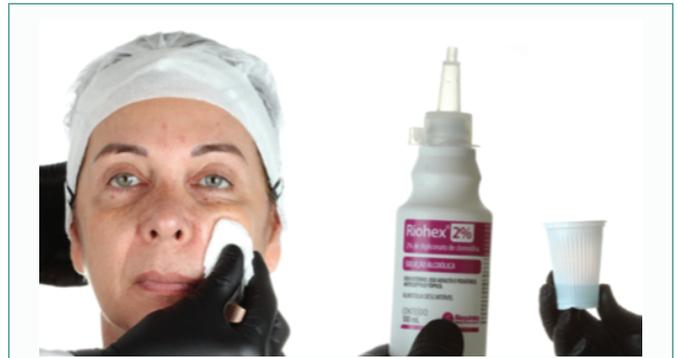


Figure 2: Materials and sequence of facial and intraoral asepsia.

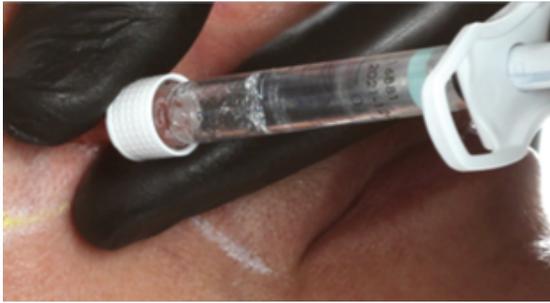


Figure 3: Location of application of anesthesia.



Figure 4: Planning of the restructuring points in the malar eminence, zygomatic arch, deep pyriform space and premaxilla.

inferiorly, two more points corresponding to the deep piriform fossa (Ristow space) [16] and the premaxilla were marked respectively (Figure 4). After marking the points for restructuring in the middle third of the face, applications were begun. The product selected for restructuring was Restylane Lyft (GALDERMA), to be injected into the juxtaperiosteous bolus plane, using the 27G needles that come with the filler. The quantities of product placed in each point are shown in Table 1. Prior to all applications performed with the needle, aspiration was performed with a return of at least 0.5 from the syringe plunger (Figure 5), always using a brand new and dry needle. During the injection of the product, the angulation of the syringe remained perpendicular to the tissue (Figure 6), except in the zygomatic arch region where the syringe was slightly tilted towards the posterior region due to the decrease in the thickness of the end of the zygomatic arch (Figure 7). The points marked for planning and guidance were cleaned as the procedure was performed (Figure 6 and 7). Following the procedure for restructuring the middle third of the face, we

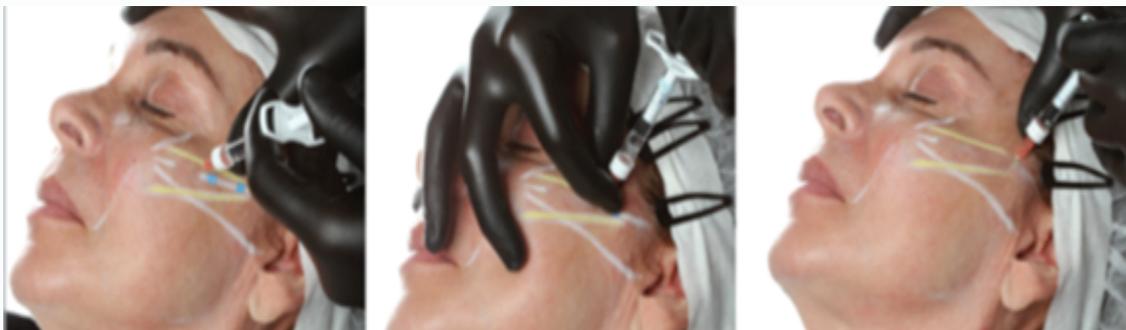


**Figure 5:** Detailed photograph of the moment of application of the filler to demonstrate the negative aspiration prior to injecting the material.

up the facial structure. Thus, in order to achieve satisfactory results in the restructuring of the middle third of the face, it is necessary to intervene first with fillers in the deeper layers to restructure the bone support lost in the aging process and, depending on the case, refine the contour by adding volume to the more superficial layers to attenuate the most superficial marks with wrinkles and folds [17]. The use of hyaluronic acid gels with different rheological and physical properties allows us to work towards these two objectives. This justifies the use in this reported case of different formulations of Restylane. Restylane Lyft (GALDERMA) was initially used. This gel has Nasha technology, developed with the objective of promoting tissue projection with precision, due to the high degree of cross-linking that gives them a high G (high modulus of elasticity) and its focal integration into the



**Figure 6:** Injection of the filler using a needle in a perpendicular position in the pré maxillary region (6A), pyriform space (6B), and malar eminence (6C).



**Figure 7:** Injection of the filler using a needle with a slight posterior inclination to in the points in the zygomatic arch.

observed the need to further refine the zygomatic arch for uniformity and finishing in this region. For this, we opted to apply 0.5ml of Restylane Volyme to each hemifacial, in the deep subcutaneous tissue using a cannula (xxG), with posterior entry parallel to the tissue (Figure 8). Finalizing the procedure in the middle third of the face, the nasolabial fold was smoothed using 0.5 ml. Restylane Defyne per side, applied to the subcutaneous tissue with a 22G cannula, and using several retro injections (Figure 9). Completing the planned procedure for restructuring the face, 0.5 ml of Restylane Skinbooster was also applied to each subcutaneous hemiface in order to stimulate collagen production and promote hydration of the dermis (Figure 10). In Figure 11, it's possible to observe the patient's immediate post-procedure results.

## Discussion

A fundamental principle in optimizing the results of facial rejuvenation treatments is to intervene in the different layers that make



**Figure 8:** Refinement in the zygomatic arch, Restylane Volyme.



Figure 9: Application in the zygomatic arch with a cannula.



Figure 10: Application of Restylane Skinbooster for hydration of the skin.



Figure 11: Before (left) and immediately after the procedure (right) for restructuring of the middle of the face.

**Table 1:** Quantity of Restylane Lyft applied in each point for restructuring of the middle third of the face.

Area	Quantity/point	Application plane
Malar eminence	0.5 ml	Juxta-periosteum with needle
Zygomatic arch	0.5 ml (1st point)	Juxta-periosteum with needle
	0.2 ml (2nd point)	
	0.1 ml (3rd point)	
Pre maxilla	0.3 ml	Juxta-periosteum with needle
Deep pyriform space	0.1 ml	Juxta-periosteum with needle

tissue. These Nasha forma-gels are ideal for mimicking bone tissue and deep fat pads, being indicated for less mobile and deeper areas [18]. Thus, the use of Restylane Lyft allowed for the restructuring of the deeper tissue loss suffered by the patient in the middle region of the face. In light of the needs of the case, Restylane Volyme was also used

to refine the zygomatic arch adding volume in the subcutaneous layer, and Restylane Defyne to smooth the nasolabial fold. Both gels have OBT technology. Fillers in this product line have a greater potential for volumizing, as they have high flexibility, with soft and diffuse tissue integration. They are thus recommended for mobile areas and to mimic superficial and deep fat pads. The differences in the volumizing capacities of the OTB line gels are related to the difference in the size of the particles and in the degree of crosslinking of each formulation [19]. Restylane Volymee is the gel that offers the greatest volumizing amongst OBTs, due to the larger size of its particles, and is ideal to complement the restructuring of the zygomatic arch. Restylane Defyn has better particles than the latter, but with a greater crosslinking. This makes it more suitable for use in the nasolabial fold, as it will have a greater capacity to project the tissue generating less volume in the region [19]. As recommended in the literature, Hinderer's technique [13] was used to locate the malar eminence because it is the simplest and most replicable method for its location, which is an important region in the restructuring of the region. The definition of the space by Ristow [13] was essential for restructuring the deep pyriform space and in the pre maxilla. Pre-injection aspiration can increase safety when applying the gel at the point marked for filling [20]. With this in mind, aspiration with a return of at least 0.5 from the syringe plunger was performed prior to all applications in the case reported.

## Conclusion

The restructuring of the middle third of the face in the case presented satisfactorily improved the aspects initially pointed out by the patient as her main concerns as improvement of the nasolabial fold and repositioning of the malar region.

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