



## Clinical Application of a New Hyaluronic Acid Filler Technology in Facial Aesthetics: A Case Series

### Running title: Full face treatment with new HA technology

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#### Abstract

**Background:** Hyaluronic acid (HA) fillers are widely used in facial aesthetics due to their safety, biocompatibility, and reversibility. Advances in filler technology have introduced novel filler with modified particle structures, designed to improve tissue integration, potentially enhancing clinical outcomes. However, evidence from clinical practice remains limited. **Methods:** This case series reports the first clinical experience with a new cross-linked HA filler (Up, Ilikia, Brazil) applied through a full-face approach. Four patients (two women, aged 24 and 44 years, and two men, aged 30 and 41 years) underwent individualized treatment plans. Structural support was provided by supraperiosteal bolus injections with 27-gauge needles, while contour refinements were performed using a fan technique with 22-gauge microcannulas. Outcomes were evaluated clinically, focusing on aesthetic improvement and patient satisfaction, and volumetric changes were measured using a 3D stereophotogrammetry device. **Results:** All patients demonstrated improvements in contour, volume restoration, and overall facial harmony, with enhanced mandibular definition, zygomatic projection, and correction of infraorbital hollowness. Treatments achieved natural outcomes, with high levels of patient satisfaction and no reported adverse effects during follow-up. **Conclusions:** This case series suggests that the new HA filler is safe, versatile, and effective across different facial regions when applied with multilayered approach. Larger, prospective studies with standardized outcome measures are needed to confirm these preliminary findings and determine long-term benefits.

**Keywords:** Dermal Fillers; Hyaluronic Acid; Esthetic; Face

## Introduction:

Facial aesthetics is a rapidly evolving field, supported by detailed anatomical knowledge, minimally invasive techniques, and a careful selection of biomaterials, particularly hyaluronic acid (HA). HA is a glycosaminoglycan naturally present in the extracellular matrix, capable of retaining up to 1000 times its weight in water, thereby ensuring hydration, elasticity, and volume (Kablik et al. 2009). Among soft tissue fillers, HA has become the gold standard for facial rejuvenation procedures and currently represents the second most frequently performed minimally invasive aesthetic treatment worldwide (International Society of Aesthetic Plastic Surgery 2024). Its widespread use is attributed to favorable characteristics such as biocompatibility, tissue integration, and reversibility through hyaluronidase (Germani et al. 2025).

Over the years, HA fillers have undergone significant technological development, evolving from simple monophasic formulations to more advanced systems, designed to improve durability, moldability, and tissue integration (Hong et al. 2024). Recently, novel fillers have been introduced with innovative particle structures that differ from conventional formulations. Preclinical evidence has demonstrated that these new fillers can stimulate extracellular matrix production and angiogenesis, while maintaining safety and biocompatibility. These advances suggest potential clinical benefits, including smoother aesthetic outcomes, improved longevity, and better adaptability to dynamic facial regions (Hahn et al. 2021).

However, despite these promising findings, such technologies have not yet been systematically evaluated in human patients. To address this gap, the present case series reports the first clinical experience with a novel cross-linked HA filler (Up, Ilikia, Brazil) applied through a full-face facial aesthetics approach.

## Methods

### Case series

Four patients (two female, aged 24 and 44 years, and two male, aged 30 and 41 years) presented to our private clinic seeking facial rejuvenation for different aesthetic concerns. Following individual clinical assessment, full-face treatment plans with HA fillers (Up, Ilikia, Brazil) were designed using a multilayered approach. Deep structural restoration was performed through supraperiosteal bolus injections with 27-gauge needles placed at specific anatomical points until bone contact. Subcutaneous refinements for contour and definition were carried out using retroinjection in a fan technique with 22-gauge microcannulas, ensuring smooth transitions and natural outcomes.

## Results

The treatment protocols, including product type, injection sites, and total volumes used for each patient, are summarized in Table 1. Volumetric changes measured using a 3D stereophotogrammetry device (3D Life Viz™ Mini-Quantificare, Sophia Antipolis, France) are presented in Table 2.

**Table 1:** Description of UP treatment protocol for case 1, 2, 3 and 4.

<i>Case</i>	<i>Area</i>	<i>Volume (mL)</i>	<i>Product</i>
Case 1 (F, 24y)	Mandible	2	UP Contour
	Chin	2	UP Contour
	Temple	1	UP Deep
	Maxilla	1	UP Deep
	Lips	1	UP Fine
Case 2 (F, 44y)	Chin crease	1	UP Contour
	Mandible	2	UP Contour
	Chin	1	UP Contour
	Lips	1	UP Deep
	Zygomatic arch	2	UP Contour + UP Deep
	Nasolabial Fold	1	UP Deep
Case 3 (M, 30y)	Mandible	4	UP Contour
	Right temple	2	UP Deep
Case 4 (M, 41y)	Tear trough	1	UP Deep
	Mandible	3	UP Contour
	Maxilla	1	UP Contour

UP –cross-linked hyaluronic acid filler (Deep, Contour, Fine).

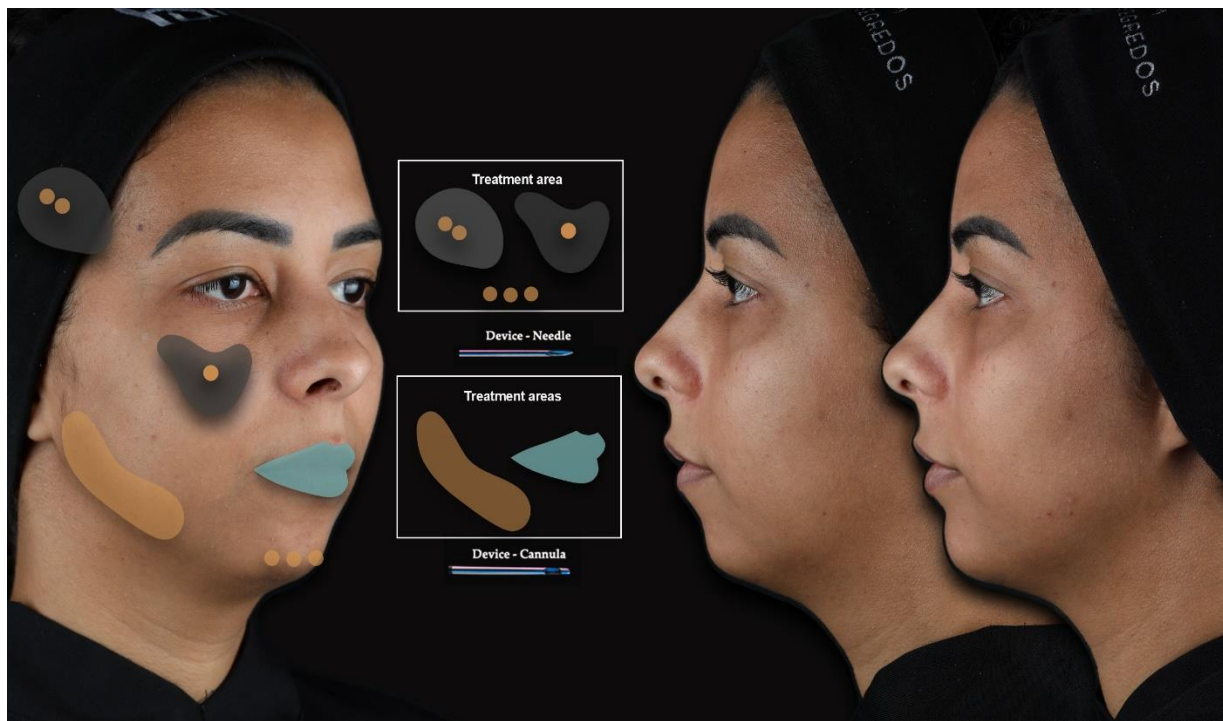
**Table 2:** Volumetric changes (ml) measured using a 3D stereophotogrammetry device for case 1, 2, 3 and 4.

<i>Area</i>	<i>Case 1</i>		<i>Case 2</i>		<i>Case 3</i>		<i>Case 4</i>	
	<b>Left</b>	<b>Right</b>	<b>Left</b>	<b>Right</b>	<b>Left</b>	<b>Right</b>	<b>Left</b>	<b>Right</b>
Temple	x	x	x	x	x	1.9	0.15	0.13
Nasolabial fold	x	x	0.2	0.26	x	x	x	x
Zygomatic arch	x	x	0.56	0.56	x	x	x	x
Premaxilla	0.65	0.54	x	x	x	x	0.34	0.23
Periorbital	x	x	x	x	x	x	x	x
Mandible	0.98	0.8	1.1	0.96	2,1	2,15	1.87	1.97
Mandibular groove	x	x	0.32	0.39	x	x	x	x
Chin	1.98	1.78	0,64	0.57	x	x	x	x
Lips	0.25	0.25	0.75	0.81	x	x	x	x

**Case 1**

A 24-year-old female patient presented with loss of lower facial definition and volume in key support areas. After treatment, she showed marked improvement in chin and mandibular projection, with natural restoration of temporal and maxillary volume and

subtle lip enhancement. The overall effect was harmonious and balanced, and the patient reported high satisfaction with the outcome. No adverse events were observed during follow-up. (Figure 1).

**Figure 1:** Approach protocol from case 1, and stereophotogrammetry and photographic results.**Case 2**

A 44-year-old female patient presented with age-related loss of mid- and lower-face support, including flattening of the zygomatic arch, mandibular contour deficiency, and deepening of the nasolabial folds. The treatment resulted in enhanced projection of

the zygomatic arch, better mandibular definition, and softening of the nasolabial folds, producing a rejuvenated and more feminine appearance. The patient expressed satisfaction with the results, and no adverse events were reported. (Figure 2).

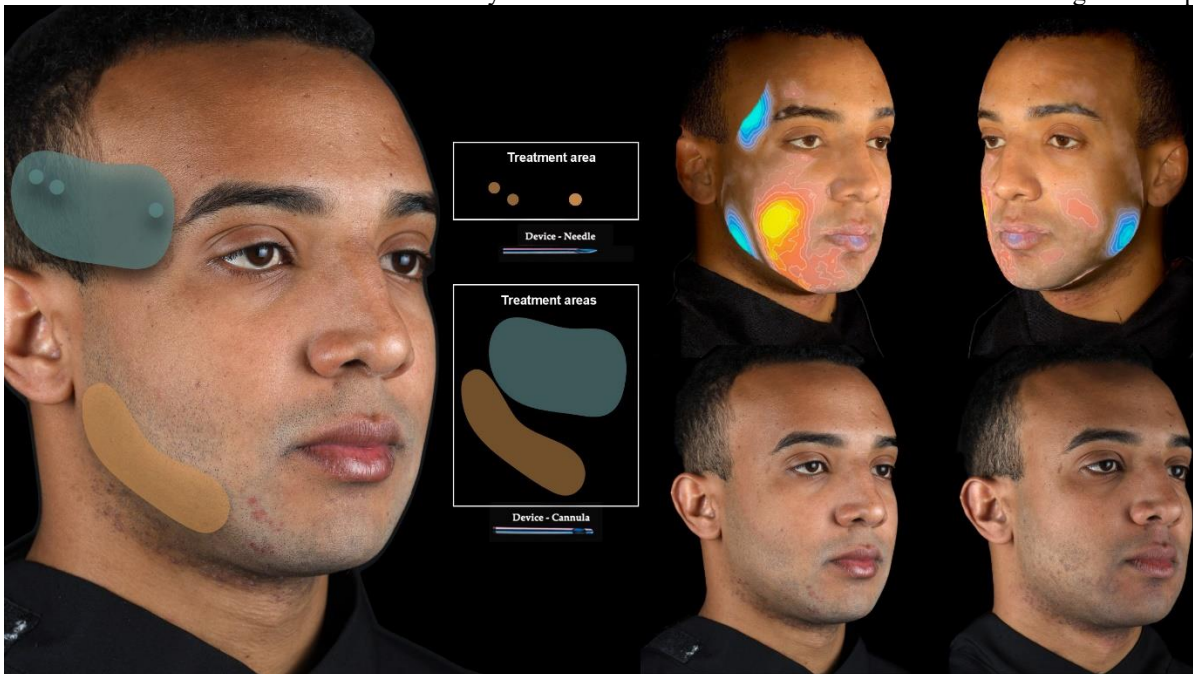


**Figure 2:** Approach protocol from case 2, and stereophotogrammetry and photographic results.

### Case 3

A 30-year-old male patient sought treatment to improve mandibular contour and correct unilateral temporal hollowing. The procedure achieved a well-defined mandibular line and symmetric

temporal volume restoration, providing a more balanced and youthful facial appearance. The patient reported high satisfaction, and no adverse effects were observed during follow-up. (Figure 3).



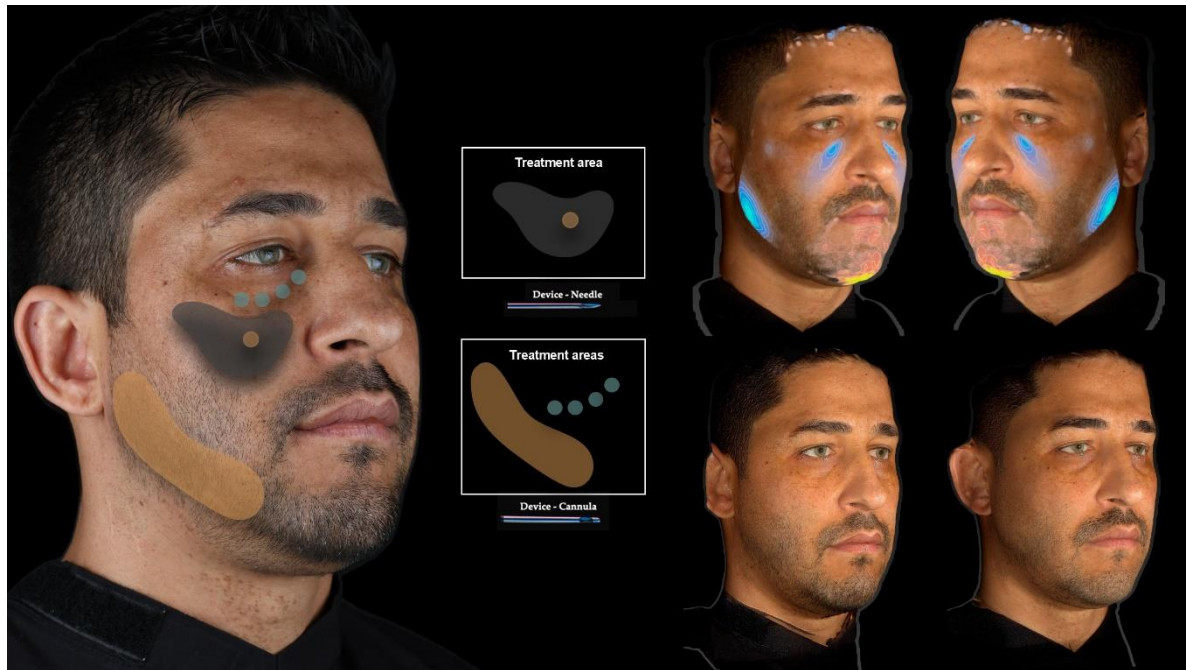
**Figure 3:** Approach protocol from case 3, and stereophotogrammetry and photographic results.

### Case 4

A 41-year-old male patient presented with concerns of prominent tear troughs and reduced mandibular definition. Following treatment, there was a visible improvement in the infraorbital region, with attenuation of the tear troughs, along with a more

defined mandibular contour and improved maxillary support. The results contributed to a refreshed and rejuvenated look, with high patient satisfaction. No complications or adverse events were noted during follow-up. (Figure 4).





**Figure 4:** Approach protocol from case 4, and stereophotogrammetry and photographic results.

## Discussion

The strategic use of HA fillers with different mechanical properties is a cornerstone in contemporary facial aesthetics (Almeida Romanó Peixoto et al. 2023). Each anatomical region presents unique structural and functional demands, requiring products with specific projection capacity, elasticity, and tissue integration. Fillers with higher elasticity ( $G'$ ) are generally preferred for structural support in areas such as the chin, jawline, and zygomatic arch, while intermediate  $G'$  gels are more suitable for volume restoration in the temples and midface (Eduardo Avelar et al. 2024; Almeida et al. 2025). Lower  $G'$  fillers are typically used in delicate and highly mobile regions, such as the lips, where smooth integration and flexibility are essential to preserve natural movement (Germani et al. 2024).

Over the years, HA fillers have evolved from particle-based formulations to more flexible gels with optimized crosslinking processes, each with distinct clinical behaviors and safety profiles (Ohrlund et al. 2024; Ducher et al. 2016; Hong et al. 2024).

The present case series features an innovative particle structure HA, which preclinical evidence suggests may stimulate extracellular matrix production and angiogenesis while maintaining biocompatibility (Hahn et al. 2021). Hereby, these fillers demonstrated versatility across anatomical regions when applied through a multilayered approach, producing satisfactory and natural outcomes without reported adverse events. These findings align with published evidence showing that combining products with complementary properties and tailoring them to different facial layers optimizes rejuvenation results and patient satisfaction (Germani et al. 2022; Eduardo Avelar et al. 2024).

However, some limitations must be acknowledged. This report describes only four patients and did not include objective outcome measures such as validated scales or imaging analyses. Rheological

parameters were not directly tested but referenced from available data, and the follow-up period was relatively short, limiting conclusions regarding long-term outcomes. Despite these limitations, this work represents the first clinical experience with this new filler technology and contributes to the initial evidence regarding its applicability in facial aesthetics. Larger prospective studies with standardized endpoints will be essential to validate these preliminary observations.

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