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To cite this article: Pablo Naranjo Garcia, Yuri Vinshtok, Rodolfo Lopez Andrino & Naama Cohen (2019): Efficient treatment of upper-lip rhytidosis by pneumatic administration of hyaluronic acid, Journal of Cosmetic and Laser Therapy, DOI: [10.1080/14764172.2019.1660792](https://doi.org/10.1080/14764172.2019.1660792)

To link to this article: <https://doi.org/10.1080/14764172.2019.1660792>



Published online: 05 Sep 2019.



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# Efficient treatment of upper-lip rhytidosis by pneumatic administration of hyaluronic acid

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## ABSTRACT

Three female patients with extensive upper lip rhytidosis were successfully treated with kinetic energy-based injections of hyaluronic acid.

## ARTICLE HISTORY

Received 21 February 2019  
Accepted 23 July 2019

## KEYWORDS

Jet volumizing rejuvenation;  
JVR; upper lip rhytidosis;  
EnerJet; PerfAction

## Introduction

Upper-lip rhytidosis is an age-related process of dermal thinning and changes in skin anatomy. The loss of scaffolding and collagen-producing functions, along with the loss of volume in the upper jawbones, leads to perioral skin becoming thinner and flatter. The dermal thinning leads to the gradual appearance of rhytidosis that presents a management challenge.

Current therapy options are limited to dermal fillers or use of energy-based devices. Injections of hyaluronic acid (HA) dermal fillers or botulinum toxin smooth them out or relax the muscles surrounding the lips. Despite the advantages in downtime, the efficacy span is short. On the other hand, the laser provides skin resurfacing and the stimulation of new collagen, but the efficacy is moderate and associated with thermal damage to the epidermis and dermis, which prolongs downtime.

As an alternative, the Jet Volume Rejuvenation (JVR) approach bypasses the epidermis and stimulates dermal regeneration without causing inflammation, as opposed to the energy-based devices (EBD) that cause inflammation following thermal damage to the tissue.

JVR's innovative approach to skin rejuvenation offers minimally invasive treatment with maximum results. This jet-injection technology introduces and laterally disperses a therapeutic substance into the dermis via a pneumatic needle-less action that initiates the wound healing process and augments neocollagenesis. This is achieved by injecting an accelerated solution of hyaluronic acid that is uniformly distributed intradermally in 1 cm<sup>2</sup> areas with each injection.

## Materials and methods

Three females (age 61–63) with moderately deep upper-lip wrinkles were treated with cross-linked hyaluronic acid (Mesohyal Global, Mesoesthetic, Wilmslow, UK) injected by the jet-injection device (EnerJet2.0, PerfAction

Technologies, Rehovot, Israel) at minimal pressure (15–20%) and 100 µL of HA solution per injection. HA was injected along the upper lip border. (Figure 1). The treatments were repeated once a month for 3 months.

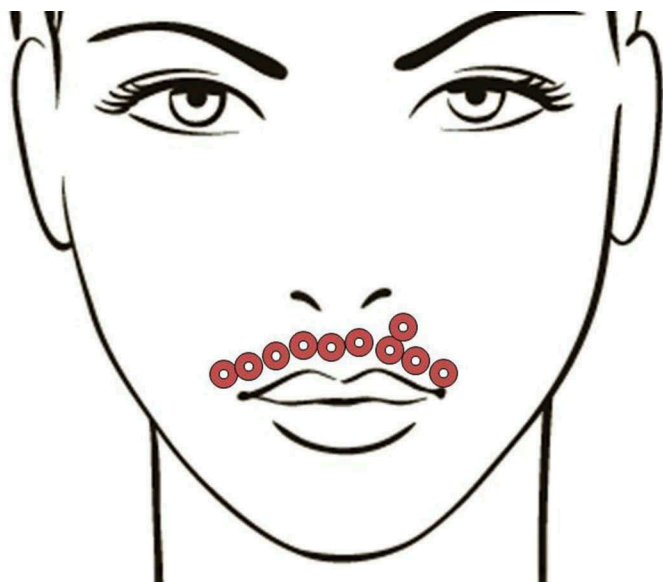
The patients did not have pre-existing vascular disorders, did not chronically use anticoagulant therapy, and had not received any aesthetic treatments in the targeted area prior to JVR. Baseline conditions of the skin and wrinkles was quantified by 3-D imaging (Antera 3D<sup>®</sup>, Miravex, Dublin, Ireland). Dermal thickness in the upper lip area was measured with dermal sonography (Esaote, Genoa, Italy). Skin elasticity in the treatment area was determined by Cutometer (Courage-Khazaka Electronic, Cologne, Germany). The patients assessed their injection pain per the 0–10 Numeric Pain Rating Scale (NPRS). Additional re-assessment was conducted 6 months after the last treatment.

## Results

All patients tolerated the treatment well, without any injection pain (rated 0 on NPRS). Post-treatment evaluation showed a decrease in the wrinkle severity score (LRS) from 3.7 to 2.3, which indicated a reduction in full wrinkle class after JVR therapy. The patients expressed better perception and improvement of the treated areas (average GAIS of 1.7).

Objective analysis of the wrinkle appearance captured by 3-D imaging confirmed wrinkle reduction in all patients (Figure 2). The physical parameters (depth, area, and volume) of the grooves and depressions decreased, indicating that the skin appeared more even after JVR therapy (Table 1). An average skin roughness index lessened in the upper lip by 13.4%.

An additional assessment of the skin's response to the treatment was performed by skin sonography. We used a high-frequency transducer that allowed a high resolution in



**Figure 1.** Injection scheme: HA injected linearly, 0.3–0.5 cm above the upper lip vermilion. Additional injections can be performed along the large vertical wrinkles, as needed.

assessing the skin structures and measuring the skin thickness. The dermis height measured at the follow-up revealed a mean increase by 0.4mm, or 20% (Table 1). Mean skin elasticity

**Table 1.** Post-treatment changes in wrinkles and dermal elasticity and thickness.

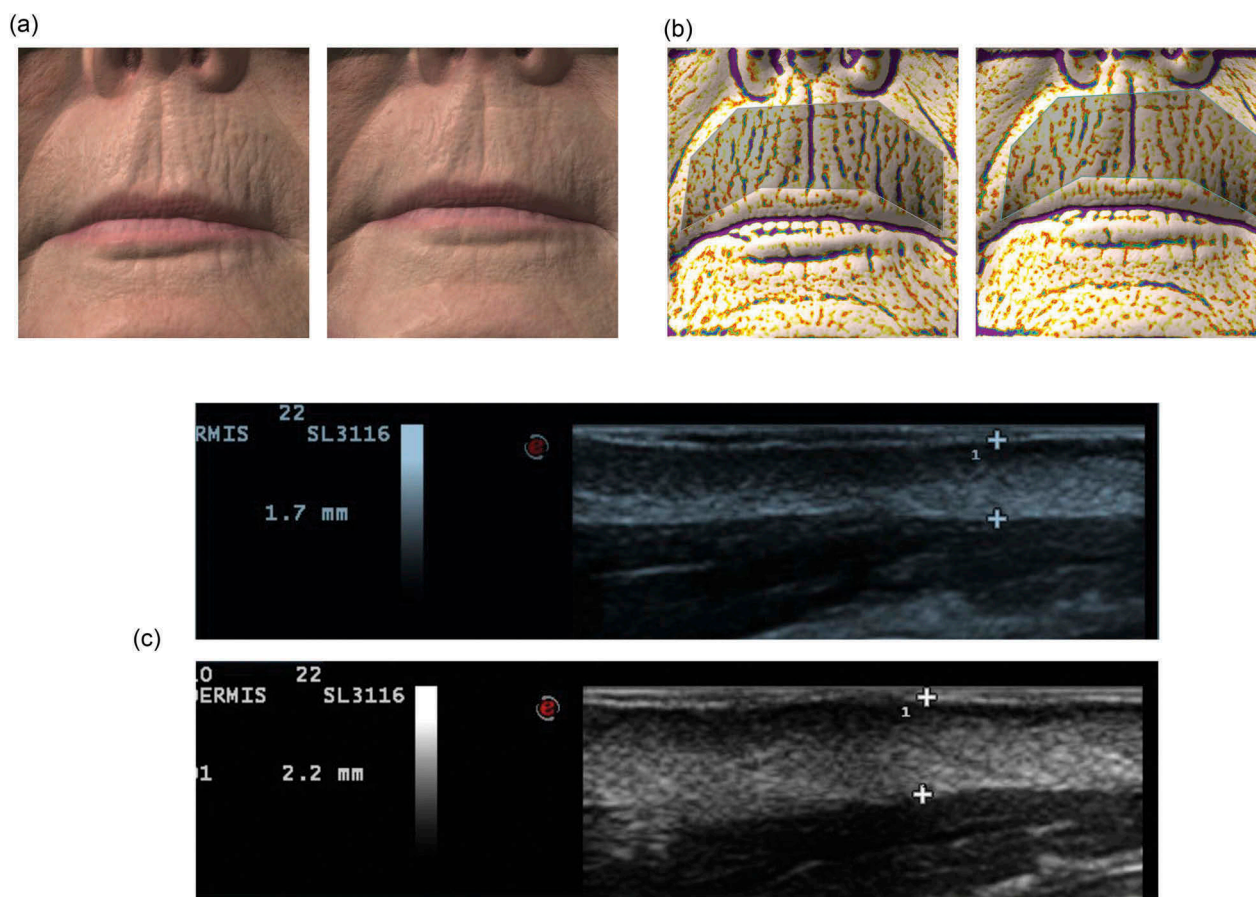
	Post-treatment changes
Average elasticity increase	20.6%
Average increase in dermal thickness	20%
Average reduction in Depression Average Index	11.4%
Average reduction of Depressions Average Max Depth	22.6%
Average reduction in wrinkle volume	17.4%
Average reduction in wrinkle area	11.0%
Mean increase in skin elasticity	20.6%

increased post-treatment from 60.0 to 75.6 non-specific units (nsu) (Table 1).

### Discussion

For skin tissue augmentation, JVR provided a dual therapeutic effect: the administration of hyaluronic acid, which led to immediate skin hydration, and the induction of intradermal micro-trauma, which initiated the healing process.

Our results, validated by sonography 6 months after the treatments were in correlation with previous studies. Kobus (1) observed significant changes in the sonography-measured upper-lip dermis, for which the average height increased by 1.3 mm after JVR injections of HA. Levenberg (2)



**Figure 2.** (a) Photo images, (b) 3-D reconstruction, and (c) sonogram of the upper lip wrinkles in a 61-year-old female before and 6 months after the treatment. The maximum groove depth decreased from 0.187 mm to 0.159 mm; the average groove volume decreased from 100 mm<sup>3</sup> to 82.6 mm<sup>3</sup> and the average dermis height increased from 1.7 mm to 2.2 mm.

demonstrated dermal thickening in various areas (face, neck, décolleté, and dorsal hand), after jet-injected cross-linked HA. The mean Fitzpatrick-Goldman wrinkle score for the face and neck was reduced by 39.4% and 30.4% respectively, representing a full wrinkle class improvement.

Whereas current EBD therapy is associated with thermal damage to upper skin layers, JVR bypasses the epidermis and directly disperses therapeutic material within the dermis, without macro-damaging the dermal vessels and nerves. No adverse effects were observed during the treatment and follow-up period.

Although we followed the patients for a relatively short period, we expect the positive effect to continuously evolve. The maintenance effect objectively verified beyond the expected hyaluronan degradation time is most likely generated by the induced neocollagenesis. Previous histology studies demonstrated the stimulation of the collagen synthesis at 4 months after JVR treatment (2).

## Conclusion

Jet Volume Rejuvenation showed promising results in the correction of upper-lip rhytidosis. The treatment was safe and reported to be pain-free. The therapeutic synergistic effect resulted from the dermal micro-trauma generated by the dispersion of HA nanoparticles.

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## References

1. Kobus KF, Dydymski T. Quantitative dermal measurements following treatment with AirGent. *Aesthet Surg J*. 2010 Sep; 30(5): 725–29. doi:10.1177/1090820X10383250.
2. Levenberg A, Halachmi S, Arad-Cohen A, Ad-El D, Cassuto D, Lapidot M. Clinical results of skin remodeling using a novel pneumatic technology. *Int J Dermatol*. 2010 Dec; 49(12): 1432–39. doi:10.1111/j.1365-4632.2010.04627.x.