

Case Report: Effective Treatment of Striae Distensae using Pneumatic Injection of Hyaluronic Acid

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Introduction

Striae distensae, also known as stretch marks, are a form of scarring on the skin, with either a red color or a silvery white hue. They are caused by tearing of the dermis, and over time can diminish but not disappear completely¹. Stretch marks are the result of the rapid stretching of the skin associated with rapid growth (common in puberty) weight gain (e.g. pregnancy), or breast augmentation^{1,2}. Anatomical sites affected include thighs, breasts, abdomen and buttocks. Stretch marks, in particular of red color, are aesthetically unattractive and challenging to treat. Current treatment methods include such as topical agents, chemical/mechanical debridement techniques, non-ablative laser techniques and ablative laser treatment. However, a consistently effective treatment method with minimal adverse effects does not exist¹.

Materials & Methods

JVR technology (EnerJet, PerfAction LTD., Rehovot, Israel) was used to deliver cross-linked Hyaluronic Acid (SMS solution, Biosense, Germany) to 22 year old female patient, (Fitzpatrick skin type III), with striae on the dorsum.

Treatment protocol:

Prior to the treatment, high-resolution photography for the treatment area was documented. A treatment session included applying 35 shots to the dorsum at a setting of 40% pressure and filling level 4.

After the treatment, treated areas were visually examined for skin responses. The patient underwent 1 treatment session. Follow-up evaluations were conducted 3 months, 8 months, and 3 years after the treatment and included high-resolution photography.

Results: Clinical Observations

The treatment was well accepted by the patient who reported mild pain during treatments even without applying an anesthetic prior to the treatment and a high degree of satisfaction (strong improvement). There were no adverse side effects recorded during, after, or in the follow-up.

Positive effects were seen starting 3 months after the first treatment. In addition, the treatment diminished the appearance of the striae and improved its texture and color. The results of treatment are shown in figures 1-4. The outcome was judged excellent by the patient, the investigator, as well as a blinded, board-certified plastic surgeon. Minimal side

effects include transient bumps and spot bleeding entry points. The treatment is associated with no downtime. Severe adverse events (such as infection, long-lasting erythema, hyperpigmentation)

were not observed. Three years after the treatment (Figure 4), there were marked improvements in the striae's appearance and texture.



Fig 1. Before treatment



Fig 2. 3 months after 1 treatment



Fig 3. 8 months after 1 treatment



Fig 4. 3 years after 1 treatment

Discussion

Current treatment methods include such as topical agents, chemical/mechanical debridement techniques, non-ablative laser techniques, ablative laser treatment and fractional microneedle frequency, fractional carbon dioxide laser have limited efficacy¹.

EnerJet's needleless mechanism of action is based on high-velocity pneumatic acceleration of high-mass hyaluronic acid particles which penetrates the epidermis through a tiny entry point. Once the accelerated jet reaches the dermal layer, it spreads laterally, causing a controlled micro-injury to the dermal layer, initiating the wound-healing process, and stimulating neocollagenesis, a favorable secondary effect³. JVR technology has shown promising results, and may address some of the limitation of other treatment modalities, and may be used in combination for an effective treatment.

This technology is associated with short downtimes and is applicable to many scar subtypes other than Striae distensae, and as well as to all skin types^{3,4}. With JVR technology, the specific scar area is treated, in contrast to other modalities such as laser skin resurfacing where a significantly larger area outside the scar is subject to the treatment³.

Conclusion

JVR treatment using the EnerJet system is a safe and effective modality for treating striae distensae, resulting in a diminished its appearance, even after a single session. The treatment is associated with minimal downtime, pain, or side effects. Additional controlled trials including multiple patients, longer follow-up, and different parameters will be necessary to determine the optimal settings for achieving the best clinical effects.

References

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