



Commentary: "Evaluating the Role of Small Particle Hyaluronic Acid Fillers Using Micro-droplet Technique in the Face, Neck and Hands: A Retrospective Chart Review"

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Abstract

Hyaluronic acid (HA) substrates in facial rejuvenation have been a long-standing staple in the aesthetic injector's offerings. The development of different technologies, variability in the concentration of HA within the gels and different types of cross-linking methodologies have led to the development of many skews across multiple companies. When addressing micro-droplet techniques whereby small aliquots of HA are deposited in the dermis, few have developed a safety and efficacy profile that supports claims of improved skin quality. The concept of adding HA into the dermis is inherently a correct one, as this glycosaminoglycan is able to bind and retain water in a significant fashion. Successful management of skin quality requires specific quantities of HA to be precisely placed at the appropriate depth using a reproducible volume. These aforementioned factors all contribute to successful skin quality improvements. We present a clinical summary of pearls and pitfalls in managing skin quality with micro-droplet HA that we have identified over the last 4 years.

It has been approximately three years since the author's original article was published. Currently, the lead author wishes to share his pearls and pitfalls, learned from over four years of clinical experience using Restylane[®] Skinboosters[™] Vital 20mg/ml and Vital Light 12mg/ml (Galderma, Uppsala, Sweden), herein referred to as SP-HA^V and SP-HA^{VL}, respectively.

Patient Selection

SP-HA^V and SP-HA^{VL} are an integral part of the aesthetic physician's repertoire, as they can be used in almost all patients, both young and older alike. SP-HA is used in our clinic across generations of patients, beginning with millennials. The target group for SP-HA^V and SP-HA^{VL} are patients who could benefit from measurable improvements in skin health, especially those whose main concern is the appearance of dry or dehydrated skin. Therefore, the large majority of patients could benefit from such a treatment, as mostly everyone requires some sort of aid in maintaining skin quality. This is true regardless of lifestyle or skin care regimens. It is important to note that cosmetic creams claiming to be rich in HA generally have particles that are too large to penetrate skin pores and therefore lack significant efficacy. Only by depositing HA directly into the skin, as is the case with SP-HA^V or SP-HA^{VL}, can products exert their beneficial effects on skin quality in a reproducible fashion. Moreover, unlike other HA products, SP-HA^V and SP-HA^{VL} can be used in either thick or thin-skinned patients respectively, across all skin types I through VI of the Fitzpatrick's

Classification¹; as long as the micro-aliquots are deposited into the deep dermis/subcutis junction thus avoiding visible and/or palpable surface irregularities. Although all patients will benefit from injections of HA micro-aliquots, those in more extreme weather conditions will benefit disproportionately more. Patients living in climates where the winters are long and environmental humidity is low, as well as patients in continuously warm and sunny climates require more frequent treatments to benefit their overall skin quality.

Choice of Product

An important concept for the novice injector as well as patients alike, to understand is that SP-HA^V and SP-HA^{VL} are not used as volumizers. SP-HA^V and SP-HA^{VL} are treatments to improve and maintain skin quality. This is their strength and is exactly why a clinician would select to use these products. While there may be indirect visible improvement of fine lines, this is secondary to the clinical improvement in skin health parameters. Patients wishing to improve such parameters including hydration, trans-epidermal water loss, elasticity, collagen and smoothness should consider the use of SP-HA^V and SP-HA^{VL}.²⁻⁶ Furthermore, using a non-animal stabilized hyaluronic acid (NASHA) based HA for micro-aliquot placement allows for targeted integration⁷ that is the product maintains its structural integrity over integrating or diffusing into the surrounding tissues.

Anatomical Guidelines

Although SP-HA^V and SP-HA^{VL} can be used anywhere on the face, the on-label indications in Canada SP-HA^V is intended for the lower face (lower cheek, jawline) and dorsal hands, while SP-HA^{VL} is intended for the lower cheek/jawline of the face and upper neck. Only SP-HA^{VL} should be used in the neck, due to the degree of thinness of skin in this region. Furthermore, the whole neck should be treated as treatments focusing on visible horizontal folds or rhytids alone yield incomplete results. Again, when treating other regions of the face in an off-label fashion, injectors are urged to assess skin thickness vs choice of product. When in doubt, thin-skinned patients or regions should only be treated with SP-HA^{VL}.

Technique

As previously mentioned, SP-HA^V and SP-HA^{VL} must be injected into the deep dermis/subcutis and uniformly deposited. If the product is placed at the proper depth, the chances of an unfavorable results are significantly minimized. Due to the non-linear contours of the face, the use of a cannula may make uniform product deposition difficult. For this reason, the senior author prefers using a sharp needle over a straight cannula to improve and maintain treatment outcomes in the face and neck. Needles should be changed frequently, as they become blunt with multiple punctures. A minimum of one new needle per

side is recommended. Ice should be maintained on the contralateral side when not actively being treated. Dorsal hand injections require icing prior and immediately following treatment. Product can be placed at the same depth, but both techniques may be used (needle and cannula). What is important with hand treatments is a vigorous massage following injection as the product must be placed across the whole dorsum while avoiding veins, tendons, and the tendon sheaths surrounding the extensors. As with any injection, joint spaces should be avoided by remaining a minimum of one cm from the wrist and metacarpophalangeal joints.

When injecting, spacing of each aliquot of product can be between a few millimeters and up to 1 centimeter. However, we found that in patients with more visible skin damage, closer spacing is necessary. In areas of deeper lines, the distance can also be shortened. Although SP-HA^V and SP-HA^{VL} are not treatments for superficial rhytides, nor do we chase lines with the use of SB, the by-product of improving skin health parameters is a decrease in the depth and intensity of superficial rhytides. The SmartClick™ system (Figure 1) used with SP-HA^V and SP-HA^{VL} is novel and allows the injector to consistently place the same amount (0.01ml) of product in a reproducible fashion. Some injectors remove the SmartClick™ system when injecting SP-HA^V or SP-HA^{VL}. We recommend its continued use as it allows for complete control in quantity of HA placed. Typically, with aesthetic injections there are four treatment variables to consider, including the spacing and depth of product placement, frequency of treatments and volume per unit surface area. The SmartClick™ system removes the variable of inconsistent injection volume.

Following treatment, it is essential to ensure that the aliquots are not visible or palpable. This can be accomplished by running an index finger over the injection sites, using a thin gel or cream (e.g., arnica or ultrasound gel). If the masses are palpable, massage each area accordingly. Most clinical trials employ a treatment regimen

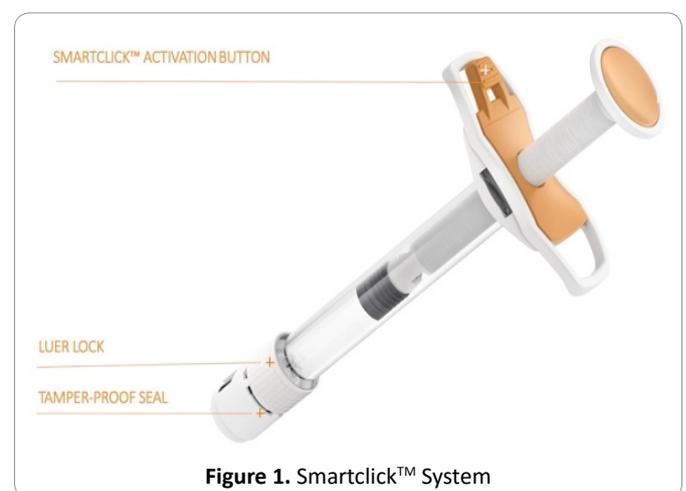


Figure 1. Smartclick™ System

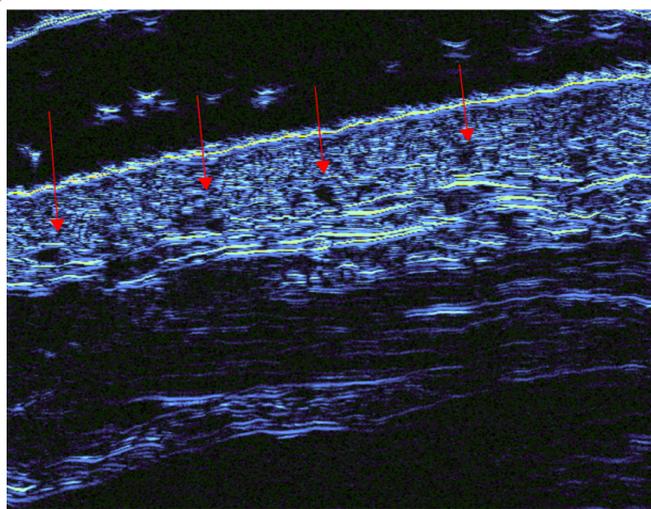


Figure 2. Three weeks following HA-SB injection. Note the continued presence of NASHA-SB with targeted integration. Red arrows demonstrate HA micro-aliquot placement in the deep dermis.

consisting of three sessions, every six weeks followed by a booster treatment every eight-to-twelve months. In clinical practice, we typically follow this treatment regimen, except in patients with significant skin quality issues, where the interval between treatments can be reduced to four weeks. We also prefer treating patients at four-week intervals during the winter months. This reduction in the interval time between treatments is supported by our own ultrasound investigations, which have demonstrated NASHA targeted tissue integration is maintained over time SP-HA^V and SP-HA^{VL} at 3-4 weeks following injections (data on file, Figure 2).

Novice injectors often inquire about the use of anesthetic with SP-HA^V and SP-HA^{VL} injections. While topical amide-type local anesthetics (e.g., Emla cream) can be used, we prefer icing the areas for five-to-ten minutes before the procedure. In addition to its anesthetic effects, it has the secondary benefit of constricting superficial vessels and reducing bruising and bleeding.

Managing Adverse Events

As with any injection, skin cleansing with an antiseptic topical is mandatory. During the treatment session, managing patient comfort with topical ice before, during and immediately after the treatment is paramount. Careful technique avoids superficial placement of HA. Furthermore, the system allows for a maximal injection volume of 0.01ml thereby controlling the volume of HA injected, while the depth of injection prevents placement of product in a named vessel. Consistently using the SmartClick™ system avoids variability in the quantity of product placed. Following treatment, during the initial follow-up visit, bruising should be re-evaluated as per the respective clinic's protocol. If needed, pulsed dye laser



Figure 3. Baseline and twelve weeks following the commencement of HA-SB injections.

can be used to help improve bruising. Given the large number of punctures required with SP-HA^V and SP-HA^{VL} in the face, neck and hands, it is important to avoid treating patients before any major event (e.g., wedding, vacation, photoshoot), as the likelihood of bruising is increased with the large amount of punctures and regions treated. In our experience, approximately 5-10% of treated patients will bruise with either SP-HA^V and SP-HA^{VL}. The number of regions bruised may vary, but with proper preconditioning of the tissues with ice, when present, there are few regions of pinpoint bruising. Lastly, managing patient expectations with SP-HA^V and SP-HA^{VL} is of utmost importance. Clinicians should have a thorough discussion with patients to ensure they understand that SP-HA^V and SP-HA^{VL} are not tissue volumizers but rather, treatments for improving skin quality and possible improvements in small rhytids (Figure 3). Concomitantly, SP-HA^V and SP-HA^{VL} can be used along with the patients' normal skin care regimen.

Conflict of Interest Statement

Dr. Andreas Nikolis is a consultant, speaker and research collaborator for Galderma.

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