

Discussion: Microbotox of the Lower Face and Neck: Evolution of a Personal Technique and Its Clinical Effects

Steven Liew, FRACS

Sydney, New South Wales, Australia

Dr. Wu¹ is to be congratulated for his innovative approach with the administration of multiple, minute doses of neuromodulators, distributed in a large area in the dermis or just beyond, which he called microbotox.

In the article, the author theorized that the mechanism of action of microbotox is by its action on the skin adnexa and the superficial muscle fibers as it is inserted into the dermis. This creates a lifting, tightening effect and a smoother skin appearance.

Numerous articles have shown the cutaneous effects of neuromodulators beyond the realm of dynamic wrinkles, including for the treatment of hyperhidrosis, rosacea, excessive sebum productions, and on scars.²⁻⁵ The target structures in these articles are all situated in the dermal- or subdermal level.

The use of neuromodulators in multiple, minute doses in the superficial intradermal plane seems to be an “Asia-centric” phenomenon. This presumably developed as a modification from the conventional technique from the desire of most Asians wanting a “less-treated” look. Like most, I too have modified my technique especially on the forehead by reducing the total dosage to approximately 6–8 units (onabotulinumtoxinA) and placed it intradermally in greater points. The effect seen, I believe, is due to uniform distribution of lower concentration of neuromodulators, affecting the neuromuscular junctions as it diffuses and spreads from the placement site distant from target muscle. This has eliminated the dense tightness, a common complaint of patients following conventional technique, and allows animation of the forehead. The associated skin quality improvement is also noted.

This has led to extension of the same technique in midface (Fig. 1) (4.0 units of onabotulinumtoxinA in 0.5 mL, with 10 injections per

side) and lower face (5 units of onabotulinumtoxinA in 0.5 mL, with 10 injections per side) as a means of improving skin quality. Despite the benefits seen, the popularity of the technique has been short lived, due to poor patient acceptance owing to the pain (we use ice and topical anesthesia) and the potential for widespread bruising and risk of occupational downtime. Further, I consider this to be a difficult and laborious technique to master with the additional risk of morbidity in the midface affecting the lip elevators despite meticulous attention to intradermal bleeding. Interestingly, this does not seem to be the experience Dr. Wu, despite requiring more than 200 injection points just for the lower face.

I have recently modified my approach by combining neuromodulator with dermal filler to create what I term a “skin booster” effect. This is achieved by combining 10 units of onabotulinumtoxinA with 1 mL of uncross-linked hyaluronic acid (12 mg). The outcome is an improved skin hydration with the added skin adnexal effect, achieved with fewer injection points (50–100 injection points for the whole face and neck; Fig. 2).

In the article, Dr. Wu¹ used up to 240 injections with a total dose of up to 56 units of onabotulinumtoxinA for the neck and lower face, producing what he termed the “platysma effect.” His aim is to improve the cervicomental angle, jawline definition and crepiness, horizontal neck creases, and smoothness of skin. This is relatively well demonstrated in the patient with moderate subcutaneous tissue, despite differences in the lighting in Figure 6.¹

The author theorized that the effect seen on neck is due to the preserved function of the deep platysma muscle. This would only be achieved if the motor end plates are evenly distributed on the superficial and deep layer of the muscle and, indeed, if such a division of muscle function existed within this thin muscle. Logically,

From the Shape Clinic.

Received for publication July 20, 2015; accepted July 28, 2015.

Copyright © 2015 by the American Society of Plastic Surgeons

DOI: 10.1097/PRS.0000000000001840

Disclosure: The author has no financial interest in any of the products, devices, or drugs mentioned in this article.



Fig. 1. Reduction of skin pore size at 6 weeks following intradermal injection of 4.0 units of onabotulinumtoxinA in 0.5 mL, with 10 injections per side of the midface from infraorbital margin to the nasolabial fold.

one would assume that the end plates are concentrated in the deep surface, consistent with the muscle innervation. A simpler explanation is that the entire muscle has been relaxed by neuromodulator, with the midface elevators providing the lift to the lower face. This may be proven by asking the subjects to actively contract the platysma muscle and to assess the degree of function.

The improvement of the neck contour could similarly be achieved by the conventional injection of the upper neck segment of platysma muscle and the platysma bands if present, with smaller number of intradermal blebs to achieve the skin effects, if desired (Fig. 2).

Interestingly, Dr. Wu felt that the horizontal neck creases improve with his microbotox technique, inferring that the etiology of the crease is at the superficial muscle attachment to



Fig. 2. Skin boosting effect and improvement of neck contour by multiple intradermal injections of the neck and lower face with a cocktail combination [total dose of 10 units of onabotulinumtoxinA, with 1 mL of uncrosslinked hyaluronic acid (12 mg)] together with conventional technique of treating the anterior and posterior segment of platysma muscle with 20 units of onabotulinumtoxinA per side of the neck.

the skin. My personal experience is that deep horizontal creases do not improve significantly, even by complete relaxation of platysma muscle induced with intradermal injections (Fig. 3¹). Furthermore, in cases where extensive skin undermine in the lower neck surgery, the horizontal deep neck creases tend not to improve a great deal.

I enjoyed reading the article by Dr. Wu,¹ which I found to be thought provoking. In my opinion, the ultimate success of aesthetic procedures featuring multiple intradermal injections lies in the development of a device, which facilitates the

reproducible delivery of multiple injections of neuromodulators at a controlled depth and dose.

Steven Liew, FRACS
Shape Clinic
Suite 109, 19a Boundary Street
Darlinghurst
Sydney, New South Wales 2010, Australia
steven@shapeclinic.com.au

PATIENT CONSENT

Patients provided written consent for the use of their images.

REFERENCES

1. Wu WTL. Microbotox of the lower face and neck: evolution of a personal technique and its clinical effects. *Plast Reconstr Surg.* 2015;136:92S–100S.
2. Li ZJ, Park SB, Sohn KC, et al. Regulation of lipid production by acetylcholine signalling in human sebaceous glands. *J Dermatol Sci.* 2013;72:116–122.
3. Dayan SH, Pritzker RN, Arkins JP. A new treatment regimen for rosacea: onabotulinumtoxinA. *J Drug Dermatol.* 2012;11:e76–e79.
4. Glogau RG. Botulinum A neurotoxin for axillary hyperhidrosis. No sweat Botox. *Dermatol Surg.* 1998;24:817–819.
5. Shaarawy E, Hegazy RA, Abdel Hay RM. Intralesional botulinum toxin type A equally effective and better tolerated than intralesional steroid in the treatment of keloids: a randomized controlled trial. *J Cosmet Dermatol.* 2015;14:161–166.