
Discussion

The Effect of Botulinum Toxin Injections on the Nasolabial Fold

Discussion by Rod J. Rohrich, M.D., Jeffrey E. Janis, M.D., and Steven Fagien, M.D.

Essentially, this article is one author's experience with chemodenervation of the levator labii superioris alaeque nasi to achieve effacement of the nasolabial fold. The author states that he originally injected the first 25 patients uniformly, without regard to the type of preinjection smile. Although he achieved a 64 percent satisfaction rate, he modified his technique by applying Rubin's smile classification system¹ to his patients. Specifically, of the three types of smiles (zygomaticus or "Mona Lisa," canine, and full denture), he started to concentrate on those patients with canine-type smiles, especially those with extreme gummy smiles and associated incisor show, to minimize the comorbidity of smile alteration, which was exaggerated in other types of patients/smile types. He found his satisfaction rate "rose dramatically." He goes on to explain that there is no cookie-cutter approach, and frequently multiple modalities are necessary (fillers). Ultimately, Dr. Kane has found improvement in effacing the nasolabial fold in a certain subgroup of patients.

Certainly, Dr. Kane has tremendous experience in chemodenervation, and especially in chemodenervation of the mimetic muscles influencing the nasolabial fold, as this article describing his experience with 200 unique patients would suggest. Although Dr. Kane's methods of estimating patient satisfaction are through inference (those that return for reinjection) rather than more grounded methods of acquiring such data, the basis for his assertions must be respected.

We agree that there is likely no other area in the midface that is more controversial than the

nasolabial fold, with respect to chemodenervation. Clearly, the risk-benefit ratio is high, with potential dramatic comorbidity. Dr. Kane's application of Dr. Pessa's anatomic study² serves as the foundation for his technique. Dr. Pessa's work suggested, as stated in this article, that the levator labii superioris alaeque nasi was most responsible for the formation of the medial nasolabial fold. However, this study, when combined with Rubin's classic smile study, shows that in a certain subgroup of patients, this muscle may indeed have a major contribution to both smile and upper medial lip elevation. Kane has taken these into account in refining his technique so that only this subgroup of patients *who can afford* some loss of upper lip elevation and decreased incisor show are treated. Otherwise, the dissatisfaction and morbidity simply outweigh the benefit of medial nasolabial fold effacement. This conclusion, based on his experience, makes this article an important contribution to the literature.

There are two points that deserve further mention, however. The first is that, although dismissed in this article, there are other mimetic muscles that can be chemodenervated to efface the nasolabial fold. Specifically, the zygomaticus major and minor and the levator labii superioris can be injected. These muscles (especially the zygomaticus muscles) can deepen the nasolabial fold and exaggerate lateral canthal rhytides ("crow's feet") with active contraction. As previously described,³ low dosages of botulinum toxin injected near the origins of these muscles (away from the mouth) can efface both the nasolabial fold and the lateral canthal rhytides effectively, with mini-

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mal morbidity to the upper lip or smile. We have found similar success with this technique.⁴ Care must be taken, however, to use smaller doses of botulinum toxin and to accurately inject in this area, to avoid the potential pitfalls of significant smile and lip position alterations. The point is to weaken, *not paralyze*, these muscles.⁵ Even with weakening, a certain amount of lip pseudoptosis is to be expected, and therefore is not considered a complication.⁶ As with all procedures, this risk must be fully discussed with the patient before treatment.

The second point that must be mentioned is that the power of a study is only as good as its techniques of collecting and analyzing data. Although we congratulate Dr. Kane on his experience, there are statistically grounded methods of determining patient satisfaction, rather than inferring that those who are satisfied return for further treatment. Statistically valid questionnaires can be administered to patients that ask specific questions on different aesthetic and functional criteria. The results can then be more readily interpreted, and it can be determined whether the results are of scientific merit. This study raises important issues but suffers from intrinsic design flaws in how patient satisfaction was evaluated, which, in our mind, makes this article one author's collective case report rather than a retrospective critical review of one's experience. Clearly, the retro-

spective study is more compelling than the case report. In light of this, Dr. Kane's experience, while adding an interesting perspective to the literature, is intrinsically undermined and therefore must be interpreted as such.

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