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A Case Investigation Of Dermal Fillers Used For Face Augmentation

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ABSTRACT
There are large and various biomaterials used for the purpose of soft tissue augmentation, but none of them full the criteria and properties of the hyaluronic ideal filler material. The recent development made hyaluronic acid gels a better material for dermal implantation and gives the physician new possibilities of effective treatment. Soft tissue enhancement has become important as more patients seek aesthetic improvement without major surgical procedures. Injectable hyaluronic gel has come to be regarded as the "gold standard" of injectable or implantable fillers, against which all other fillers are measured. This article describes the techniques of injection for hyaluronic gel and discusses the indications, allergenicity, and adverse responses.

KEYWORDS : Hyaluronic acid , dermal fillers, aesthetic , injection techniques

INTRODUCTION

HA fillers are commonly used for wrinkle treatment, fold filling, and regional volumizing. The 2008 American Society for Aesthetic Plastic Surgery statistics showed that HA fillers were the most commonly used injectable substance and were much more frequently used than calcium hydroxyapatite, collagen, or poly-Lactic acid. The various soft tissue fillers can be categorized by their length of effectiveness. Since the introduction of Restylane in December 2003, various other HA filler products have entered the market.
Natural HA is enzymatically degraded by hyaluronidase and free radicals, and metabolized by the liver into water and carbon dioxide. Commercial HA is crosslinked with ether bonds to stabilize the filler. The crosslinking process prolongs the duration of HA by making it more

resistant to degradation. HA for soft tissue augmentation is produced via a bacterial fermentation process using Streptococcus equi. In addition, HA fillers can be manufactured as monophasic or biphasic products. Monophasic fillers are cohesive gels and biphasic fillers are composed of HA particles.

The most commonly used HA fillers are the Restylane and Juvederm series of products—both approved by the FDA for cosmetic soft tissue augmentation. Restylane was approved in 2003 and Juvederm was approved in 2006. Restylane is a biphasic filler and contains 100,000 particles per mL.Juvederm is a monophasic filler that has a higher HA concentration and greater degree of crosslinking compared with Restylane—making it particularly viscous.

The higher viscosity may potentially increase the duration of the product, although both types of HA fillers typically have a longevity of 6 to 12 months. HA fillers provide exceptional results when injected intradermally. The facial regions most commonly treated with HA include the nasolabial folds, the perioral region, lips, marionette lines, cheeks, tear troughs, and jawline. The upper facial regions, such as the forehead and glabellar are best treated with neurotoxin, although the experienced practitioner may concomitantly use Botox and fillers in these regions for exceptional outcomes. The most common side effects with HA fillers are ecchymosis, edema, induration, and pain—all of which are fairly short-lived.

CASE PRESENTATION

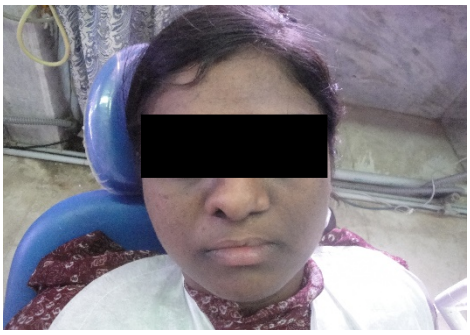
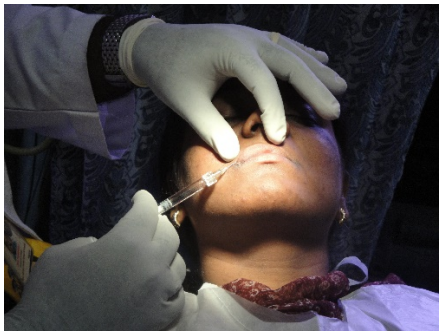
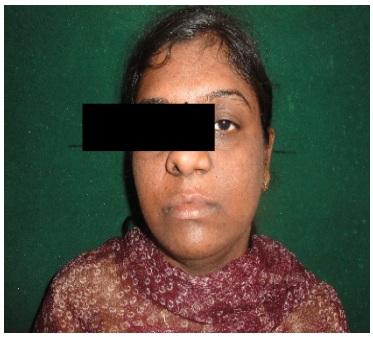
Patient named abiramivisited rmdchomfsopd for the chief complaint of wrinkles in forehead and deformity in nasolabial fold.

Patients with nasolabial creases respond best to the intradermal injectables. The most superficial creases require the thinnest dermal filler, such as Zyderm 1 and Cosmoderm.1 Deeper creases may be treated with Zyderm 2 or with small amounts of Restylane placed deeper in the dermis, which must be massaged to assure a smooth contour.

Attempting to fill finer creases with superficial placement of a thick product will result in lumpiness and an unacceptable result. Deep dermal placement of a subdermal filler in these patients will give some degree of improvement, but will fail to adequately fill the superficial aspect of the crease.

In treating true NLFs, volume is necessary; placing thicker material deeply can restore the contour needed. Superficial placement of a thin material will give minimal results with almost no longevity. (Remember that longevity is due to the inherent durability of the injectable, the patient's metabolism, and the degree of correction achieved with the final injection).

A patient who is only 50% improved with the dermal filler injection will be disappointed with the longevity of their correction much sooner than if they had achieved 80% correction with the initial injections. As treatment options for the aging face multiply, patient evaluation becomes ever more critical. By carefully considering the NLF type, as well as the patient's expectations regarding degree of correction and longevity, you can effectively deliver an acceptable cosmetic result in most patients.

CURRENT USES

HA fillers are commonly used for wrinkle treatment, fold filling, and regional volumizing. The 2008 American Society for Aesthetic Plastic Surgery statistics showed that HA fillers were the most commonly used injectable substance and were much more frequently used than calcium hydroxyapatite, collagen, or poly-Lactic acid. The various soft tissue fillers can be categorized by their length of effectiveness. Since the introduction of Restylane in December 2003, various other HA filler products have entered the market.

DISCUSSION

The presented study is one of the first attempts to conduct a comprehensive summary of available randomized clinical trials on tissue fillers, including HA, as well as other fillers, such as collagen, PLA, PCL, Mesoglow, IAL-system, and autologous fat. The focus was on the nasolabial fold, as it is one of the most common locations for tissue fillers injections. Moreover, injecting soft tissue fillers remained one of the most commonly performed cosmetic minimally invasive procedures. Therefore, the relevancy of this meta-analysis cannot be overstated. The search strategy also included marionette folds; however, we did not find available studies to meet our search criteria.

Our results include outcomes on aesthetic improvement measured using WSRS and GAIS scales, as well as a summary of complications following filler injections into the nasolabial fold area. WSRS and GAIS scales were chosen by authors based on the frequent inclusion of them in randomized clinical trials and straightforward interpretation of the results. We believe that our study is the most comprehensive and current analysis of randomized clinical trials on dermal fillers, conducted according to the EBM principles

Best of our knowledge, this is the first such comprehensive study to gather and summarize the details of injection techniques and maneuvers used in the nasolabial area. Although the dermal fillers injections are generally considered safe, some adverse events can occur. Clinicians should have comprehensive knowledge of the possible adverse reactions and be experienced in performing injections with correct technique. Due to the high diversity of available products, the injection techniques may vary. Despite that, the Global Aesthetics Consensus Group attempted to

list general principles to minimize the risk of complications. For example, the authors stressed that HA can be administered safely through both needle and cannula; however, it is recommended to use cannulas in the areas susceptible to vascular complications. Care should be taken to aspirate before injection to minimize the risk of intravascular injection. The decision on selection of the appropriate depth of injection should depend on the type of filler and instructions given by manufacturer. In general, HA gels should be injected intradermally or subdermally. It is important not to inject too superficially to avoid the formation of lumps. However, in case of less reticulated gels and/or gels with lower concentrations of HA more superficial injections may be favorable. In the vast majority of included studies clinicians used linear threading or multiple punctures technique and injected HA in the mid- to deep-dermis layer with 27- and 30-gauge needles, what seems to agree with the principles mentioned above. Among studies included in presented meta-analysis injection volume was in general below 2 ml per nasolabial fold. Most commonly concentration of the HA oscillated around 20 mg/ml. In case of injection technique, in studies included, it was performed most commonly using 27G or 30G needle in the mid-dermal region using methods described as linear threading, single puncture, retrograde injection, etc. Unfortunately, definitions of injection methods are imprecise, often mean the same or differ despite the description used.

LEGAL RAMIFICTIONS

The FDA classifies injectable fillers as medical devices, not drugs. Therefore, the regulations imposed on using injectable HA fillers resemble the regulations on other medical devices. Practitioners should be aware of the regulations imposed on the use of the injectable fillers, be aware of on-label and off-label use, and educate their staff and patients about these regulations. The use of non-FDA-approved materials as an injectable filler should be avoided. The nature of the FDA stipulates violations as being civil in nature. However, in cases of repeated, intentional, or fraudulent violations, criminal charges may be sought.

The penalty resulting from a violation may involve:

(1) FDA enforcement with prison time, fines, and economic damage;

(2) licensing action by state medical board;

(3) professional liability action by patients.

Although the FDA approves the use of HA fillers for ‘‘mid-to-deep dermal implantation for the correction of moderate to severe facial wrinkles and fold, such as nasolabial folds,’’19 HA fillers are often used in ‘‘offlabel’’ anatomic locations.

HA filler injection into the lips is a good example of such an off-label use. The Supreme Court has ruled that ‘‘off-label usage of medical devices is an accepted and necessary corollary of the FDA’s mission.’’ Health care practitioners can ‘‘prescribe or administer any legally marketed device to a patient’’ without limitation or interference.For any off-label use of HA fillers, the practitioner should counsel the patient on its off-label use and the potential complications, related to these uses.

CONCLUSION

Treatment decisions are made based on a personalized risk-benefit analysis for each individual patient. One cannot reach a judgment about whether to proceed with HA filler therapy despite a medical history of autoimmune illness. Practitioners need to understand autoimmune illnesses, their mechanisms, and the body's reaction to dermal fillers to make informed decisions about therapy.

Initially, it may be tempting to enroll in courses to administer cosmetic injectables, especially if there have been

There is a high demand for facial cosmetic therapy. Patients may benefit from receiving treatment from a dental professional over a non-medical practitioner because to their expertise in anatomy, usage of sterile surroundings, and understanding of face aesthetics. To offer comprehensive treatment, it may be beneficial to prioritize psychological assessments for patients. Consider if treatment expectations are realistic and feasible to avoid potential medico-legal complications in the future. One possible concern is that practitioners may hurry to begin these courses. Starting these courses soon after completing an undergraduate degree may result in insufficient time spent refining basic dentistry skills, such as patient management. To proceed into the field of aesthetics, it may be beneficial to first improve essential dental abilities.

The authors believe that fillers and Botox are part of dentistry and should only be performed by trained and experienced registrants with appropriate indemnity and skill set.

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