Patient Satisfaction with Hyaluronic Acid Fillers for Improvement of the Nasolabial Folds in Type IV & V Skin

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Abstract

Introduction Soft tissue augmentation by hyaluronic acid filler injections has become the most commonly done cosmetic procedure in the last 10 years. These are now being widely used for improvement of the nasolabial folds. The present study was done to evaluate the patient satisfaction after these injections.

Materials and Methods The study was conducted on 10 consenting patients. Hyaluronic acid filler (22.5 ml cross linked), 1 ml on each groove was injected under an infra-orbital block. Patient satisfaction was evaluated at 0, 14, 30, and 180 days. Photographic record was maintained. Any side effects experienced by the patients were recorded.

Results All the patients were satisfied immediately after the procedure. More than 50% were not happy at 14 days. Majority of the patients were happy at 30 days and the satisfaction was maintained at 6 months.

Conclusion Fillers are a very safe and effective modality for improving the nasolabial fold. This could prove to be a very useful tool in dental practice. Setting the patient expectations before the procedure is performed can lead to satisfied and happy patients.

Keywords Hyaluronic acid fillers · Nasolabial folds · Patient satisfaction

Introduction

The number of cosmetic procedures being performed in the last 10 years have seen a dramatic increase. Of these, the greatest increase has been seen in soft tissue augmentation procedures (filler injections) followed by botulinum toxin injections and non ablative skin rejuvenation (laser, light, and radiofrequency procedures) [1]. There has been a dramatic shift since 2001 in the chemical substrates used as dermal fillers. Cosmetologists have shifted from bovine collagen to hyaluronic acid based products (more than 70% of injections performed) [1].

Hyaluronic acid fillers are being extensively used for the improvement of the perioral area especially the nasolabial (NLF). NLF's extend from the side of the nose to the corner of the mouth and are often exaggerated early in the aging process [2]. There are a vast variety of hyaluronic acid fillers available in the market today for the same [2–4].

We conducted this study to evaluate the patient satisfaction at day 0, 14, 30, and 180. Also we evaluated the safety and longevity of these fillers. The aim is to help the doctor set the right patient expectations before the filler injections.

Methods

This is an open labeled, non blinded study. Ten female patients in the age group of 30–60 years, with moderate to severe bilateral nasolabial folds (NLFs), enrolled in the study. The severity of NLFs was measured using the wrinkle severity scale (WSRS; 0 = absent, 1 = mild, 2 = moderate, 3 = severe, and 4 = extreme; Table 1) [5]. Exclusion criteria included pregnancy, history of allergy to HA products, active infection at the local site, uncontrolled

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Table 1 Wrinkle severity rating scale

Score	Brief description	Full description
0	Absent	No visible fold; continuous skin line
1	Mild	Shallow but visible fold with a slight indentation; minor facial feature
2	Moderate	Moderately deep folds; clear facial feature visible at normal appearance but not when stretched
3	Severe	Very long and deep folds; prominent facial feature; less than 2 mm visible fold when stretched
4	Extreme	Extremely deep and long folds; detrimental to facial appearance; 2–4 mm V-shaped fold when stretched

diabetes or patients on anticoagulants or a history of keloidal tendency. Patients with a history of injection with a permanent filler ever or any filler in the last 1 year or botulinum toxin injections on lower face in the last 6 months were also excluded from the study. The patients were advised to stop using any anti-aging creams, topical steroids or any peeling agents 2 weeks before the injection and for the next 6 months.

An informed consent was obtained in all cases. A 22.5 mg/ml cross-linked hyaluronic acid of non-animal origin was used in this study. 1 ml of filler was injected on each side, after giving an infra-orbital block on either side. Pre-filled 1 ml syringes were used on either side. 27 gauge needle was used and the injections were given in the mid dermis using the fanning technique. Patient was advised to drink a lot of water after the injection. A note was made of any side effects in the form of pain, bruising, persistent redness or lump formation, experienced by the patients.

A follow up was done at day 14, 30, and 180. Pre and post pictures were taken and patient satisfaction was evaluated in all the cases at each visit. Results were graded as more than expectation (ME), up to expectation (UE) and less than expectation (LE).

Results

A total of ten patients enrolled in the study and all completed the 6 month follow up period.

Results (graded on the basis of patient expectation) were as follows: (Chart 1).

Day 0: 50% of the patients had ME while remaining 50% had UE (Figs. 1, 2).

Day 14: 6/10 had results UE, 4/10 had LE (Fig. 3).

Day 30: 4/10 patients had ME, 6/10 UE (Fig. 4).

Day 180: 2/10 ME, 8 UE, and none had LE (Fig. 5).

Pain

The procedure was done under an infraorbital block and none of the patients complained of any pain during or after the procedure.

Efficacy

The filler was found to be effective in all the cases. The grade of NLF's decreased from baseline in all the cases, although the change was more in young patients with mild–moderate grooves, than in older patients with severe grooves. More filler was required in patients with severe grooves.

Longevity

In all the cases the improvement was maintained for 6 months.

Safety

All the patients had slight redness which settled in 2 h. None of the patients reported any other adverse effects.

Discussion

Hyaluronic acid fillers for soft tissue augmentation have become the most frequently performed cosmetic procedure in the west over the past few years [1]. Dermatologist and plastic surgeons have been doing these procedures regularly. This could be a very useful value add on in a dental practice as these can prove to be very safe and effective instruments for rejuvenation of the peri-oral area besides improving the smile of the patient.

A number of studies have been performed to evaluate the longevity and safety of fillers [2–4]. Ideal filler should be sterile, biodegradable, non-pyrogenic, viscoelastic, clear, colorless, homogenous gel filler. Cross linking is done to increase the longevity of filler in the body. This study was done with the intention to find out how the patient feels in the duration that filler lasts. This knowledge would help the practitioner to handle the patients better during this period.

Fillers help in age control and rejuvenation by multiple mechanisms. Hyaluronic acid which gets depleted with age is being restored due to the material that is injected. These fillers imbibe water over time and give volume, hence the patient is advised to drink lots of water after filler injection.

Chart 1 Comparison of results at day 0, 14, 30, and 180

Fig. 3 14 Days after the filler injection

Fig. 1 Picture showing grade 3 nasolabial grooves at day 0

Fig. 4 30 Days after the filler injection

Fig. 2 Immediately after the filler injection

Fig. 5 180 Days after the filler injection

They prevent further degradation of the pre existing hyaluronic acid and also induce hyaluronic acid formation over time.

Fillers give an immediate filling effect because of the material injected and the swelling due to needle movement. The swelling settles in about 2 weeks and the patient feels that the result has disappeared. In the above study, while all the patients had more than or up to expectation results at day 0, at day 14, 4 had less than expectation results. This is the time when pre photographs become very important. Then the filler imbibes water and stimulates further collagen production thus leading to better filling of the treated area. At day, 30 and 120 none of the patients had less than expectation results.

HA is a naturally occurring substance in the body and therefore is reasonably safe and well tolerated when administered. Only side effect that has been reported is injection site bruising [2] which we did not encounter in the present study. The low risk of allergic reaction is an advantage as there is no need for skin testing before injection. This has been documented in many studies. These studies have shown that there is no evidence of cellular or humoral immune response in 98% of individuals tested [2, 6].

Fillers are a very safe and effective tool for age control. There is no age bar. Fillers in younger skin imbibe more water, cause higher collagen stimulation and last longer. Amount of filler required is decided by the grade of groove.

Conclusions

This study has reinforced that HA fillers are very safe and effective modality for rejuvenation of the peri-oral area.

Also, it highlights the fact that the patient appreciates the result of filler best at 30 days after injection. Counseling of patients regarding the results to be expected before the procedure will lead to better patient satisfaction.

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