

Volumetric Eyebrow Lifting with the Aid of a New Hyaluronic Acid Dermal Filler (Intraline) and Upper Surgical Blepharoplasty; Enhancing Outcomes

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Abstract

Periocular aging is characterized for a volumetric skeletonization of the orbit, eyebrow ptosis and dystrophic changes in the eyelids skin, such as blepharochalasis, dyschromia and elastosis. Frequently only part of this elements are addressed, with incomplete resolution of the inestetisms, unnatural results and unsatisfied patients.

Private setting patients with wishes of periocular rejuvenation were given combined approach of volumetric eyebrow lifting with the aid of a new hyaluronic acid dermal filler (Intraline Canada Inc, Kelowna BC, Canada) and upper surgical blepharoplasty.

Through this combined method both volumetric changes, ptosis and blepharochalasis were corrected, and results in the short and medium term were satisfactory for both patients and surgeon. No complications were observed and the lengthening of the primary surgery was minimal in experienced hands.

Keywords: Eyebrow; Surgical; Patients; Periocular

Introduction

Periorbital area is the principal facial feature as it takes most of the attention at the eye of the beholder. Periocular changes are one of the main features of facial aging. They are characterized by volumetric variations around the orbit; mostly skeletonization or onset of fat bags hypertrophy, eyebrow ptosis and dystrophic changes in the eyelids skin such as blepharochalasis, dyschromia and elastosis. Medical management with topical ointments are recommended to treat dyschromia and elastosis. Aesthetic medicine corrections such as botulinum toxin injections and dermal fillers have been traditionally used for eyebrow lifting or skin dehydration. Surgical corrections such as blepharoplasty and eyebrow lifting generally offer a long lasting correction, but the latter is frequently associated with a more complex and invasive surgery with greater swelling and downtime. All above frequently determines partial resolution of the inestetisms, unnatural results and unsatisfied patients.

Materials and Methods

Private setting patients with wishes of periocular rejuvenation were recruited on a first come basis and proposed for a combined approach of volumetric eyebrow lifting with the aid of a new hyaluronic acid dermal filler (Intraline, Canada Inc, Kelowna BC, Canada) and surgical blepharoplasty. A specific informed consent was designed to explain the procedure in detail.

Exclusion criteria included prior medical or surgical treatment in the area, severe brow ptosis and eyelid hooding and all general contraindications for aesthetic surgery.

Control groups of surgical blepharoplasty only or volumetric eyebrow lifting only were taken from the private clinic database from the last 2 years, to compare outcomes and satisfaction rates.

Preoperative planning and pictures were taken and distance from intercanthal line to eyebrow zenith was established, prior to the corrections.

Local anesthesia and minor sedation was available for all procedures.

Volumetric lifting of eyebrow was planned first to achieve adequate eyebrow height and allow correct skin removal assessment.

A new dermal filler, cross-linked hyaluronic acid, Intraline (Canada Inc., Kelowna BC, Canada) was available for corrections with the aid of a disposable 25 G Gems cannula (Tulip, California, USA).

Skin removal was performed secondary as needed. Fat removal was limited to the minimum to avoid skeletonization of the orbit.

Objective brow height was measured 1 week and 1 month after the procedure. Subjective patient compliance and satisfaction was evaluated with a self-assessment scale at 24 h, 1 w, 1 m and 3 months.

Results

Fifteen consecutive private setting patients (10 females, 5 males) age interval 42-69 with request of periorbital rejuvenation were operated between March and August 2015.

Control groups of blepharoplasty alone and volumetric lifting alone were extracted from the private clinic database from the last 2 years and include 50 patients (36 females and 14 males) for the former and 18 patients (13 females and 5 males) for the latter. Both groups were called for outcome evaluation and satisfaction rates measurements.



Figure 1: Before combined periorbital rejuvenation.



Figure 2: After combined periorbital rejuvenation.



Figure 3: Before combined periorbital rejuvenation.



Figure 4: After combined periorbital rejuvenation.

The combined procedure was explained to the selected group and proper informed consent was signed.

New hyaluronic acid dermal filler (Intraline, Canada Inc., Kelowna BC, Canada) was used to perform volumetric eyebrow lifting, due to its great biocompatibility and scarce post procedure edema. The formulation of this new dermal filler through its proprietary spherification technology, combines spherical particles easy to inject that give natural and smooth results, with low level of hyaluronic acid cross linking which grants higher biocompatibility and durable results.

Prior lidocaine local anesthesia small vesicle was perform on the brow tail and a 25 G needle was used for skin penetration prior to the introduction of a disposable 25 G Gems cannula (Tulip, California, USA). The cannula allows a gentle and atraumatic advanced through the tissues without damaging vital regional structures.

A media of 0.8 ml of product was necessary on each side to obtain the desired result, at a preperiosteal plane. The product was delicately placed while removing the cannula at three different layers; superior, inferior and at the eyebrow line to potentiate the lifting effect.

The product was distributed specially on the medial and center compartment of the brow and tapering was done towards the outer area.

After the correct brow height was achieved upper blepharoplasty procedure was performed. Local anesthesia and minor sedation was used in all cases. Skin removal was done as the only correction for the majority. Minor fat pad removal was only performed in selected cases (3) and was limited to a minimum to avoid skeletonization of the eye. Wound closure was done with interrupted 6, 0 nylon sutures.

Average time for the whole procedure was 70 minutes. Average upper blepharoplasty alone was 55 minutes. Average volumetric lifting alone was 25 minutes. Post operatory medication with cryotherapy and anti-inflammatory drugs was given for 24-48 hrs. All sutures were removed by the 5th day.

Swelling and healing time varied from 5 to 12 days for patients taking blood clot altering drugs.

Brow height median elevation was 1.3 mm at the medial limbus, 1.2 mm at the medial canthus and 1.5 mm at the lateral canthus. These values were comparable to the volumetric lifting only group, but were significantly different from the isolated blepharoplasty group, in which the brow level was maintained or lowered at 2 years' time in 15% of the cases.

Minor bruising and swelling was present in the first 48 hours. No complications were reported. Patient compliance and satisfaction was excellent at 24 h, 1 w, 1 m and 3 months, achieving higher values for the majority of the parameters when compared with the isolated corrections groups. Pre and post pictures are shown in Figures 1-4.

Discussion

Facial beauty is a combination of features that should be harmonic, defined, balanced, elevated/projected, symmetric, characteristic and with volumetric proportion to be appreciated and perceived as beautiful [1].

Periorbital area is recognized as the main facial trait as it takes most of the attention at the eye of the beholder. Periocular changes are one of the main features of facial aging. They are characterized by volumetric variations around the orbit, skeletonization or onset of fat bags hypertrophy, eyebrow ptosis and dystrophic changes in the eyelids skin such as blepharochalasis, dyschromia and elastosis [2].

Different treatment options medical and surgical have been proposed in literature. Medical management with topical ointments with vitamin A derivate or chemical peels are recommended to take care of dyschromia and elastosis [3]. Aesthetic medicine corrections such as botulinum toxin injections and dermal fillers have been traditionally used for eyebrow lifting or skin dehydration [4-7].

Surgical corrections such as blepharoplasty generally offer a long lasting correction, but if used as the only treatment may cause further brow ptosis or may be associated with eye skeletonization if too much tissue (fat, muscle) are removed [8].

The causes of brow ptosis may be eyebrow fat pad atrophy or skin changes (blepharochalasis, elastosis). When brow ptosis is identified, surgical eyebrow lifting is recommended. Surgical options for this region include the transblepharoplastic brow lift, the direct brow lift, the temporal brow lift, the coronal brow lift and the endoscopic brow lift [9-13]. All above are frequently associated with a more complex and invasive surgery with greater swelling and downtime, minimum 15 days and the need of general anesthetics. The actual life rhythm has cause that an important number of patients refuse to get a complete surgical resolution of their inestetisms. In this manner partial corrections are delivered being only some of the elements previously described corrected. Partial resolution of the periorbital issues may cause unnatural results and or unsatisfied patients and physicians.

For this reason we introduced this combined approach to periorbital rejuvenation through aesthetic medicine and surgery that allows patients to obtain a better overall result without extending much the length of the primary surgery or the downtime for the patients. Volumetric brow repositioning prior to upper surgical blepharoplasty allows to remove an adequate quantity of redundant skin, without compromising the aesthetic result. Proper patient selection is of prime importance to achieve good results.

Volumetric brow lifting with Intraline dermal filler gave a good, long lasting, safe and reproducible effect on the periorbital region that when associated with surgical upper blepharoplasty enhanced the overall aesthetic improvement for grater patient and physician

satisfaction without lengthening the primary procedure significantly and with a minimum healing time.

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