

Periorbital Rejuvenation Procedures in Facial Plastic Surgery

¹Professor Sayeed Ahmed Siddiky ^{FCPS, FRCS, FACS}, ¹Dr. Chowdhury Rashedul Mughni ^{FCPS, MRCS}

¹Bangladesh Specialized Hospital Ltd & Cosmetic Surgery Centre Ltd, Dhaka, Bangladesh

Original Research Article

Abstract:

DOI:

Correspondence to:

Professor Sayeed Ahmed Siddiky
 Bangladesh Specialized Hospital Ltd & Cosmetic
 Surgery Centre Ltd, Dhaka, Bangladesh

✉ sasiddiky@gmail.com; ☎ +8801911352546



This open-access article is distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are properly credited.



Scan the QR code for the Journal Homepage

Rejuvenation of the face is an important component of aesthetic plastic surgery practice. Periorbital aging contributes significantly to the overall facial aging. Therefore, periorbital rejuvenation is a big concern for aesthetic plastic surgeons. Various surgical and nonsurgical treatment procedures are available for correction of these signs of aging. The study was conducted in Cosmetic Surgery Centre and Bangladesh Specialized Hospital Ltd. The period of study was from December 2017 to December 2020. A total of 495 procedures were carried out in 121 patients who had signs of periorbital aging. 92 were females and 29 were males. Both surgical and nonsurgical procedures were done. Each of the procedure was evaluated in terms of their effectiveness and probability of complications. The overall results are very nice and pleasing. Complications were minimal. Well-chosen procedures, especially when done in combination, can provide gratifying results in patients undergoing periorbital rejuvenation.

Keywords: Plastic Surgery, aesthetic, Periorbital Rejuvenation Procedures.

|| BSAPS Journal || **Publication History** - Received: 08.07.2022 || Revised: 11.09.2022 || Accepted: 15.10.2022 || Published: 25.12.2022 ||

INTRODUCTION:

Facial rejuvenation is an important component of aesthetic plastic in surgery practice. Appearance of wrinkles along with sagging and volume loss are the major changes that occurs with facial aging¹. These changes typically involves the periorbital areas, in addition to the cheeks, jowls and neck. With advancing age periorbital changes often become the main cause behind a person looking old and “tired”. But sometimes these aging factors, like wrinkles, sagging and volume depletion can start to appear prematurely. Periorbital aging is therefore a big concern for the aesthetic plastic surgeons.

A wide variety of surgical and nonsurgical procedures are available for correction of these signs of aging process. But it is vitally important for the surgeon to assess correctly and choose the right procedure or combination of procedures for that particular patient - in order to provide gratifying results².

MATERIALS AND METHODS:

The study was conducted in Cosmetic Surgery Centre and Bangladesh Specialized Hospital Ltd. The period of study was from December 2017 to December 2020. Total of 495 procedures were carried out in 121 patients who had signs of periorbital aging. 92 were females and 29 were males.

Table-1:

| No. of Patients | Female | Male |
|-----------------|--------|------|
| 121 | 92 | 29 |

The procedures included upper and lower Blepharoplasty, Lipoinjection, Eyebrow lift, Eyebrow transplant, Fractional CO2 Laser, Microneedling, Filler and Botox. Preoperative assessment and adequate counseling was done in all the patients. Majority of the patients were done under Local anesthesia (or none at all, eg in botox and fillers). But lower eyelid blepharoplasty and lipoinjections, specially when done in combination required general anesthesia.

Table-2: Number of Procedures among the 121 patients

| Procedure Name | Numbers (n=495) |
|-------------------------|-----------------|
| Lower Blepharoplasty | 24 |
| Upper Blepharoplasty | 19 |
| Lipoinjection | 28 |
| Eyebrow Hair transplant | 10 |
| Eyebrow Lift | 18 |
| Microneedling | 139 |
| Botox | 172 |
| Filler | 60 |
| Laser (CO2 Fractional) | 25 |

Procedures -

Lower Eyelid Blepharoplasty: Is done for reshaping the lower eyelids. Here a transverse elliptical area of skin is removed and suborbicular fat compartments are opened³. Careful trimming of this excess fat is then done with the use of diathermy. Closure is attained with 6/0 vicryl.

Upper Eyelid Blepharoplasty: This is done mainly to remove the excess skin fold from the upper eyelids. But sometimes suborbicular fat trimming is also required.

Lipoinjection: Fat is harvested from the patient’s abdomen, waist or medial thighs, using low suction pressure⁴. And after decantation of oil from the top and removal of RBC from below, lipoinjection is done to fill up the depressions.

Microneedling: It is a procedure where the skin is treated with multiple micro punctures done with a device containing fine needles. Dermal roller and Dermapen are both used commonly for microneedling.

Platelet Rich Plasma (PRP): this is injected into the periorbital skin for achieving rejuvenation, either singularly or in combination with lipoinjection⁵. PRP can also be used on the skin surface while doing microneedling.

Botox: This is one of the commonest procedures used for facial rejuvenation. Skin wrinkles and fine lines can easily be smoothed out by inject this neurotoxin⁶. The result starts to becomes evident after 5 to 7 days after the injection. And it’s effect lasts for around six months. This treatment therefore needs to be repeated every six months or so.



Figure 1: Upper Blepharoplasty with Lipoinjection of Tear trough depressions



Figure 2: Before and after transconjunctival blepharoplasty for lower eyelids



Figure 3: Transconjunctival blepharoplasty with fat grafting for lower eyelids



Figure 4: Before and after Botox treatment for wrinkles at the corner of eyes (crows feet)

RESULTS:

Each of the procedure was evaluated in terms of their effectiveness and probability of complications. The overall results are very nice and pleasing. Complications were minimal.

DISCUSSION:

Since periorbital aging is the result of a combination of skin wrinkling, gravity induced sagging and volume depletion, it is vitally important to assess the tissue changes accurately. It is only then that the surgeon can decide which combination of procedure will be best for the patient. Surgical procedures like blepharoplasty are often combined with nonsurgical procedures like Botox or lasers⁷.

Transcutaneous blepharoplasty utilizing external incisions for removal of excess skin from lower eyelid generally heals well, and the scar is hardly visible⁸. Recently we have started doing blepharoplasty through transcutaneous route. This obviates the need for an external incision, and there is no worry of any visible scar.

Volume loss in the Periorbital area can make a person look tired and aged. And this is addressed by injecting HA filler or autologous fat harvested from the patient's abdomen, waist or thighs. HA filler is safe; but reabsorbs completely within 6 months^{9,10}. Whereas fat injection can give permanent result, if done properly. Improving the harvesting technique, along with careful processing and injection often give better graft survival. Another distinct advantage of fat grafting over HA filler, is that the skin quality improves over time due to its rejuvenating potential⁴. This is because of presence of ADRC (adipose derived regenerative cells) in the harvested fat.

Complications like bruising, excessive swelling, infection or ptosis can be treated accordingly, with a good outcome. But preoperative counseling along with reassurance is vitally important. Dreadful complications like blindness can very rarely happen when filler or fat is inadvertently injected intravascularly¹¹. Blockage of Supra Orbital, Dorsal Nasal or Superior Labial arteries can ultimately occlude the Central Artery of Retina and cause intraoperative blindness. It is therefore important to adhere to the guidelines – such as avoiding sharp cannulas, injecting only while withdrawing the cannula, and never injecting more than 0.1 ml at any one given point. Of course, the surgeon must remember the detailed vascular anatomy of the face while injecting fat or filler in the face. Immediate recognition and injection of hyaluronidase can reverse the situation, in case of blindness after injection of HA (hyaluronic acid) filler. Dermal threads are also be known to be used in some patients for periorbital rejuvenation¹².

In our experience, Periorbital rejuvenation is a complex area of treatment for aesthetic plastic surgeons. The results can be unrewarding if proper assessment and counseling is not done before the beginning of treatment.

CONCLUSION:

Well chosen procedures especially when done in combination, can provide gratifying results in patients undergoing periorbital rejuvenation.

REFERENCES:

1. Hall MB, Roy S, Buckingham ED. Novel use of a volumizing hyaluronic acid filler for treatment of infraorbital hollows. *JAMA Facial Plastic Surgery*. 2018 Sep 1;20(5):367-72.
2. Glaser DA, Lambros V, Kolodziejczyk J, Magyar A, Dorries K, Gallagher CJ. Relationship between midface volume deficits and the appearance of tear troughs and nasolabial folds. *Dermatologic Surgery*. 2018 Dec 1;44(12):1547-54.
3. Lambros V. Observations on periorbital and midface aging. *Plastic and reconstructive surgery*. 2007 Oct 1;120(5):1367-76.
4. Atiyeh BS, Chahine F. Outcome measurement of beauty and attractiveness of facial aesthetic rejuvenation surgery. *Journal of Craniofacial Surgery*. 2021 Sep 1;32(6):2091-6.
5. Jacono AA. Transcutaneous Blepharoplasty with Volume Preservation: Indications, Advantages, Technique, Contraindications, and Alternatives. *Facial Plastic Surgery Clinics of North America*. 2021 Apr 24;29(2):209-28.
6. Yang F, Ji Z, Peng L, Fu T, Liu K, Dou W, Li J, Li Y, Long Y, Zhang W. Efficacy, safety and complications of autologous fat grafting to the eyelids and periorbital area: A systematic review and meta-analysis. *PloS one*. 2021 Apr 1;16(4):e0248505.
7. Yuksel EP, Sahin G, Aydin F, Senturk N, Turanli AY. Evaluation of effects of platelet-rich plasma on human facial skin. *Journal of Cosmetic and Laser Therapy*. 2014 Oct 1;16(5):206-8.
8. Kapoor KM, Chatrath V, Anand C, Shetty R, Chhabra C, Singh K, Vedamurthy M, Pai J, Sthalekar B, Sheth R. Consensus recommendations for treatment strategies in Indians using botulinum toxin and hyaluronic acid fillers. *Plastic and Reconstructive Surgery–Global Open*. 2017 Dec 1;5(12):e1574.
9. Cohn JE, Greco TM. Advanced techniques for the use of neurotoxins in non-surgical facial rejuvenation. *Aesthetic plastic surgery*. 2020 Oct;44:1788-99.
10. Branham GH. Lower eyelid blepharoplasty. *Facial Plast Surg Clin North Am*. 2016 May 1;24(2):129-38.
11. Cui Y, Wang F, Voorhees JJ, Fisher GJ. Rejuvenation of aged human skin by injection of cross-linked hyaluronic acid. *Plastic and reconstructive surgery*. 2021 Jan 1;147(1S-2):43S-9S.
12. Chang JW, Koo WY, Kim EK, Lee SW, Lee JH. Facial rejuvenation using a mixture of calcium hydroxylapatite filler and hyaluronic acid filler. *Journal of Craniofacial Surgery*. 2020 Jan 1;31(1):e18-21.