

UPPER EYELID BLEPHAROPLASTY: AN APPROACH FOR A SIMPLIFIED, SAFE AND EFFECTIVE PROCEDURE

Y. P. Yordanov

ASD Consult – Sofia, Bulgaria

Abstract. Background: Upper blepharoplasty has significantly evolved over the past two decades from the unified routine excision of skin, muscle, and fat to a sophisticated and individualized to the patients' needs surgical intervention. The contemporary techniques aim to correct age-related changes while preserving or even improving anatomy and function. **Objectives:** To demonstrate the author's personal approach for obtaining safe and reliable results in aesthetic upper eyelid surgical rejuvenation. **Material and methods:** A retrospective chart review was conducted encompassing patients who underwent aesthetic upper blepharoplasty performed by a single surgeon in an ambulatory setting under local anesthesia between September 2020 and August 2023. A minimum follow-up of 9-month was established. Cases with concurrent periorbital or facial surgery, any previous surgical and non-surgical procedures on the eyelids and any underlying eyelid pathologies and comorbidities that could affect the eyelids were excluded from the study. **Results:** A total of 137 consecutive patients (mean age, 51.09 years; range, 32-77 years) were found and studied. Out of them, 119 were female ($n = 119$; 86.86%) and 18 were male ($n = 18$; 13.14%). Analysis of the obtained results demonstrated significant aesthetic improvement and high satisfaction rate among the patients with no major complications in the series. **Conclusions:** The described technique has shown to be safe and effective approach for upper eyelid surgical rejuvenation with reproducible and reliable results. It gives a natural outcome and also an improved quality of life which is of particular importance for elderly patients and those with excessive dermatochalasis.

Key words: upper blepharoplasty, eyelid surgery, oculoplastic surgery, patient safety

Corresponding author: Yordan P. Yordanov MD, PhD, FEBOPRAS, ASD Consult; 38 Ivan Evst. Geshov Blvd., 1612 Sofia, Bulgaria, e-mail: yordanov_vma@abv.bg

ORCID: 0000-0001-7142-3981

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INTRODUCTION

Eyelid surgery is among the most challenging fields of aesthetic plastic surgery. Challenges revolve around creation of a natural and youthful aesthetic outcome by addressing as many age related changes as possible while preserving complex anatomy (Fig. 1) and maintaining or even improve function [1]. Accord-

ing to the International Society of Aesthetic Plastic Surgery (ISAPS), blepharoplasty is among the three most demanded plastic surgery procedure performed around the globe [2].

Upper lid blepharoplasty attempts to restore the upper lid fold to rest at or above the pretarsal plate and remove any contour deformities created by skin, herniated fat compartments or a ptotic lacrimal gland [3].

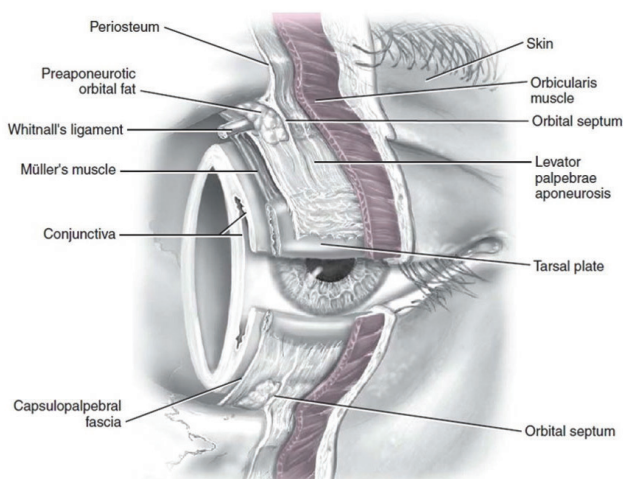


Fig. 1. Anatomy of the eyelids and periorbital area [1]

The aim of this article is to present the author's experience in aesthetic upper eyelid surgical rejuvenation with a simplified and safe approach for obtaining a natural, reliable and long-lasting result.

MATERIALS AND METHODS

A retrospective chart review was conducted encompassing patients who underwent aesthetic upper blepharoplasty performed by a single surgeon between September 2020 and August 2023. The inclusion criteria were having photographs before and after the blepharoplasty procedure and a minimum follow-up of 9 months. Exclusion criteria included any other concurrent eyelid or facial surgery, any previous surgical and non-surgical procedures on the eyelids and any underlying eyelid pathologies and comorbidities that could affect the eyelids (congenital ptosis, Grave's disease etc.).

Both written and verbal informed consent were obtained from each patient for the surgical procedure, possible risks and complications, and utilization of the patient's personal data and photographs conforming to the guiding principle of the Declaration of Helsinki.

Preoperative markings and operative technique

Incision markings were first made in the preoperative area while the patient is sitting up in primary gaze position and later completed on the operating table to ensure that the eventual scar will lie in the upper lid crease. The exact markings were designed based on each patient's individual examination, needs and the goal of the procedure. However, here are the basic principles of upper eyelid markings applied to the cases in this series:

The upper eyelid crease was marked at the level of the midpupillary line which is about 8 to 10 mm cra-

nial to the lash margin in women and approximately 6 to 7 mm in men. The marking was further made following the gentle curve of the upper lid crease. The nasal aspect of the marking never extended medial to the caruncle. At the lateral canthus, the lateral marking was about 5 to 6 mm above the lash line. The lateral extension was hidden in a skin tension line of the crow's feet (more visible when the patient is smiling) and not extend past the lateral orbital rim. The superior margin was then marked along the border between palpebral and orbital skin preserving roughly 10 to 15 mm of skin between the lower border of the eyebrow and the upper lid marking, at the level of the lateral canthus. The marks were then tapered nasally, to reduce the amount of skin and muscle to be excised. Over-resection in this area was strictly avoided.

Prior to the the injection of local anesthesia a pinch test with forceps was performed in order to ensure that the amount of skin marked for the excision was not going to result in excessive lash eversion or lagophthalmos.

Anesthesia and Surgical Procedure

All the procedures were performed under local anesthesia. 1.5 to 2.5 ml of anesthetic solution which contained equal parts of 2% Lidocaine and Ropivacaine 7.5 mg/ml with adrenaline 1:100,000 was injected subcutaneously into each upper eyelid. The skin markings were then incised with a no. 15 blade. Lower incision was made first with counter traction, afterwards the upper incision was performed to meet the lower one. At this point orbicularis oculi muscle (OOM) was preserved. In some of the cases with remarkable redundant muscle a tiny strip of preseptal OOM was excised with a tenotomy scissors. The pretarsal part of OOM has been always spared and preserved. In the cases where herniated nasal fat pads were noted to be prominent preoperatively they were removed conservatively leaving behind enough fat to avoid hollowness. Central fat pockets were generally left untouched to maintain fullness to the upper lid. After meticulous hemostasis had been accomplished, the skin wound was closed with dyed 7-0 Prolene (non-absorbable polypropylene composed, by Ethicon Inc.) running subcuticular suture. Sterile wound closure strips Omnistrip made of non-woven fabric (by Hartmann Inc.) were used for wound coverage and were kept in place for 4 to 5 days.

Postoperative period and follow-up

Patients were instructed to use cool packs to the periorbital area for the first 6-8 hours after the surgery to minimize swelling and to maintain head position at

or above the heart level to reduce edema. Antibiotic drops with a steroid component four times per day for the first week were prescribed. Patients were recommended to refrain from any strenuous activity for the first 10 to 14 days. Sutures were removed on postoperative days 4 or 5. Patients were advised that most of the swelling persists for 2 to 4 weeks after surgery and can be asymmetric.

The follow-up included clinical examinations at 4 to 5 days after the surgery, 1 month, 6 months, 9 months and 12 months postoperatively, and once per year after that.

Photographs were taken before the procedure and during the follow-up visits after the surgery. The surgical outcomes, postoperative complications and patient satisfaction were retrospectively reviewed by clinical documentation and postoperative photographs for each patient. The photographs were evaluated independently by the author (Y.P.Y.) and by a dermatologist (Aylin Shef MD, PhD) who is an experienced clinician with main focus on facial aesthetic procedures. At the 1-year follow-up, patient satisfaction was also evaluated with a standardized patient satisfaction questionnaire about the facility and the procedure. The questionnaire was anonymous and was completed by every patient on a tablet computer device at the time of the visit under the supervision of the chief nurse who was responsible for maintaining the facility and patient-care standards.

RESULTS

A total of 137 consecutive patients (mean age, 51.09 years; range, 32-77 years) underwent bilateral upper eyelid blepharoplasty for creation of youthful look and/or improving the quality of life. Out of them, 119 were

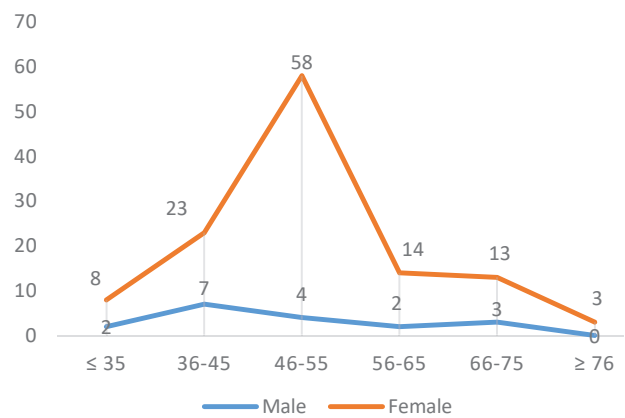


Fig. 2. Patients included in the study by age at the time of the surgical intervention

female (n = 119; 86.86%) and 18 were male (n = 18; 13.14%) (Fig. 2). All procedures were performed by the author under local anesthesia as an outpatient procedure in an ambulatory setting according to the aforementioned treatment protocol. The average operating time was 1 hour 47 minutes. Minimum follow-up time was 9 months as established, with an average of 1.5 years (range, 0,75-4 years) postoperatively.

No major surgical complications that required any kind of reoperation were registered in this series. Bruising was observed in 7 patients (n = 7; 5.11%) and Arnica-containing cream was prescribed with rapid resolution of the condition. No prolonged swelling in the upper eyelids and no case of hematoma, skin necrosis, skin loss or eyelid retraction were observed. 133 patients (97.08%) rated their result as excellent, they were happy with the outcome and would recommend the procedure to others; 4 patients (2, 92%) said their result was satisfactory. Majority of the patients older than 50 (n = 67), besides the satisfac-



Fig. 3. Preoperative (first row) and 1-year postoperative (second row) photographs of a 43-year-old woman with dermatochalasis in her upper eyelids who underwent upper blepharoplasty for creation of a more youthful look. The eyebrow position is relatively good, an atrophic chicken pox scar from infancy is visible distally to the tail of the left eyebrow

tion of the aesthetic results, also self-reported a significant improvement of their quality of life with complete cessation of the continuous sensation of heavy eyelids which had been present before the surgery.

Typical postsurgical outcomes from this case series are presented in Figures 3-6.

DISCUSSION

The demand for aesthetic procedures is considerably growing. During the last 3 years after COVID-19 pandemic, there has been increasing interest in almost all plastic surgery procedures around the globe, especially in facial plastic surgery being the blepharoplasty one of the most demanded interventions [2, 4].

In Bulgaria to date there is no official statistics regarding the aesthetic procedures and oculoplastic interventions make no exception. Eyelid surgery is performed by plastic surgeons, ophthalmologists, maxillofacial surgeons and even dermatologists. Nevertheless, there is a paucity of publications on blepharoplasty in Bulgarian scientific literature and some common challenges seem to be often underestimated in daily practice. Above all, patient safety always should be a first priority for every medical professional when performing blepharoplasty especially in an outpatient setting which is the most common situation [3, 5]. In author's observations, some of the biggest mistakes and complications in eyelid surgery come from suboptimal preoperative planning and bad execution of the surgical technique. In this regard, some noteworthy pearls and pitfalls in upper blepharoplasty deserve to be mentioned and discussed.

First, the preoperative markings are extremely important and should be done precisely. A common error especially in beginners is the nasal aspect of the drawing and the skin excision in there. This part of the markings, namely the medial edge of the lower incision, should not extend medial to the caruncle, to avoid webbing or the development of epicanthal folds. Over-resection of skin and muscle in this area has to be also avoided because it is poorly tolerated and may result in lagophthalmos in addition to a poor aesthetic outcome. If happen these deformities are very difficult to correct [1, 3, 6]. In this regard, position of the eyebrows should be evaluated cautiously. Many times the brow ptosis (sagged position of the eyebrow) could give the false impression of excessive dermatochalasis and over-resection to be done. A useful maneuver that author uses is elevating the eyebrow at its normal position with the non-dominant hand during the marking process so that the amount of skin that is marked takes into account the higher

brow position. Special attention should be given to the presence of eyebrow and lid fold asymmetry too since it's a very common condition [6]. If asymmetry is due to unilateral brow ptosis, the upper eyelid markings should closely approximate one another and a browlift could be planned to lift the lower brow. However, if the lid folds are asymmetric due to eyelid asymmetry or eyelid ptosis, the markings should aim to establish symmetry and correct the underlying ptosis as recommended by others too [1, 6]. Symmetry can be improved by removing different amounts of skin and muscle from each eyelid and equalizing the distances from the lid margin to the inferior incision and from the brow to the superior incision [6]. If there is visible skin hooding laterally, the marking could be extended but should not pass the orbital rim to avoid visibility of the scar. An appropriate curving upwards within the patient's crow's feet rhytides could be done for better removal of the excessive skin. In author's hands, this maneuver is particularly useful in younger patients with pronounced dermatochalasis (Fig. 3) but is much easier and less risky to perform in elderly ones (Fig. 4 and Fig. 6)

Regarding the surgical technique itself, there are basically two ways of removing the excessive skin and muscle: by sharp excision using scissors and/or scalpel or by cauterization and laser vaporization. The author's preference is to avoid excessive cauterization of the skin and orbicularis muscle as it could provoke excessive postsurgical edema and redness due to the tissue heating, as stated by others too [3]. It is an author's conviction that less traumatic approach is the main reason for the fast recovery of the patients in the study. On the other hand, excision of orbicular oculi strip is another step that gives some controversies. The author uses this maneuver only in cases where a better adherence of the skin is needed and also for creation of a sharper supratarsal crease with closure. Removal of orbicularis oculi strip should not be performed randomly and should be done cautiously as it may distract from a desired more youthful and natural upper lid fullness in some patients [7, 8]. Regarding the excess tissue removal from the eyelids and especially of the fat herniation, one should be aware that over-resection causes hollowness while under-resection could result in persistent bulging, dissatisfaction, and re-operation. The author's approach is based on preserving tissue as much as possible while persecuting the desired aesthetic and functional outcome. This is in accordance with the new trends in plastic surgery during the last few years for shifting from the more aggressive classical excision-focused to the contemporary preservation-focused upper blepharoplasty [1, 3, 5-9].

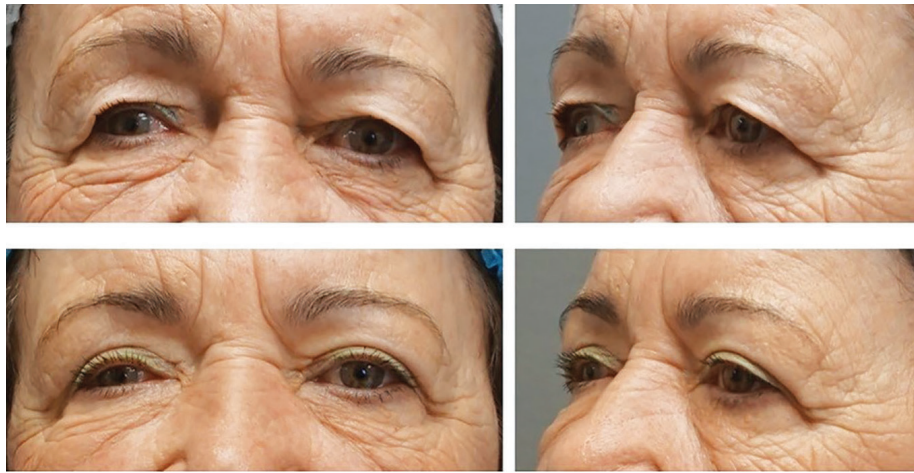


Fig. 4. Preoperative view (first row) of a 73-year-old woman with pronounced dermatochalasis causing her heaviness and visual field obstruction. On the second row: 1-year postoperative photographs demonstrate a significant aesthetic improvement which corresponds to the self-reported improved quality of life. The eyebrows are remarkably ptotic especially in their lateral half giving the false impression of underresection and presence of residual eyelid skin after the surgery



Fig. 5. Preoperative (first row) and 1-year postoperative (second row) photographs of a 39-year-old man with presence of loose and redundant skin of the upper eyelids who underwent upper blepharoplasty for creation of a youthful look. A special attention has been paid not to feminize the appearance which is an issue in aesthetic blepharoplasty in males

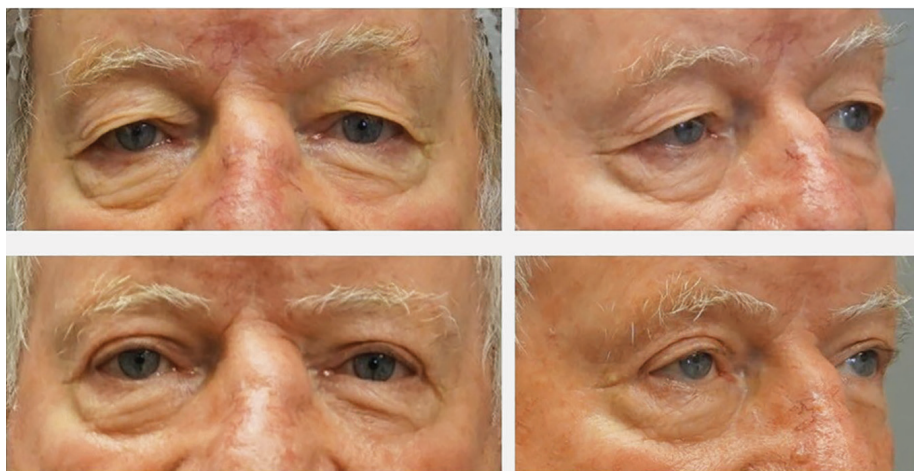


Fig. 6. Preoperative (first row) and 2-years postoperative (second row) photographs of a 74-year-old man with presence of dermatochalasis who underwent upper blepharoplasty for creation of a more youthful look. Descent of the eyebrows from their normal anatomical position is also visible before and after the surgery since upper blepharoplasty itself does not aim to correct the position of the eyebrows

In general, and besides the above mentioned, complications in blepharoplasty can be divided into intraoperative (oculocardiac reflex, bleeding, corneal abrasion), short-term postoperative (swelling, brow- ing, retrobulbar hematoma, blindness, diplopia), and long-term postoperative (retraction, asymmetry) [9]. They could be minor or more severe requiring further active treatment including additional surgeries. In this series only minor short-term postoperative complications were observed and they resolved spontaneously. The author believes that the reason for that is the good preoperative planning, precise surgical technique and close follow-up of the patients. The most severe complication in blepharoplasty is the retrobulbar hematoma (RBH) which is a serious condition that can lead to blindness [10]. The incidence of RBH is less than 1% and is not typical after upper skin-only blepharoplasty where fat herniation have not been touched [11]. It's worth to remind that pain is unusual following blepharoplasty and in cases of severe pain and/or vision changes patients should be evaluated immediately to rule out RBH.

Post-operative dressing also deserves some attention in terms of achieving uneventful recovery and good aesthetic outcome (Fig. 3-6). It is an author's preference to use fine elastic strips for coverage of the incision scar without patching nor any other type of occlusion or dressing with excessive compression. Those strips give stability of the eyelid scar for 4 to 5 days until the stitches are being removed. It's been recently published by Schuh et al. [12] that using a compression dressing after blepharoplasty shows no advantages regarding postoperative edema, ecchymosis, scar formation, or aesthetic results and it can be omitted without inferiority for the outcomes. However, the author is convinced that the dressing with low compression, which actually the strips provide, is important in terms of protecting the scar, providing the above mentioned stability for better healing of the eyelids, reducing the swelling and also because of psychological reasons giving an insight to the patients for that they have been operated. We could also speculate that another benefit of our dressing is better scar quality since it has been demonstrated that compression is one of the most effective preventive and treatment measures [13]. However, nothing could replace the good preoperative planning with individualized approach to the patient and meticulous surgical technique.

CONCLUSIONS

Upper blepharoplasty gives high satisfaction to the patients in terms of improved aesthetics and quality of life. Main prerequisites for achieving a consistent and satisfactory outcome are individualized approach, good preoperative planning, and sophisticated surgical technique, as has been demonstrated in this clinical study. Patient safety is the first priority in aesthetic surgery and must not be underestimated.

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