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ORIGINAL ARTICLE

Upper Blepharoplasty for Periorbital Rejuvenation- Evaluation of 100 Cases

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ABSTRACT

Background: *Upper blepharoplasty is now the most frequently performed aesthetic surgical procedure worldwide. Data on outcomes in South Asian patients, whose eyelid anatomy differs from that of Caucasian patients, remain limited. This study evaluates the aesthetic results, patient satisfaction and complications of upper blepharoplasty in 100 patients treated in Dhaka, Bangladesh.* ***Methods & Materials:*** *An ambispective (combined retrospective and prospective) study was conducted at Bangladesh Cosmetic Surgery, Dhaka, over five years (January 2020 to December 2024). Records of patients operated from 2020 to 2022 were reviewed retrospectively (n = 58), and patients operated from 2023 to 2024 were enrolled prospectively (n = 42). Technique was tailored to each patient: skin-only excision, skin–orbicularis excision, or skin–orbicularis excision with medial fat pad reduction. Outcomes were patient satisfaction (5-point Likert scale and 0–10 visual analogue scale), surgeon-rated aesthetic result, FACE-Q Satisfaction with Eyes score, and complications. Minimum follow-up was 6 months.* ***Results:*** *Mean age was 48.6 ± 9.8 years; 72% were women. Overall, 92% of patients were satisfied or very satisfied (mean VAS 8.7 ± 1.1). The FACE-Q Satisfaction with Eyes score rose from 38.4 ± 12.6 to 81.2 ± 10.9 ($p < 0.001$; n = 72 with paired scores). Surgeons rated 92% of results as good or excellent. Complications occurred in 12 patients (12%), all minor and mostly transient; the revision rate was 2%. Complication rates did not differ significantly between techniques ($p = 0.74$).* ***Conclusion:*** *Tailored upper blepharoplasty is a safe and effective procedure for periorbital rejuvenation in Bangladeshi patients. It achieves high satisfaction with a low rate of minor complications.*

Keywords: *Blepharoplasty; Dermatochalasis; Eyelids; Periorbital rejuvenation; Patient satisfaction*

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INTRODUCTION

The upper eyelid is often the first facial region to show signs of ageing. Loss of skin elasticity, descent of the brow, laxity of the orbicularis oculi muscle and herniation of orbital fat combine to produce dermatochalasis, lateral hooding and a tired or aged appearance (1,2). Upper blepharoplasty corrects these changes by removing redundant skin, with or without a strip of orbicularis oculi muscle and orbital fat (1,2). In 2024, eyelid surgery became the most commonly performed aesthetic surgical procedure worldwide, with more than 2.1 million operations, overtaking liposuction for the first time (3).

Besides its aesthetic aims, upper blepharoplasty has functional benefits. In severe dermatochalasis it can enlarge the superior visual field, relieve compensatory frontalis overaction and improve quality of life (4). The procedure is therefore performed for cosmetic reasons, functional reasons, or both.

The Asian eyelid has distinct anatomical features. These include a lower or absent supratarsal crease, a lower point of fusion between the orbital septum and the levator aponeurosis, more preaponeurotic and subcutaneous fat, and a thicker dermis (5). South Asian patients, including Bangladeshis, show wide variation in crease height and fullness, so technique has to be tailored to each patient.

The ideal extent of tissue resection remains debated. Some authors favour removal of a strip of orbicularis muscle to define the crease and reduce fullness (6), whereas randomised and prospective comparative studies have found comparable aesthetic results with muscle-sparing techniques and fewer early functional problems such as lagophthalmos and dry eye (7,8). A recent retrospective series of 386 patients reported higher satisfaction after combined skin, muscle and fat resection than after skin-only excision, without a significant increase in complications (9). Other series found no difference in satisfaction between resection groups (10). Systematic reviews and meta-analyses confirm high satisfaction and low complication rates overall, but also highlight heterogeneous outcome measures (11,12).

Published evidence from Bangladesh and the wider South Asian region is scarce. Most outcome data come from European, North American and East Asian populations. This study therefore aimed to evaluate the aesthetic outcomes, patient satisfaction and complications of upper blepharoplasty for periorbital rejuvenation in 100 consecutive

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patients treated at a private aesthetic surgery centre in Dhaka over five years.

METHODS & MATERIALS

Study design and setting

This ambispective (combined retrospective and prospective) observational study was conducted at Bangladesh Cosmetic Surgery, Dhaka, Bangladesh, over five years, from January 2020 to December 2024. Patients operated between January 2020 and December 2022 were studied retrospectively from medical records, photographs and follow-up notes. Patients operated between January 2023 and December 2024 were enrolled prospectively and followed with a standard protocol. The study is reported according to the STROBE guidelines for observational studies (13).

Patient selection

Inclusion criteria: adults aged 18 years or older; upper eyelid dermatochalasis, hooding or fullness causing aesthetic concern, with or without functional complaints; bilateral upper blepharoplasty; and at least 6 months of follow-up.

Exclusion criteria: true blepharoptosis requiring levator surgery; previous upper eyelid surgery; active thyroid eye disease; severe dry eye disease (Schirmer test < 5 mm in 5 minutes); uncontrolled systemic disease; and incomplete records (retrospective group) or loss to follow-up before 6 months.

One hundred patients met these criteria: 58 in the retrospective group and 42 in the prospective group.

Preoperative assessment

Each patient had a full history, including ocular symptoms, systemic disease, medication (particularly anticoagulants and antiplatelet agents) and smoking. Examination covered brow position, skin excess, lateral hooding, crease height and symmetry, orbital fat prominence, eyelid closure, Bell phenomenon and margin-to-fold distance. Margin–reflex distance 1 (MRD1) and levator function were measured only to screen for true blepharoptosis, an exclusion criterion; MRD1 was not analysed as an outcome. Visual acuity and a Schirmer test were recorded. Patients with brow ptosis were counselled about adjunct browpexy. Standardised photographs (frontal, oblique and lateral views, eyes open and closed) were taken before surgery and at follow-up. Written informed consent was obtained for surgery and use of photographs.

Surgical technique

All procedures were performed by the principal author (1.A.) using a consistent approach. Markings were made with the patient seated (**Figure 1**). The lower incision was placed in the natural crease, or at 8–10 mm above the lash line in women and 7–9 mm in men where the crease was poorly defined. The amount of skin to excise was determined with the pinch technique, leaving at least 20 mm between the upper incision line and the lower edge of the brow (1,14). Laterally the incision was extended in a gentle upward curve to address lateral hooding, staying within the orbital rim.



Figure 1: Peroperative procedure.

Figure 1 Intraoperative views of the upper eyelid in the foreground. Left: skin excision outlined with the patient seated before surgery (shown supine on the operating table), with the lower line in the supratarsal crease and a lateral extension for hooding. Right: immediately after excision and closure.

Under local anaesthesia (2% lidocaine with 1:100,000 adrenaline), with or without intravenous sedation, the marked skin was excised. Tissue resection was tailored to each patient:

1. **Skin-only excision** for patients with thin eyelids and minimal fullness.
2. **Skin–orbicularis excision** (a 2–4 mm strip of pretarsal–preseptal orbicularis oculi) for patients with muscle redundancy or an ill-defined crease.
3. **Skin–orbicularis excision with fat reduction** for patients with prominent medial (nasal) fat or preaponeurotic fullness. Fat was removed conservatively with bipolar cautery to avoid a hollow sulcus.

Haemostasis was secured with bipolar diathermy. In Asian eyelids with a poorly defined crease, supratarsal fixation sutures were placed where indicated (15). Skin was closed with a running 6-0 polypropylene or intradermal suture (16). Concomitant lower blepharoplasty or browpexy was performed when indicated.

Postoperative care

Patients received cold compresses for 48 hours, head elevation, topical antibiotic ointment, and lubricating eye drops for 2–4 weeks. Sutures were removed on days 5–7.

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Follow-up visits were scheduled at 1 week, 1 month, 3 months, 6 months and 12 months.

Outcome measures

- **Patient satisfaction:** 5-point Likert scale (very satisfied, satisfied, neutral, dissatisfied, very dissatisfied) and a 0–10 visual analogue scale (VAS) at 6 months.
- **Patient-reported outcome:** FACE-Q Satisfaction with Eyes scale (0–100) before surgery and at 6 months (17). Available for the prospective group and for retrospective patients with recorded preoperative scores.
- **Aesthetic result:** rated by an independent surgeon not involved in the operation, using standardised photographs, as excellent, good, fair or poor.
- **Functional measure:** margin-to-fold distance before and after surgery in patients with functional complaints.
- **Complications:** haematoma, infection, wound dehiscence, prolonged oedema or chemosis, dry eye, lagophthalmos, asymmetry, scar problems, milia and need for revision (14,18).

Statistical analysis

Data were analysed with SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Continuous variables are presented as mean ± standard deviation and categorical variables as frequency and percentage. Paired pre- and postoperative scores were compared with the paired t-test. Categorical variables were compared with the chi-square or Fisher exact test, and VAS scores between technique groups with one-way ANOVA. A p-value < 0.05 was considered statistically significant.

Ethical considerations

The study was approved by the Ethical Review Committee of the National Institute of Burn and Plastic Surgery, Dhaka, Bangladesh (approval no. [insert]). It was conducted in accordance with the Declaration of Helsinki (19). Informed written consent was obtained from all prospective participants. For the retrospective group, consent for use of anonymised data and photographs was obtained or the requirement was waived by the committee.

RESULTS

Patient characteristics

One hundred patients (200 upper eyelids) were included: 58 retrospective and 42 prospective. Mean age was 48.6 ± 9.8 years (range 32–71), and 72 patients (72%) were women. Sixty-four patients (64%) sought surgery for aesthetic reasons alone and 36 (36%) for combined aesthetic and functional complaints. Mean follow-up was 11.4 months (range 6–24). Baseline characteristics are shown in *Table I*.

Table I

Demographic and clinical characteristics (*n* = 100).

Variable	n (%) or mean ± SD
Age, years	48.6 ± 9.8
30–39 years	18 (18.0)
40–49 years	36 (36.0)
50–59 years	30 (30.0)
≥ 60 years	16 (16.0)
Female	72 (72.0)
Male	28 (28.0)
Indication: aesthetic only	64 (64.0)
Indication: aesthetic and functional	36 (36.0)
Hypertension	21 (21.0)
Diabetes mellitus	12 (12.0)
Current smoker	14 (14.0)
Retrospective cohort (2020–2022)	58 (58.0)
Prospective cohort (2023–2024)	42 (42.0)

Operative details

Skin–orbicularis excision was the most common technique (46%), followed by skin–orbicularis excision with fat reduction (32%) and skin-only excision (22%). Most procedures (88%) were done under local anaesthesia with or without sedation. Mean operative time in the 73 patients who had isolated upper blepharoplasty was 52 ± 11 minutes (*Table II*).

Table II

Operative details (*n* = 100).

Variable	n (%) or mean ± SD
Skin-only excision	22 (22.0)
Skin–orbicularis excision	46 (46.0)
Skin–orbicularis excision + fat reduction	32 (32.0)
Concomitant lower blepharoplasty	18 (18.0)
Concomitant browpexy	9 (9.0)
Local anaesthesia ± sedation	88 (88.0)
General anaesthesia	12 (12.0)
Operative time, isolated upper blepharoplasty (n = 73), min	52 ± 11

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Patient satisfaction and aesthetic outcome

At 6 months, 92 patients (92%) were satisfied or very satisfied, and mean VAS was 8.7 ± 1.1. The independent surgeon rated 92% of results as good or excellent. The FACE-Q Satisfaction with Eyes score improved from 38.4 ± 12.6 to 81.2 ± 10.9 ($p < 0.001$; n = 72 with paired scores). In the 36 patients with functional complaints, mean margin-to-fold distance increased from 0.9 ± 0.8 mm to 3.4 ± 0.7 mm ($p < 0.001$). Results are summarised in *Table III*.

Table III

Patient satisfaction and surgeon-rated aesthetic outcome at 6 months (*n* = 100).

Rating	Patient (Likert), n (%)	Surgeon (photographs), n (%)
Very satisfied / Excellent	68 (68.0)	62 (62.0)
Satisfied / Good	24 (24.0)	30 (30.0)
Neutral / Fair	5 (5.0)	6 (6.0)
Dissatisfied / Poor	3 (3.0)	2 (2.0)
Very dissatisfied	0 (0.0)	—

Complications

Fourteen complications occurred in 12 patients (12%). These figures include the 27 patients who had a concomitant procedure (18 lower blepharoplasty, 9 browpexy). All were minor; no patient had visual loss, retrobulbar haemorrhage, infection or wound dehiscence. Prolonged oedema or chemosis and transient dry eye resolved with conservative care within 6 weeks. Transient lagophthalmos (2 patients) resolved within 3 months. One small haematoma was evacuated at the bedside. Two patients (2%) needed revision for asymmetry (*Table IV*).

Table IV

Postoperative complications (*n* = 100).

Complication	n (%)	Management
Prolonged oedema / chemosis	4 (4.0)	Cold compress, lubricants, topical steroid
Transient dry eye symptoms	3 (3.0)	Lubricating drops
Asymmetry requiring revision	2 (2.0)	Revision under local anaesthesia
Transient lagophthalmos	2 (2.0)	Lubricants, massage; resolved < 3 months
Haematoma	1 (1.0)	Bedside evacuation
Hypertrophic scar	1 (1.0)	Silicone gel, intralesional steroid
Milia along incision	1 (1.0)	De-roofing
Total events (patients affected)	14 (12 patients, 12.0%)	

Outcomes by surgical technique

Complication rates and satisfaction did not differ significantly between the three techniques (*Table V*).

Table V

Outcomes by surgical technique.

Outcome	Skin only (n = 22)	Skin–orbicularis (n = 46)	Skin–orbicularis + fat (n = 32)	p-value
Patients with complications, n (%)	2 (9.1)	5 (10.9)	5 (15.6)	0.74†
Satisfied or very satisfied, n (%)	19 (86.4)	43 (93.5)	30 (93.8)	0.58†
VAS (0–10), mean ± SD	8.4 ± 1.3	8.8 ± 1.0	8.8 ± 1.1	0.31‡

† Fisher exact test; ‡ one-way ANOVA.

Representative cases

Figures 4 to 6 show typical results.

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Figure 4: Case 1: 42-year-old woman with marked dermatochalasis and lateral hooding. Preoperative (top) and 6-month postoperative (bottom) frontal views.



Figure 5: Case 2: 45-year-old woman with upper eyelid skin excess and fullness. Preoperative (top) and 6-month postoperative (bottom) frontal views.



Figure 6: Case 3: close-up views of the right and left upper eyelids before (top) and after (bottom) surgery, showing a well-defined supratarsal crease and reduced hooding. Photographs are published with the patients' written consent.

DISCUSSION

This study shows that tailored upper blepharoplasty gives high satisfaction and a low rate of minor complications in Bangladeshi patients. Ninety-two percent of patients were satisfied or very satisfied, the FACE-Q eye score more than doubled, and no serious complication occurred. To our knowledge, this is among the first series from Bangladesh to report outcomes of upper blepharoplasty with validated patient-reported measures.

Our satisfaction rate is consistent with international reports. Systematic reviews describe high aesthetic satisfaction and few complications after upper blepharoplasty, although outcome measures vary widely between studies (11,12). Viscardi and Giordano reported mean satisfaction of 8.3 out of 10 after combined skin, muscle and fat resection (9), comparable to our mean VAS of 8.7. The large rise in FACE-Q score reflects the strong effect of the procedure on how patients perceive their eyes, and supports the use of validated instruments over unstructured satisfaction questions (17,20).

The extent of resection should be individualised. We found no significant difference in complications or satisfaction between skin-only, skin–orbicularis and skin–orbicularis–fat techniques. This agrees with Saalabian et al., who found no difference in satisfaction or complications across resection groups (10). Muscle-sparing advocates report fewer early functional problems such as lagophthalmos and dry eye (7,8). A meta-analysis of randomised trials found no significant difference in postoperative dry eye between muscle-excising and skin-only techniques (12). Our two cases of transient lagophthalmos and three of transient dry eye all resolved, supporting a conservative muscle strip when muscle redundancy is present (6).

South Asian eyelids need particular attention. Thicker skin, more subcutaneous and preaponeurotic fat, and a lower or indistinct crease are common (5,21). Conservative fat removal helped avoid a hollow upper sulcus, which ages the face and is difficult to correct. Supratarsal fixation was useful where the crease was poorly defined (15). Patients also often wanted to keep a natural, ethnically consistent crease rather than a high Western fold, which guided our marking.

Our overall complication rate of 12% compares favourably with published series. Most events were self-limiting oedema, chemosis or dry eye, which are among the most common sequelae of blepharoplasty (14,18). The 2% revision rate for asymmetry highlights the importance of careful, symmetrical marking with the patient upright. No case of vision-threatening retrobulbar haemorrhage occurred; meticulous haemostasis and blood pressure control are still essential (14). Suture choice did not appear to affect healing in our series, in line with recent evidence that absorbable and non-absorbable sutures perform similarly (16,22).

In the 36 patients with functional complaints, margin-to-fold distance improved markedly. This agrees with the functional benefits reported by Hollander et al., including an enlarged visual field and improved quality of life (4). Brow position must be assessed before surgery: excessive skin excision in a patient with unrecognised brow ptosis can pull the brow down further, and adjunct browpexy was used in 9% of our patients (1,2).

STRENGTHS & LIMITATIONS

Strengths of this study include a consecutive series of 100 patients over five years, a prospective arm with standard follow-up, the use of a validated patient-reported outcome measure, and independent photographic assessment.

The study also has limitations. The retrospective part depends on the accuracy of records, and paired FACE-Q scores were not available for every patient. The study was not randomised and technique was chosen by the surgeon according to anatomy, which may introduce selection bias between groups. Group sizes were small for comparing techniques, so a true difference in complication rates cannot be excluded. Twenty-seven patients had concomitant lower blepharoplasty or browpexy; their oedema, chemosis, dry eye, haematoma and satisfaction outcomes may partly reflect the additional procedure, and no subgroup analysis or adjustment was performed. Follow-up was limited to a mean of 11.4 months, and the study was conducted at a single private centre, which may limit generalisability. Objective measures such as visual field testing and tear film analysis were not performed routinely. Future multicentre prospective studies with longer follow-up are recommended.

CONCLUSION

Upper blepharoplasty tailored to individual anatomy is a safe, effective and reliable procedure for periorbital rejuvenation in Bangladeshi patients. In this series of 100 cases, 92% of patients were satisfied, patient-reported eye appearance improved significantly, and complications were minor and mostly transient. Careful preoperative assessment, conservative and individualised tissue resection, and respect for South Asian eyelid anatomy are key to good results.

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