



## UPPER EYELID BLEPHAROPLASTY RESULTS AND EVALUATION OF PATIENT SATISFACTION

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### **Abstract:**

The aim of the present study is to investigate the effects of upper eyelid blepharoplasty on surgical results, recovery time, complications, scar development and patient satisfaction in cases that undergo upper eyelid blepharoplasty. 184 eyes of 92 patients who had undergone upper eyelid blepharoplasty were evaluated in the present study. The patients were evaluated in terms of surgical results, complications, recovery time and scar development. In the postoperative second month, the patients were given Surgical Satisfaction Questionnaire and Glasgow Benefit Inventory (GBI) to determine the changes in the life quality of patients and surgical benefit and to determine the characteristics of this change. The mean age was found as 59,2 ±6,8 years and 81.5% of the patients were female. Skin and fat excision were performed in all patients. None of the patients underwent muscle excision. 86.9% of the patients stated that they were very satisfied with the surgery, 6.5% stated that they were satisfied, 5.5% stated that they were moderately satisfied and 1.1% stated that they were not satisfied. According to GBI results, an increase was found in both total GBI score and in sub-scores other than physical score. Upper eyelid blepharoplasty is a common surgery for functional reasons and aesthetic concerns. Accurate evaluation and surgery increase patients' quality of life and patient satisfaction.

**Keywords:** upper eyelid; blepharoplasty; patient satisfaction

### **1. Introduction**

Blepharoplasty (aesthetic and reconstructive surgery of the eyelid) is made up of the words blepharon and plastos. Blepharon means eyelid, while plastos means forming. With the increase in life expectation, blepharoplasty has become one of the most performed procedures in the world (Zhang, S. Y. et al., 2020). In addition to aesthetic problems, blepharoplasty is also performed during the resection of tumoral tissue on the eyelid, for the treatment of ptosis, due to functional problems such as sagging skin

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(dermatochalasis) and loss of upper half visual field due to eyelash ptosis, decreased contrast sensitivity and headache. Dermatochalasis is a condition that usually occurs in advanced ages and it is often accompanied by herniation in adipose tissue due to the weakening of the orbital septum with excess skin on the upper eyelid (Yang, P. Et al., 2017).

For a successful surgery, patients should be evaluated in detail before the operation. Visual acuity, visual field, dry eye, intraocular pressure, the position of eyebrows and eyelashes, sagging skin, and the presence of accompanying fat herniation should be recorded (Saalabian, A. A. et al., 2017; Rohrich, R. J. et al., 2004). In addition, the photo should be taken before the operation. Taking photos is important for making a comparison with the postoperative period due to medicolegal reasons.

The aim of this study is to evaluate surgical results in patients who undergo upper eyelid blepharoplasty and to research patient satisfaction, recovery time and scar development.

## 2. Material and Method

The present study was conducted as a retrospective study. 184 eyes of 92 patients who had undergone upper eyelid blepharoplasty were included in the present study, which was conducted in the eye clinic of Samsun Research and Training Hospital between August 2020 and June 2022. An informed consent form was taken from all patients. The study was conducted in line with the principles of the Declaration of Helsinki and ethics committee approval was taken. Patients younger than 30 years of age, those who underwent eyelid surgery previously, those who had a trauma history, those who received the periocular injection, those who had a comorbid disease (ptosis, entropion, ectropion, lagophthalmos, etc.), those who had intracranial pathology and those who did not come to regular postoperative follow-up were excluded from the study. All patients were evaluated in the preoperative period and postoperative 2nd month in terms of best corrected visual acuity, biomicroscopic and fundoscopic examination, intraocular pressure measurement (IOP), margin reflex distance, vertical eyelid spacing, upper eyelid crease height, levator function, eyelid laxity and eyebrow and eyelash ptosis. All patients underwent intraoperative skin and fat excision. The patients were evaluated in terms of recovery time, scar tissue development and complication development. Recovery time was considered the time for patients to return to their daily social lives. Scar tissue was classified (Akkaya, S., 2018). The classification was as follows: (1); no scar in incision line, (2); incision line evident upon careful inspection, (3); easily visible scar, (4); evident hypertrophic scar.

After surgery, Glasgow Benefit Inventory (GBI) questionnaire was administered to determine the changes in patients' quality of life, surgical benefit perception and the characteristics of this change. The inventory was originally developed for otolaryngological surgeries and then validated for oculoplastic surgeries (Robinson K. et al., 1996; Smith H. B. et al., 2012). GBI has 18 questions evaluating the changes in health status and quality of life of patients after surgery and includes 3 different subscale

analysis. These subscales are classified as a general benefit (self-psychological benefit), physical benefit (general physical health) and social benefit (support from others). The answers are scaled as 5 Likert scale, and the total score, general subscale score, social support score and physical health score are obtained as a result of administrating the scale. In our study, GBI Questionnaire was modified for oculoplastic surgeries and translated into our language (Table 1).

In the post-surgery 2nd month, GBI questionnaire was administered to all patients and the total score, general subscale score, social support score and physical health score were calculated for each patient. In addition to Glasgow Benefit Inventory, a short questionnaire was administered to patients in the postoperative 2nd month and they were asked to evaluate their levels of satisfaction with the surgery subjectively (Akkaya, S., 2018). The responses were recorded as “0: Not satisfied, 1: Moderately satisfied, 2: Satisfied, 3: Very satisfied”.

**Table 1:** Glasgow Benefit Inventory  
(revised and translated into Turkish for oculoplastic surgeries)

|   | Total score | General score | Social score | Physical score |
|---|-------------|---------------|--------------|----------------|
| 1. How did the results of your surgery affect the activities you can do in your daily life?                         | *           | *             |              |                |
| 2. Did the results of your surgery make your overall life better or worse?  | *           | *             |              |                |
| 3. Do you have more optimistic expectations for your future life after surgery?                                     | *           | *             |              |                |
| 4. How has your self-confidence changed in the community after surgery?   | *           | *             |              |                |
| 5. Do you feel better or worse after surgery?   | *           | *             |              |                |
| 6. How has your way of dealing with problems at work changed after your surgery?                                    | *           | *             |              |                |
| 7. How has your self-confidence in new job opportunities changed after your surgery?                                | *           | *             |              |                |
| 8. Are you less or more afraid of social settings after your surgery?   | *           | *             |              |                |
| 9. Do you feel more conscious because of the operation you have had?  | *           | *             |              |                |
| 10. How did your discomfort with the complaint that caused you to have surgery change after the surgery?            | *           | *             |              |                |
| 11. How has your desire to participate in social settings changed after your surgery?                               | *           | *             |              |                |
| 12. How has your tendency to hesitate and be ashamed of participating in social settings changed after the surgery? | *           | *             |              |                |
| 13. How has the support of your friends changed after your surgery?   | *           |               | *            |                |
| 14. How has the support of your family changed after your surgery?  | *           |               | *            |                |

|   |   |  |   |   |
|---|---|--|---|---|
| 15. Did you feel that you had fewer or more people that really cared for you after your surgery?  | * |  | * |   |
| 16. How has your frequency of visiting the doctor for any reason changed after the surgery?   | * |  |   | * |
| 17. How has your frequency of taking medication for any reason changed after the surgery?   | * |  |   | * |
| 18. How has your frequency of discomfort due to any health problems changed after your surgery?   | * |  |   | * |
| The patients score each question between 1 and 5 according to Likert scale.<br>1: Much worse 2: Somewhat worse 3: No change 4: Somewhat better 5: Much better |   |  |   |   |

After the determination of the upper eyelid fold, the excess amount of skin and the upper border of the incision were marked with the help of a forceps. Following appropriate local anaesthesia, after a skin incision was made along the marked line with the help of a no. 15 scalpel, the skin flap was raised and removed from the underlying tissue. After controlling fat herniation by applying pressure on the globus, the orbital septum was opened, and the adipose tissue was placed between the clamps and excised with the help of cauterization or scissors. After haemostasis was achieved, an eyelid fold line was created with the help of cautery. Next, the subcutaneous tissue was sutured subcuticularly with 6.0 prolene. Blepharoplasty surgery and post-surgical evaluation were performed by a single oculoplastic surgeon.

### 2.1. Statistical Analysis

Statistical analyses were performed by using SPSS version 26.0 (IBM, Chicago, IL, USA) package program. The distribution of the continuous variables was determined with Kolmogorov-Smirnov test. The resulting numerical variables were presented as mean± standard deviation, median and minimum-maximum values, while categorical variables were evaluated as numbers and percentages. Statistical analyses were conducted by using Mann-Whitney U test, Kruskal Wallis test, Wilcoxon signed rank test and Chi-square test. Spearman test was used for correlation analysis. A p-value of <0,05 was considered as statistically significant.

### 3. Results

The mean age of the 92 patients included in the study was 59,2 ±6,8 years. 75 (81.5%) of the patients were female and 17 (18.5%) were male. The mean follow-up time was 12,4±5,2 (2-20) months. Subcutaneous sutures were taken on days 5-7 in all of the patients. The mean time to return to social life (mean recovery time) was 8,5±4,2 days. No significant difference was found between pre-surgery and post-surgery 2nd month best corrected visual acuity (p=0,742) and GBI measurements (p=0,412). Significant recovery was found in post-surgical 2<sup>nd</sup>-month margin reflex distance and interpalpebral vertical eyelid distance when compared with the pre-surgery time (Table 2). No significant difference was found in the post-surgery period in terms of Levator function and upper eyelid fold height.

**Table 2:** Comparison of pre-surgery and post-surgery 2nd month margin reflex distance, vertical eyelid distance, Levator function and upper eyelid fold height

|                          | Pre-surgery | Post-surgery 2nd month | P *   |
|--------------------------|-------------|------------------------|-------|
| Margin reflex distance   | 3,3±1,3     | 3,9±1,4                | 0,039 |
| Vertical eyelid distance | 8,0±2,0     | 10,5±1,3               | 0,027 |
| Levator function         | 10,5±1,9    | 11±1,7                 | 0,302 |
| Upper eyelid fold height | 9,7±1,4     | 9,9±1,1                | 0,122 |
| *Wilcoxon test           |             |                        |       |

Skin and fat excision were performed in all patients. After surgery, patients did not develop any serious complications other than early period pain, periorbital edema, ecchymosis and hyperaemia. In the postoperative 2nd month, while no scar was found in the incision line in 65 (70.6%) patients, scar tissue on careful examination was found in 21 (22.8%) patients and easily visible scar tissue was found in 6 (6.6%) patients. Revision surgery was performed in 1 patient due to fat herniation in the upper nasal.

According to Patient Satisfaction Questionnaire, 86.9% (80) of the patients stated that they were very satisfied with the surgery, 6.5% (6 patients) stated that they were satisfied, 5.5% (5 patients) stated that they were moderately satisfied and 1.1% (1 patient) stated that they were not satisfied. According to Glasgow Benefit Inventory results, the total GBI score was found as +44,5 ±20,1, while the general subscale score was found as +52,4 ±25,7, the social support score was found as +33,6 ±24,6 and the physical health score was found as +1,8 ±1,1. According to these results, an increase was found in the total score and all sub-scores except the physical support score.

#### 4. Discussion

Upper eyelid blepharoplasty is one of the most performed surgical procedures for both women and men today (Broer P. N. et al., 2014). Blepharoplasty is also considered as a safe procedure due to its low complication rate (Hollander M. H. J. et al., 2019). While evaluating the success of treatment, the absence of complications, physical recovery and an increase in quality of life are considered (Papadopoulos N. A. et al., 2019; Jacobsen A. G. et al., 2017). The increase in quality of life cannot be determined only with functional recovery. In a study, it was shown that patients with droopy eyelids were evaluated negatively by society and psychosocial improvement occurred with surgery (Bullock J. D. et al., 2001). In their study, Gracitelli et al. reported that the group in which surgery was planned had lower self-confidence and quality of life when compared with the control group (Gracitelli C. P. B. et al., 2017). Dermatochalasis causes functional symptoms such as narrowing of the visual field, decreased contrast sensitivity and tension-type headache. Excess skin and subcutaneous tissue cause narrowing of the visual field. Studies conducted have shown that upper eyelid blepharoplasty corrects visual field defects significantly (Pemberton J. D. et al., 2018). After surgery, patients have a bright appearance with the removal of sagging skin (Hollander M. H. J. et al., 2019). Rogers et al. evaluated the effects of surgery on contrast sensitivity (Rogers S. A. et al., 2012). Contrast sensitivity is defined as the ability to detect brightness contrast. Decreased

contrast sensitivity affects functions such as night vision and reading significantly. In this study, Rogers et al. showed that postoperative contrast sensitivity increased significantly ( $p = 0.00002$ ) and the effect of surgery on contrast sensitivity was equivalent to half the effect of cataract surgery (Rogers S. A. et al., 2012). Kim et al. showed that upper eyelid blepharoplasty increased contrast sensitivity and provided more accurate vision (Kim J. W. et al., 2013). The hypothesis in this study was a change in contrast sensitivity due to changes in eyelash ptosis, high-order aberrations and corneal topography (Kim J. W. et al., 2013). Excessive sagging of the skin and eyelash ptosis prevent the light from entering the eye and this causes diffraction. In addition, dermatochalasis causes occipitofrontal muscles to work too much and tension-type headache (Mokhtarzadeh A. et al., 2017; Kim D. et al., 2015). While all functional symptoms that occur with surgery improve, it is very important to increase the quality of life of patients and to reach psychosocially satisfactory results (Gracitelli C. P. B. et al., 2017; Warwar R. E. et al., 2001). Herreur et al. evaluated 3 different questionnaires in patients who underwent blepharoplasty and concluded that GBI Questionnaire was very efficient to evaluate the effects on the quality of life of patients (Herruer J. M. et al., 2018). In the present study, we evaluated the patients with both GBI questionnaire and with satisfaction Questionnaire. 94% of our patients stated that they were satisfied or very satisfied with the surgery they underwent. A significant increase was found in the total score, social support score and general subscale score, while no significant change was found in the physical health score. In a study conducted by Demirok et al., the patient satisfaction rate was high (97.6%), which was similar to the results of our study (Demirok G. et al., 2017).

In our study, an increase was found in parameters such as vertical eyelid distance, margin reflex distance, upper eyelid fold height and levator function after the surgery, while only the increase in vertical eyelid distance and margin reflex distance was found to be statistically significant. Nakra et al. found a 0.7 mm increase in margin reflex distance, while Çorak Eroğlu and Kazancı found a 0.6 mm increase (Nakra T. et al., 2016, Çorak E. F. et al., 2022). In our study, we found a 0.6 mm increase in margin reflex distance and a 2,5 mm increase in vertical eyelid distance. Çorak Eroğlu and Kazancı found a 2.7 mm increase in vertical eyelid distance (Çorak E. F. et al., 2022).

There is no consensus in the literature on whether to perform muscle and fat resection with skin resection in blepharoplasty (Saalabian, A. A. et al., 2017; Hoorntje L. E. et al., 2010). In one study, it was reported that fat resection may cause sunken eye (Saalabian, A. A. et al., 2017). In our study, one patient was not satisfied with the surgery. The patient had a fat hernia in the right eye in the post-surgery 2nd month. We performed revision surgery on our patient. There are studies recommending muscle (orbicularis oculi) resection. However, there are also studies not recommending muscle resection for a younger appearance and fuller eyelids (Saalabian, A. A. et al., 2017; Hoorntje L. E. et al., 2010; Damasceno R. W. et al., 2011).

Patients should be evaluated carefully post-operatively. Determining the tissue and area to be excised will increase the success of the surgery and patient satisfaction. With the surgical technique and subcuticular suture, we performed in our study, our

patients recovered very quickly and no serious complication or scar developed. A significant increase was found in the life quality of patients.

## 5. Conclusion

Upper eyelid blepharoplasty is a common surgery for functional reasons and aesthetic concerns. With the surgery we performed, we provided improvement in visual field and headache, clearer and better vision in our patients. Accurate evaluation and surgery increase patients' quality of life and patient satisfaction.

## Conflict of Interest Statement

The author declares no conflicts of interest.

## About the Author

Çiğdem Deniz Genç completed her specialization in Ophthalmology at Ondokuz Mayıs University. He is currently working as an Ophthalmology specialist at Samsun Training and Research Hospital. She has many certificates and congress participation in the field of she. She conducts research related to the field of ophthalmology.

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