REVIEW PAPER

Impact of Transcutaneous lower lid Blepharoplasty on Tear Film Stability

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ABSTRACT

Background: Dry eye is a multifactorial ocular surface disease that is brought on by inflammation and damage to the ocular surface, instability and hyperosmolarity of the tear film, and nervous system abnormalities. The absence of tear film equilibrium and related symptoms define dry eye. **Objective:** To evaluate tear film stability before and after transcutaneous lower eyelid blepharoplasty. **Patients and Methods:** The study conducted in October 6th university hospital starting from December 2024. This prospective interventional study conducted to assess the tear film both prior to and following transcutaneous lower eye lid blepharoplasty. **Results:** Our study results have revealed that the mean age of patients was 58.9±8.3, number of females were 13 (65%) and number of males were 7 (35%). the number of eyes suffered from stinging was 22(55%), burning sensation was 26(65%), redness of the eye was 26(65%) and light sensitivity was 30(75%). Regarding TBUT, there was no discernible change between the preoperative and postoperative tear film evaluations at one week, one month, and three months. Furthermore, there was no statistically significant difference between the Schirmer's test results and Preoperative and postoperative follow up of tear film evaluation) regarding Schirmer test1 or test 2 (with anesthesia) mm at 1week, 1month and 6 months. **Conclusion:** After transcutaneous lower eyelid blepharoplasty, the mechanics of tears stay the same. The surface of the eye and the tear film were not significantly affected by the procedure. Informing patients that post-operative symptoms such as ecchymosis and lid oedema would resolve after three months of blepharoplasty might increase patient confidence and satisfaction. Doing a preoperative examination, diagnosing preoperative dry eye, and overseeing prudent medication use—including topical anti-inflammatory medicines and artificial tears—are all crucial throughout the perioperative period.

Keywords: *Dry eye disease; Tear film stability; Transcutaneous lower eyelid blepharoplasty; Tear breakup time (TBUT); Schirmer test.*

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INTRODUCTION

The cosmetic and functional benefits of blepharoplasty make it a popular surgical option (Su et al., 2018).The main job of the eyelid is to keep the surface of the eye safe by regulating the natural drainage of tears and spreading them out over the cornea. Blepharoplasty is a surgical procedure that aims to restore the natural appearance and harmony of the eyelids while simultaneously restoring their functional integrity.

After a blepharoplasty, your eyelid's location and the amount of force you feel when blinking can be adjusted. Some potential side effects of blepharoplasty include increased tear evaporation, decreased mechanical tear film distribution, and reduced drainage, as well as impaired debris removal from the ocular surface, which can lead to postoperative dry eye disease. Injuries to the innervation and scar formation can also slow the blinking rate and cause lagophthalmos (Belmonte et al., 2017).

When the tear film becomes unstable, hyperosmolarity sets in, inflammation and damage to the ocular surface occur, and the result is dry eye, a complex ocular surface condition. When it comes to diagnosis and therapy, it mainly falls into two types: evaporative and aqueous deficient (Gomes et al., 2017).

Dry eye disease is accompanied by obvious pain, persistent discomfort, and occasional blurred vision, leading to a decline in the quality of life, frequent visits to the doctor, and an increase in the anxiety regarding the illness; these phenomena, severely affect the physical and mental health of the patients. It can be caused by various ophthalmic surgical procedure. Among them, lid surgery, refractive surgery, keratoplasty and cataract surgery (Gonnermann et al., 2012).

Dry eye is a complicated disorder affecting the surface of the eye that develops when the tear film becomes unstable, leading to hyperosmolarity, inflammation, and injury. Evaporative and aqueous deficient are the two primary categories used for diagnosis and treatment.

Therefore, in order to improve the postoperative satisfaction and quality of life and avoid the occurrence or aggravation of dry eye disease, studies are directed to assess incidence, pathophysiology, mechanisms, treatment and prevention of dry eye disease after blepharoplasty.

AIM OF THE WORK

The study aims to evaluate tear film stability before and after transcutaneous lower eyelid blepharoplasty.

PATIENTS AND METHODS

Study design: Prospective interventional study.

Setting: The study will be conducted in October 6th university hospital starting from December 2024.

Patients:

Inclusion criteria: Old age patients eligible for

transcutaneous lower lid blepharoplasty in the occuloplasty clinic of October 6th University hospital.

Exclusion criteria: Patients with lacrimal drainage obstruction. Patients with ectropion, entropion, periocular trauma causing eyelid malpositions, lagophthalmos, previous eyelid surgery will be excluded. Patients with evidence of ocular surface disease which might result in symptoms of dry eye such as conjunctivitis, keratitis, trichiasis, blepharitis, and thyroid eye disease. Patients using drops as a chronic use such as antiglaucoma drops.

METHODS:

Preoperative evaluation

All patients were subjected to:

Complete history taking:

Demographic data (name, age, sex). History of: Stinging. Burning sensation. Redness of the eye. Light sensitivity Medical history: cardiac problems, hypertension, chest diseases, renal diseases, liver diseases, blood diseases or bleeding tendency. Past Surgical history: history of previous operations.

Clinical examinations: Automated Refractor, uncorrected visual acuity measurement (UCVA), and best corrected visual acuity measurement. Anterior segment slit lamp examination to examine the cornea, sclera, anterior chamber, lens, and conjunctiva. Fundus examination with an indirect ophthalmoscope. Evaluation of tear film by:

Schirmer's test with & without topical anesthesia (Figure 1).

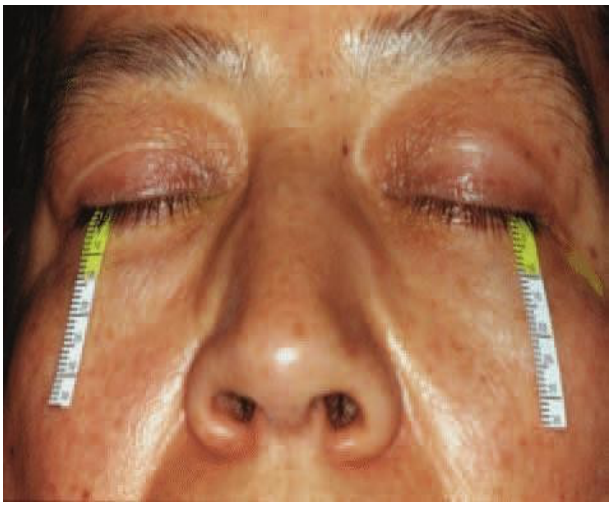

Figure (1): Schirmer's test.

Procedure:

Without Topical Anesthesia: After a Schirmer strip was inserted without the need for topical anaesthetic into the lateral third of the patient's lower eyelid, they were told to keep their eyes closed. After a set period of time, usually five minutes, duration of the soaking on the strip was measured.

With Topical Anesthesia: Topical anaesthetic was applied to the surface of the eyes. Allow the anaesthetic to act for a few minutes. The Schirmer's test was carried out as described above.

Interpretations:

Without Topical Anesthesia: Normal Range: 15-30 mm of wetting in 5 minutes. Below 15 mm: Indicates reduced basal tear secretion, suggesting potential dry eye. Above 30 mm: Normal tear production.

Tear film break up time (Figure 2).

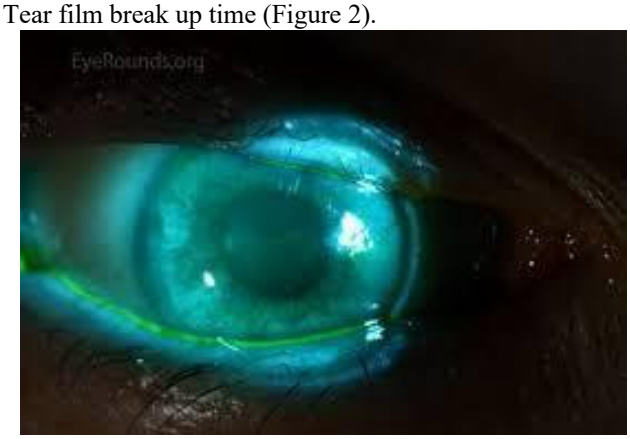

Figure (2): Tear film break up time.

Procedure:

The inferior fornix received a little injection of fluorescein dye. The patient was told to blink often to make sure the dye was placed evenly. The tear film was examined using the slit light. The duration between the final blink and the onset of the first dry patch or tear film rupture was recorded.

Interpretations: Range: Usually 10 to 15 seconds. Less than 10 seconds: This suggests evaporative dry eye since it shows instability in the tear film.

luorescein staining:

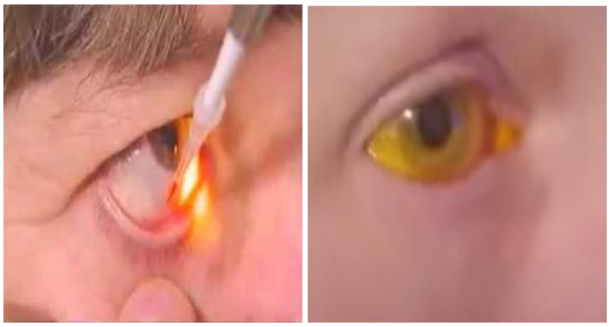

Figure (3): Fluorescein staining.

Procedure: The inferior fornix received a little of fluorescien dye. To help the dye spread, patient was told to blink often. Slit lamp was used to study the ocular surface under blue light. Checked for any flaws or regions where epithelial cells were stained.

Interpretation: Staining is either negligible or nonexistent in a normal corneal epithelium. Localized staining: This might be a sign of corneal epithelial damage or weakening. Widespread staining: This indicates significant surface injury to the eyes.

MediWorks D130 Dry Eye Diagnostic System: Guided examination providing a comprehensive report covering 9 dry eye diagnosis. Non-invasive examination, quantitative data, full-automatic firefly digital module, easy operation without parameter settings. High quality optics and built in yellow filter efficiently increase the accuracy of lens fitting. Professional 1/2.5 -inch sensor and 1,55 mm pixel, real – time playing and storage. Smart patient management system, DICOM supported. (MediWorks Ophthalmic Equipment Co., Ltd.,2024).

Functions of Mediworks D130 Dry Eye Diagnostic system:

Non-Invasive Break Up Time:

Mediviews' artificial intelligence can compute NIBUT and tear meniscus height automatically after video capture. A

fully automated analysis system efficiently quantifies the tear film's total stability after artificial intelligence (AI) finds the break-up area and evaluates NIBUT automatically. The breaking up distribution, initial break up time, average break up time, break up area % curve, and time distribution will all be automatically acquired by the AI.

Non-Invasive Tear Meniscus Height:

The artificial intelligence technology can detect tears, draw a picture of the meniscus area, and automatically determine the tear height (usually 0.2mm or more). Determine the amount and consistency of tear secretion in an impartial manner. Superior than the old-fashioned Schirmer's test in terms of efficiency and discomfort level.

Evaluation of Meibomian Glands Function:

Take three distinct pictures (Original, Enhanced, and Results) with the single touch of a button. Accurate and quantitative diagnosis results are produced by the AI identification system's automated analysis of meibomian glands loss due to meibomian gland dysfunction. Doctors are able to get a better look at the meibomian glands because to the integrated infrared lighting technology. You may make the glands stand out from the background by adjusting the depth of field.

Lipid Layer Thickness:

The D-130's built in white ring projection system ensures a larger examination area compared to the Placido rings. By recording a video of the Lipid Layer thickness and comparing results to our built in normative database it is helpful for judging the patients potential MGD.

Eyelid Margin:

With its expertly crafted Mediworks optical system, the D-130 can capture high-definition digital images that maintain clarity and sharpness at any magnification level, making it ideal for examining the general shape and subtle variations of the eyelid margin. Everything is fine, including (clear, bright ophthalmic embolism). Subtle, with a glandular prominence on the top of the gland cap. Mild, encompassing (hyperkeratosis, glandular fat plug, marginal mucosa loss). Extreme, encompassing (inconsistent borders, loss of meibomian glands - back border) Uneven, thickening, and fresh hemorrhage.

Analysis of Conjunctival Hyperemia:

Out of the ordinary: >2. To assess the degree of eye congestion, the one-of-a-kind AI detection system can detect and compute percentages of conjunctival and ciliary congestion.

Cornea Sodium Fluorescein Staining:

Improves the clarity of corneal sodium fluorescein pictures and, by extension, the positive rate of early corneal epithelial staining by means of the built-in yellow filter in conjunction with the cobalt-blue filter.

Comprehensive Dry Eye Evaluation Report:

Convenient Medical Consultation on Dry Eye Syndrome in an easy to read PDF.

Smart Patient Management system:

To aid in the creation of individualized treatment programs and the evaluation of those programs, the Smart Patient Management system permits frequent comparisons of medical information over a period of time (Insight Medical Technologies. (2024). Mediworks D-130 Dry Eye Diagnostic System).

Figure (4): Mediworks D-130 Dry Eye Diagnostic System.

Surgical procedure:

All patients had surgeries by one surgeon.

Preoperative marking

The patient was positioned with their brow lifted adequately, sitting erect, and maintaining a neutral facial expression during the preoperative marking procedure.

Anasthesia

Using a 27-30 gauge needle, 2% lidocaine and 1:100,000 epinephrine were superficially injected into the lower eyelid [Figure 5, bottom left].

Surgical technique: Lid traction suture. Redrawing incision line. Incision along subciliary line. Detachment of skin off pre-tarsal orbicularis. Incision through orbicularis to pre-septal plane. Pre-septal plane to orbital rim. Reveal of orbital rim. Exposure of central pad of fat then medial pad then lateral pad. Clamp cautery fat resection. Saline flush for hydration bleeding check. Box canthopexy. (repositioning and tightening the lateral canthal tendon). Position of orbicularis support suture. Orbicularis support stitch onto orbital rim. Assessment of excess skin. Skin mark for resection and skin resection. Skin closure.

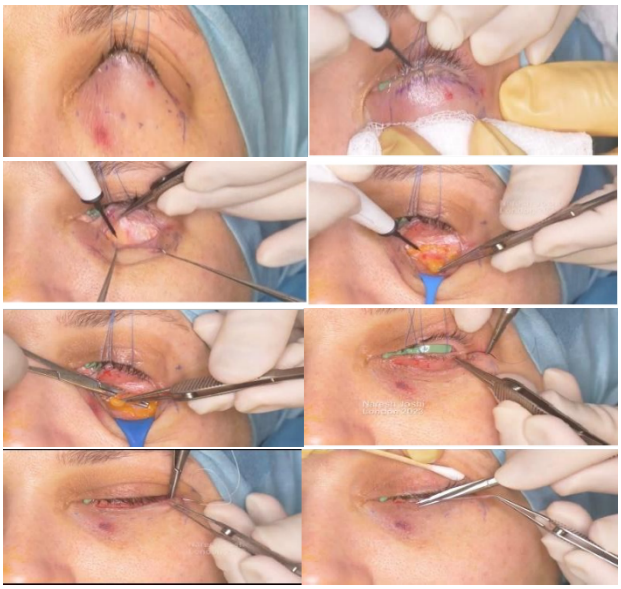

Figure (5): Showing steps of trancutaneous lower eyelid blepharoplasty.

Figure (2): Pre- and postoperative photograph of lower blepharoplasty.

Figure (3): Pre- and postoperative photograph of lower blepharoplasty.

Statistical analysis and data interpretation:
Software developed by SPSS Inc. (PASW statistics for Windows version 26. Chicago: SPSS Inc.) was used to analyze the data. Quantitative and qualitative data were characterized by percentages and counts. Quantitative data were described using mean ± Standard deviation for normally distributed data after testing normality using Shapiro Wilk test. Significance of the obtained results was judged at the (0.05) level. Paired t test was used to compare 2 paired readings distributed data.

RESULTS

Table (1): Demographic characters and medical history among studied cases

	n	%
Age (years) **Mean±SD** **Min-Max**	61.84±6.82 (49-73)	
Sex **Males** **Females**	 5 20	 20.0 80.0
Medical history		
Stinging	12	48.0

Burning sensation	21	84.0
Light sensitivity	1	4.0

Table (2): TBUT change during follow up among studied cases

	TBUT Mean ±SD (Range)	**test of significance**	**% of change**
Pre operative	10.72±1.17 (8-12)	p1=0.001* p2=0.001* p3=0.003* p4=0.001* p5=0.001* p6=0.001*	%1=29.5 %2=15.3 %3=2.9 %4=20.1 %5=37.6 %6=14.5
One week	7.56±0.91 (6-9)		
One month	9.08±1.15 (6-11)		
6 months	10.40±1.29 (8-12)		

p1, %1: difference between preoperative versus one week postoperative, p2, %2: difference between preoperative versus one month postoperative, p3, %3: difference between preoperative versus 6 months postoperative, p4, %4: difference between one week versus one month postoperative, p5, %5: difference between one week versus 6months postoperative, p6, %6: difference between one month versus 6 months postoperative
*statistically significant

Table (3): Schrimer (with anesthesia) change during follow up among studied cases

	Schrimer (with Anesthesia) Mean ±SD (Range)	**test of significance**	**% of change**
Pre operative	15.04±1.59 (12-17)	p1=0.001* p2=0.001* p3=0.103 p4=0.001* p5=0.001* p6=0.001*	%1=23.40 %2=10.6 %3=1.1 %4=16.7 %5=29.2 %6=10.7
One week	11.52±1.35 (10-14)		
One month	13.44±1.64 (11-16)		
6 months	14.88±1.42 (12-17)		

p1, %1: difference between preoperative versus one week postoperative, p2, %2: difference between preoperative versus one month postoperative, p3, %3: difference between preoperative versus 6 months postoperative, p4, %4: difference between one week versus one month postoperative, p5, %5: difference between one week versus 6months postoperative, p6, %6: difference between one month versus 6 months postoperative
*statistically significant

Table (4): Schrimer (without anethesia) change during follow up among studied cases

	Schrimer (without anesthesia) Mean ±SD (Range)	**test of significance**	**% of change**
Pre operative	19.12±1.59 (17-22)	p1=0.001* p2=0.001* p3=0.003* p4=0.001* p5=0.001* p6=0.001*	%1=18.4 %2=9.21 %3=2.1 %4=11.3 %5= %6=
One week	15.60±0.82 (15-18)		
One month	17.36±1.15 (16-20)		
6 months	18.72±1.45 (16-21)		

p1, %1: difference between preoperative versus one week postoperative, p2, %2: difference between preoperative versus one month postoperative, p3, %3: difference between preoperative versus 6 months postoperative, p4, %4: difference between one week versus one month postoperative, p5, %5: difference between one week versus 6months postoperative, p6, %6: difference between one month versus 6 months postoperative
*statistically significant

Table (5): Tear meniscus height change during follow up among studied cases

	Tear meniscus height Mean ±SD (Range)	test of significance	% of change
Pre operative	0.309±.024 (0.27-0.36)	p1=0.001* p2=0.001* p3=0.001* p4=0.001* p5=0.001* p6=0.001*	%1=18.4 %2=8.1 %3=1.9 %4=12.7 %5=20.2 %6=6.7
One week	0.252±0.018 (0.22-0.29)		
One month	0.284±0.02 (0.25-0.32)		
6 months	0.303±0.023 (0.26-0.35)		

p1, %1: difference between preoperative versus one week postoperative, p2, %2: difference between preoperative versus one month postoperative, p3, %3: difference between preoperative versus 6 months postoperative, p4, %4: difference between one week versus one month postoperative, p5, %5: difference between one week versus 6months postoperative, p6, %6: difference between one month versus 6 months postoperative
*statistically significant

Table (6): MediworksD-130 change during follow up among studied cases

	MediworksD- 130 Mean ±SD (Range) blink quality, lipid layer	test of significance	% of change
Pre operative	12.08±1.28 (10-14)	p1=0.001* p2=0.001* p3=0.003* p4=0.001* p5=0.001* p6=0.001*	%1=27.2 %2=13.6 %3=2.9 %4=18.6 %5=33.2 %6=12.3
One week	8.80±0.91 (8-11)		
One month	10.44±1.12 (9-13)		
6 months	11.72±1.06 (10-14)		

p1, %1: difference between preoperative versus one week postoperative, p2, %2: difference between preoperative versus one month postoperative, p3, %3: difference between preoperative versus 6 months postoperative, p4, %4: difference between one week versus one month postoperative, p5, %5: difference between one week versus 6months postoperative, p6, %6: difference between one month versus 6 months postoperative
*statistically significant

Table (7): Fluorescein staining change during follow up among studied cases

		Fluorescein staining		test of significance
		n	%	
Pre operative	no localized staining	25 0	100.0 0.0	p1=0.003* p2=1.0 p3=1.0 p4=0.003* p5=0.003* p6=1.0
One week	no localized staining	16 9	64.0 36.0	
One month	no localized staining	25 0	100.0 0.0	
6 months	no localized staining	25 0	100.0 0.0	

p1: difference between preoperative versus one week postoperative, p2: difference between preoperative versus one month postoperative, p3: difference between preoperative versus 6 months postoperative, p4: difference between one week versus one month postoperative, p5:difference between one week versus 6months postoperative, p6: difference between one month versus 6 months postoperative

DISCUSSION

The ageing process, heredity, UV radiation exposure, and gravity are all factors in the loss of eyelid flexibility. Moreover, the septum of periorbital fat tissue loosens in conjunction with the orbital fat tissue herniating, resulting in changes to the anatomy and function, such as sagging

and bagging of the eyelids. As we age, more skin and fat tissue accumulate on the upper eyelids, giving the appearance of being tired and old. In addition to skin sagging of upper eyelid produced by anatomical defects and gravity, blepharochalasis can also be caused by relaxation of orbital septum and the orbicularis oculi muscle. Presently, blepharochalasis patients have reported high levels of satisfaction with blepharoplasty, a surgical surgery that offers both functional and cosmetic rehabilitation (Turker and Dogan, 2020).

Although dermatochalasis is now treated using noninvasive methods, lower transcutaneous eyelid blepharoplasty has been widely accepted as an effective and long-lasting therapeutic option. Though there is a short and simple recovery period following this kind of surgery, care should be taken to avoid any potential ocular surface problems (Turker and Dogan, 2020).

The differences in the current research findings make it unclear if those who have eyelid surgery are more likely to get dry eye disease.

Owing to a few risk factors, eyelid surgery causing dry eye disease, a complicated illness (Fan et al., 2021).

This prospective interventional study's goal was to evaluate the tear film both prior to and following transcutaneous lower eyelid blepharoplasty.

Based on study data, the average age of research participants was determined to be 58.9±8.3 years, with 65% of them being female and just 35% being male. Regarding medical history, we found that 75% of patients reported light sensitivity, 65% reported burning sensations, 55% reported stinging, and 65% reported eye redness.

Furthermore, there was no appreciable change in the studied group's preoperative and postoperative follow-up tear film assessments in OD and OS for TBUT, Schirmer test 1 (with anaesthesia), or Schirmer test 2 (without anaesthesia).

Research has demonstrated a potential link between the excision of the orbicularis ocili muscle and the development of dry eye symptoms following eyelid procedures, including lower eyelid blepharoplasty (Prischmann et al., 2013; Uğurbaş et al., 2014; Unculu et al., 2018).

Our results are in line with those of Floegel et al. (2003) and Soares et al. (2018), who found that TBUT and Schirmer test values did not substantially change after lower eyelid blepharoplasty.

In line with our findings, Zhao et al. (2021) did not demonstrate any appreciable alterations in tear production as determined by the Schirmer I test and TMH. Moreover, they found that incomplete blink rate and blink frequency did not significantly change the dynamics of the eyelids following eyelid surgery.

In line with our results, a long-term follow-up (12 months) in the randomised controlled trial by Hollander et al. (2022) compared with baseline did not reveal any statistically significant or clinically meaningful differences in dry eye parameters in either treatment group, with or without excision of the orbicularis oculi muscle. They concluded that although blepharoplasty did not induce or worsen symptoms of dry eyes, it could be able to alleviate patients' subjective concerns about the condition. A significant increase in TBUT was seen at the 6-month follow-up after lower eyelid blepharoplasty.

In a series of 29 subjects having lower eyelid blepharoplasty, Lima et al. (2006) discovered no significant changes in the post-operative testing including the TBUT, rose bengal, and Schirmer's tests; the Schirmer's test, however, could have been related to alterations in the palpebral fissure.

Espinoza et al. (2009) state that tear tests used during lower eyelid blepharoplasty may not be adequate in diagnosing dry eye.

Since ocular surface abnormalities may worsen following lower eyelid blepharoplasty, Lee et al. (2008) recommend waiting at least six months between the scheduled refractive surgery and the eyelid surgery.

Shao et al. (2014) found that, one week after the operation, the Schirmer test result had significantly decreased. The decreased tear production also contributes to dryness. Three months after surgery, the dryness went away, with the exception of one patient whose dry eye persisted for three months. The patient had no history of abnormal ocular conditions, dry eyes, or abnormal orbital architecture before surgery. She did not show signs of lagophthalmos, scleral show, or chemosis three months after the treatment; nevertheless, a week and a month after the procedure, she had severe chemosis.

According to Kim et al. (2007), there was a substantial rise in the Schirmer test one month following surgery; however, Watanabe as al. (2015) reported a reduction in tear volume following cosmetic lower eyelid blepharoplasty.

Many studies have emphasised that because lower eyelid blepharoplasty may result in problems with the ocular surface, individuals who have undergone refractive surgery should be constantly watched for the emergence of dry eye (Demirok et al., 2017).

The results, however, contradict other studies' conclusions that lower eye lid blepharoplasty is linked to a greater incidence of dry eye illness. Perhaps the reason for this disparity is because the individuals in these studies have particular characteristics that make them more susceptible to issues (Lessa et al., 1997; Abell et al., 1999).

The tear meniscus height is a readily available, non-invasive, and practical clinical tool for determining tear volume and identifying dry eye with inadequate tears (Shrinkhal et al., 2022).

There was no substantial difference in the tear meniscus height of the study group across the preoperative and postoperative times.

In contrast to the results of the Shao et al. (2014) study, which demonstrated that the height, cross section area, and depth of the torn meniscus had returned to baseline three months following surgery. This might provide some insight into why patients experience both decreased tear production and dry eyes simultaneously. They hypothesised that the larger torn meniscus was caused by the subsequent elements: Lacrimal canalicular distortion (1): the removal of skin from the eyelid and the suspension of the orbicularis muscle to the periosteum of the lateral orbital rim caused the lower eyelid to tighten; (2) the removal of the orbicularis muscle reduced the lacrimal punctum's capacity to pump fluid; and (3) hypersecretion ensued from the conjunctiva being exposed during surgery as a result of a temporary, minor inferior

displacement of the lower eyelid. This displacement might be caused by an imbalance in lower eyelid forces, retraction of scar tissue, or a transient malfunction of the orbicularis.

According to this study, 35% of patients experienced oedema and 65% of patients experienced ecchymosis as sequelae. 90% of patients who received lubricating eye drops, 60% of patients who received cold fomentations, and 45% of patients who received anti-inflammatory drugs had their symptoms improve in less than a week. Although the precise cause of ecchymosis is unknown, a brief, slight inferior displacement of the lower eyelid after surgery may be the cause of conjunctiva exposure.

Elevated episcleral venous pressure (EVP) is a clinical symptom that can be caused by several underlying disorders, as stated by Rhee et al. (2008). Regardless of aqueous production and outflow rate, elevated EVP elevates IOP. Sometimes blepharoplasty causes severe periocular oedema and chemosis. Increased EVP, chemosis, and orbital congestion may all be present in situations of severe periocular inflammation.

In contrast to our findings, Turker and Dogan's (2020) analysis did not detect any repercussions, such as vision loss or problems with the function or structure of the eyelids. As per their findings, individuals who were susceptible to either a postoperative dry eye pathology or an exacerbation of pre-existing dry eye pathology were not advised to have surgery; nonetheless, the requisite therapy was administered. To avoid long-term issues, thorough preoperative evaluations were carried out. Although it was observed that the most common postoperative complaint among the patients was dry eye, these symptoms did not lead to significant complaints or problems with the cornea since appropriate measures had been taken in this respect prior to surgery. Symptomatic artificial tear formulations were an effective therapy for people with dry eyes, avoiding the need for topical cyclosporine medication. They took into consideration the likelihood that severe postoperative eyelid oedema and chemosis might increase EVP and result in a higher IOP before noting the patients' postoperative IOP changes. However, they were unable to determine whether there is a statistically significant change between the pre- and post- operative IOP readings.

Several suggestions have been made regarding the ocular surface issues that are frequently observed following eyelid procedures. Even though lower eye lid blepharoplasty is a successful surgical technique, problems might nevertheless arise from time to time. Before surgery, patients should be made aware of these complications. Scar tissue regeneration, orbital haemorrhage, entropion or ectropion, keratoconjunctivitis sicca, epiphora, ptosis, lagophthalmos, enophthalmos, and ischaemic optic neuropathy are among the unfavourable results of surgery (Morax and Touitou, 2006).

A short recovery period, improvements in look and function, use for physicians in various specialisations, and low rates of complications are among the main advantages. However, there might be unintended consequences that lower a patient's quality of life over time. By lowering the quality of the tear film, blepharoplasty may worsen the symptoms of the often occurring dry eye syndrome, even in people who do not yet show any symptoms. Therefore, we believe that in patients with ocular surface problems, surgery should be scheduled after appropriate treatment has been administered, a comprehensive ophthalmologic examination should be diligently performed during the preoperative period, and the surgical procedure should be customised for each patient.

The present study has some limitations. As a result, there were very few eyes and the follow-up period was short.

CONCLUSION

After transcutaneous lower eyelid blepharoplasty, the mechanics of tears stay the same. The surface of the eye and the tear film were not significantly affected by the procedure. Informing patients that post-operative symptoms such as ecchymosis and lid oedema would resolve after three months of blepharoplasty might increase patient confidence and satisfaction. Doing a preoperative examination, diagnosing preoperative dry eye, and overseeing prudent medication use—including topical anti-inflammatory medicines and artificial tears—are all crucial throughout the perioperative period.

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