

Outcome of Transconjunctival Approach in Lower Eyelid Blepharoplasty

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Abstract: ***Aim:** To study the outcome of transconjunctival approach in lower eyelid blepharoplasty for excision of the under eye bags mainly for cosmetic purposes. **Materials and Methods:** 30 patients with visible under eye bags coming to the Eye Outpatient Department of Government Medical College, Jammu were included in this study. Patients underwent transconjunctival lower eyelid blepharoplasty and were followed on day 1, day 7, day 30, day 90 after surgery to look for the visible reduction of the bulge in the lower eyelids. During follow up, subjective symptoms were noted and complications, if any, were recorded. Postoperative photographs were taken and compared with the preoperative photographs and results were analysed. **Observation and Results:** During the operative procedure, 13% patients had intraoperative hemorrhage and in 13% cases, there was difficulty in localization of fat pockets. No other complications were seen during the surgery. Average time taken to complete the surgery was 32.10 ± 10.88 minutes. In the early postoperative period, subconjunctival hemorrhage, eyelid ecchymosis, oedema, transient diplopia and undercorrected fat excision were observed. The overall long-term cosmesis of the surgery was good in 86.66% patients and fair cosmesis due to under correction was seen in four 13.4% patients. **Conclusion:** Transconjunctival blepharoplasty is an effective technique for excision of palpebral lipoptosis (eye bags) as it allows direct access to the fat compartments. It also avoids scarring and reduces the risk of eyelid retraction. And hence, it preserves the integrity of the eyelid. Mild complications after this surgery like sub-conjunctival hemorrhage and ecchymosis resolve in a few weeks. The long-term cosmesis of this procedure is good.*

Keywords: Transconjunctival blepharoplasty, Under eye bags, Eyelid, Cosmesis

1. Introduction

The human face is composed of small functional and cosmetic units. Eyes are the most vital component of facial aesthetics. They constitute the main point of focus in routine face-to-face interactions.^[1] Therefore, aging in this part of face is noticeable. With aging, excess skin, muscle and fat cause an unattractive bulge to develop below the eye. Such aesthetically displeasing changes are referred to as “droopy eyelids”, “tired eyes”, or “bags under the eyes”.^[2]

Puffy eyes or under eye bags are seen as a result of aging process. Blepharoplasty is one of the most common aesthetic surgical procedure performed all over the world (12.9%), following the other cosmetic procedures like breast augmentation and liposuction. Blepharoplasty is a cosmetic surgical procedure in which the eyelid skin, orbicularis oculi muscle and/or orbital fat are excised, draped or sculpted to rejuvenate the aesthetic look of the patient along with correction of any functional anomaly. The word “blepharon” means eyelid and “plastikos” means to mold.^[1]

People often seek lower blepharoplasty because they feel that they look tired or unattractive because of the puffy eyes or under eye bags.

The operative goal of blepharoplasty is to restore the correct functioning of the involved eyelid and rejuvenation of the aesthetics of the periorbital. Resection of fat from the retroseptal part of the eyelid produces a smooth anatomic transition from lower eyelid to the cheek. It is very important to be well-versed with the anatomy of the eyelid before understanding various techniques of blepharoplasty.

The lower eyelid is divided into three lamellae i.e. anterior, middle and posterior. The anterior lamella comprises of the skin and orbicularis oculi muscle. Middle lamella comprises of the orbital septum. The orbital septum is a multilayered fibrous structure densely attached to the bony orbital rim (arcus marginalis) as a continuation of the periorbital and periosteum of the maxilla. Posterior lamella includes the lower lid retractors, tarsal plate and palpebral conjunctiva. There are three orbital fat pads in the lower lid i.e. medial, central and lateral, which are contained anteriorly by the orbital septum, that separates the fat from the skin and the orbicularis muscle. Posteriorly, the fat is bounded by the lower lid retractors and the conjunctiva of the posterior fornix. The forniceal conjunctiva is continuous and reflects onto the globe as the bulbar conjunctiva.^{[3][4][5]}

There are two general approaches to access the orbital fat in transconjunctival blepharoplasty: preseptal^[6] and postseptal.^[2] In preseptal approach, incision is made between the inferior tarsal edge and the fusion point of the orbital septum and the lower lid retractors. Here, the conjunctiva is incised, and lower lid retractors are divided and orbital septum must be divided to reach orbital fat pads. In the postseptal approach, an incision is made in the conjunctiva, 4 to 5 mm below the tarsal border, which permits access to the orbital fat without any disruption or involvement of the skin, muscle, or orbital septum.

The transconjunctival blepharoplasty is receiving increasing attention as an alternate technique to the traditional transcutaneous blepharoplasty. It causes less trauma to the anatomical structures and allows easy access to surgical

field. This method does not require suturing. It avoids violation of the orbital septum, which leads to lower risk of eyelid malpositions postoperatively. Furthermore, the post-operative recovery is faster with this approach. It is more widely used, safe and effective procedure with minimal complications. This technique is useful in young patients with isolated fat excess, without any excess skin and normal muscle tone.

Aims and Objectives

To study the outcome of transconjunctival approach in lower eyelid blepharoplasty.

2. Materials and Methods

This study included 30 patients with visible eye bags (palpebral lipoptosis) in the lower eyelids, either unilateral or bilateral, who underwent transconjunctival lower eyelid blepharoplasty for the removal of prolapsed orbital fat.

The clearance had been taken from the Institutional Ethical Committee for the study in reference. Informed consent was taken from all the patients enrolled in the study. The patients in the age group of 35 to 65 years were taken up for the study irrespective of their sex.

Inclusion Criteria

- Patients with visible eye bags in the lower eyelid, both unilateral and bilateral cases.
- Patients in the age group 35-65 years.
- Patients of either sex.

Exclusion Criteria

- Patients with a history of previous lid surgery in the same eye.
- Patients with history of lower lid tumors, ocular trauma and Grave's disease.

The study proceeded as follows:

- History pertaining to the visible puffiness of the lids and relevant medical and surgical history was recorded.
- Patients were subjected to general physical examination and detailed ocular examination.
- Preoperative photographs of the eye to be operated were taken

Surgical Technique

The procedure was performed under local anesthesia by infiltrating the fornices with 5 to 10 ml of 2% lignocaine with 1:200,000 epinephrine. After local infiltrative anesthesia was given, traction suture was applied with 4-0 silk suture to the lower eyelid or lid retractor was used to enhance the surgical exposure. Conjunctiva was incised 4 to 5mm below the inferior border of the tarsal plate to approach the orbital fat pads directly. Two incisions were given, medial and lateral. The medial incision allows the exposure of the nasal fat compartment, whereas the lateral incision allows exposure of the central and lateral fat compartments. Postseptal dissection was performed in all the cases. Inferior oblique muscle is located between the nasal and central fat bags. The conjunctival bridge which was created between

nasal and central fat compartment, protects the inferior oblique muscle during dissection. Suitable corneal protectors were used throughout the procedure. After entering the septal compartments, fat excision was performed. Meticulous hemostasis was achieved. The conjunctiva was left to heal spontaneously without suturing it. Average time taken to complete the surgery was recorded for every patient. Intraoperative complications, if any, were noted. Postoperatively, pad and bandaging of the eye was done with antibiotic eye ointment.

Patients were followed up on day 1, day 7, day 30, day 90 after the surgery to look for the visible reduction of the bulge in the lower eyelids. During follow up, subjective symptoms were noted and complications, if any, were recorded. Postoperative photographs were taken and compared with the preoperative photographs and results were analysed.

3. Results

The characteristics of patients are shown in Table 1. In our study, average time taken to complete the surgery was 32.10±10.88 minutes. Intraoperative complications like bleeding and difficulty in localization of fat pockets were observed in 4(13.33%) patients each. Patients were followed on day 1, day 7, day 30, day 90 after the surgical procedure and complications, if any, were noted. Cosmesis was graded on postoperative day 90.

Commonest complication seen on the first post-operative day was sub-conjunctival hemorrhage. It was observed in 22(73.33%) patients. Other complications seen were lid ecchymosis in 18(60%), oedema of the eyelid in 13(43.33%) and conjunctival congestion in 6(20%) patients. They subsided within 2 weeks. Transient diplopia occurred in 2(6.7%) patients. Persistence of medial and lateral fat pockets was seen in 2 eyes each.

Table 2 shows complications observed in the 1st post-operative day and table 3 shows complications seen on Day 90. Table 4 shows overall cosmesis of the surgery in our study.

Table 1: Pre-operative characteristics of eyes with under eye bags

Characteristics	Patients
Number of eyes	30
Age in years (Mean±SD)	51.7±8.42
Gender	
Male	16
Female	14
Eye involved	
Right	20
Left	10

SD: Standard Deviation

Table 2: Post-operative day 1 complications

Complication	No. of eyes	Percentage
Sub-conjunctival hemorrhage	22	73.33%
Eyelid ecchymosis	18	60.0%
Eyelid oedema	13	43.33%
Conjunctival congestion	6	20.0%
Transient diplopia	2	6.7%

Table 3: Post-operative day 90 complications

Complication	No. of eyes	Percentage
No complications	26	86.7%
Persistence of medial pad of fat	2	6.7%
Persistence of lateral pad of fat	2	6.7%

Table 4: Cosmesis.

Grading of cosmesis	No. of eyes	Percentage
Good	26	86.66%
Fair	4	13.33%
Poor	0	0



Plate 1: Photograph above Showing Right-Sided Palpebral Lipoptosis and Photograph below was taken on POD 90 of Right-Sided Blepharoplasty. Both the Photographs Were Taken in Lateral View.



Figure 2: Photograph above Showing Right-Sided Palpebral Lipoptosis and Photograph below was Taken on POD 90 of Right-Sided Blepharoplasty. Both the Photographs Were Taken In Oblique View



Figure 3: photograph above showing bilateral palpebral lipoptosis and photograph below was taken on pod 90 of right-sided blepharoplasty. Both the photographs were taken in frontal view.

4. Discussion

Eyes are an important component of facial aesthetics. Aging can lead to a number of displeasing changes in the eyelids. Common cosmetic complaints of patients include lower eyelid fat bags or under eye bags, dark circles under the eyes, wrinkling around the eyes, etc. Anatomically, laxity of the orbital septum with age leads to herniation of intraorbital fat leading to eyelid bags. This gives tired or old look to the patient. Hence, they seek cosmetic correction for this problem.

Blepharoplasty is an oculoplastic procedure which aims to improve the aesthetics of the eyelid. It can be done via two approaches. Subciliary or transcutaneous approach involves making an external incision on the skin and excising the bulging fat pockets. However, this approach can lead to the formation of scar and ectropion. The other approach is transconjunctival which involves making an incision in the palpebral conjunctiva and excising the herniated fat. It has various benefits over the conventional skin approach as it is a scar-free and suture-less procedure.^[7]

This study has been done to study the outcome of transconjunctival approach in lower eyelid blepharoplasty for excision of the herniated fat pockets. This study included 30 patients in the age group of 35 to 65 years and both the sexes. The indication for surgery was the presence of under eye bags in all the patients. The outcome has been studied in terms of complications and cosmesis.

Intraoperative Complications

In our study, during the procedure, 4 (13.33%) patients had intraoperative hemorrhage and in 4 (13.33%) patients, there was difficulty in localization of fat pockets leading to

insufficient lipectomy. No other intraoperative complication was seen in our study. **Kashkouli MB et al., (2013)**^[8] reported that underexcision of fat was seen in 4.9% patients. **Rancati A et al., (2015)**^[7] reported insufficient lipectomy in 2.7% and intraoperative bleeding in 1%. They also reported corneal injury in 1% patients during the surgery which was not observed in our study.

Duration of Surgery

Average time taken to complete the surgery in our study was 32.10±10.88 minutes (range 20 to 40 minutes). **Korchia D et al., (2003)**^[9] reported the average time of 40 minutes to complete the procedure. **Rancati A et al., (2015)**^[7] reported that average time taken to complete the surgery was 45 minutes. So, the average time taken to complete the procedure in our study was less than that reported in these studies.

Postoperative Complications

Our study states that in the early postoperative period, subconjunctival hemorrhage was observed in 22 (73.33%) patients, eyelid ecchymosis was seen in 15 (60%) patients and eyelid oedema was seen in 13 (43.33%) patients. Persistence of medial pad of fat and lateral pad of fat was seen in two (6.7%) patients each. So, persistence of fat pads was seen in four (13.4%) patients. No reports of eyelid retraction, scleral show and tear trough deformity were obtained. There was no recurrence of lower eyelid bulging or any wound related complications. **D Korchia et al., (2003)**^[9] reported that out of 23 patients, lid oedema was seen in 5 patients, ecchymosis in 2 patients and undercorrection was orbital bags in 2 patients. Our study has higher weightage of these complications as they used bipolar cautery for achieving hemostasis which was not available at our set up. Their study also reported a case of keratitis which was not seen in our study. The present study reported under correction of fat excision in 13.4% patients while **Kahkouli MB et al., (2013)**^[8] reported it in 4.9% cases. Other complications seen in his study were eyelid retraction in 1.2% patients and tear trough deformity in 9.7% cases. No such complication was seen in our study. **Pacella SJ et al., (2010)**^[4] reported 1.7% cases of granuloma formation which was not seen in our study. **Rancati A et al., (2015)**^[7] reported corneal ulcer in 1% cases while in the present study no such cases were reported.

Cosmesis

In our study, good cosmesis was seen in 86.7% which is comparable to the study of **Undavia S et al., (2016)**^[10] who reported good cosmesis in 82% cases. **Kashkouli MB et al., (2013)**^[8] reported good cosmetic outcome in 92.8% patients.

5. Conclusion

The present study thus concludes that transconjunctival blepharoplasty is an effective technique for excision of palpebral lipoptosis (eye bags) as it allows direct access to the fat compartments. It also avoids scarring, so the signs of surgery are unnoticeable. It reduces the risk of eyelid retraction. And hence, it preserves the integrity of the eyelid. Mild complications after this surgery like sub-conjunctival hemorrhage and ecchymosis resolve in a few weeks. The long-term cosmesis of this procedure is really good and the

patients who seek cosmetic correction for their under eye bags are benefitted from this surgery.

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