

ORIGINAL ARTICLE

Incidence of Lower Lid Ectropion Following Cataract Surgery in Government Hospital, Jamnagar

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ABSTRACT

BACKGROUND: To study the incidence of lower lid ectropion after cataract surgery. **OBJECTIVE:** To compare the pre-operative lower lid parameters viz. punctal position, snap back test, medial canthal laxity, lateral canthal laxity on post operative day 1, 7 and 15 and to analyze the factors associated with ectropion in such cases. **MATERIALS AND METHODS:** 50 Patients who underwent cataract surgery in 2016 were randomly enrolled. Various parameters like punctal position, snap back test, medial and lateral canthal laxity were compared before and after cataract surgery on day 1, 7, 15. The same type of wire speculum was used while doing cataract surgery. Bridle suture was taken in each of the operations. SICS was done in every case under upper and lower lid peri-bulbar anaesthesia. **RESULTS:** A total of 50 patients were analyzed. Out of these 30 were females and 20 males. Of these, only 4 patients (8%) showed an associated grade 1 ectropion i.e. eversion of the medial lower lid margin along with punctal eversion. Snap back test took 2-3 seconds i.e. grade 1, medial canthal laxity was 2mm i.e. grade 1 and lateral canthal laxity was 2-4 mm i.e. grade 1. The status of the lower lid of the operated eye of these patients remained the same on 3 subsequent follow up visits i.e. on day 1, day 7 and day 15. All of these 4 patients were between 75 to 80 years. Only 2 of the rest 46 patients (4.3%) whose lower lid condition was normal showed punctal eversion on the 1st post op day with normal snap back test, medial and lateral canthal laxity. Punctal eversion in these 2 patients improved with subsequent follow ups. These 2 patients were over 75 years of age. **CONCLUSIONS:** Lower lid ectropion is not a common complication occurring after cataract operation as compared to post op ptosis which can occur as high as 4%. Age of the patient plays a more determining role in the incidence and progression of lower lid ectropion in these patients rather than any intra operative manoeuvres like using universal wire speculum, bridle suture or peri-bulbar blocks.

Key words: Cataract, surgery, complication, ectropion, snap back test, medial canthal laxity, lateral canthal laxity.

INTRODUCTION

Ectropion is a condition where eye lid margin everts away from the globe. Ectropion usually involves the lower lid because of gravity. As the lid falls away from the globe there is "scleral show" because normally lower lid just touches the limbus. Also the capillary action cannot be maintained and the lower puncta which is not in the lacus lacrimalis is unable to pass tears to the canaliculi. So, patients may have this lid deformity for months or years before they seek medical attention, where the chief complaint of the

a result of which they constantly rub their eyes in random directions which leads to exacerbation of the lid laxity and also scarring of the skin due to dermatitis caused by tears.

Ectropion if long standing or severe grade also leads to exposure keratitis and thickening and keratinization of the exposed conjunctiva which makes lid repositioning difficult even after surgery.

Types of Ectropion

1. **Congenital:** This is a very rare condition which usually occurs due to either shortening or lengthening of the skin. It is usually associated with anomalies like Blepharophimosis syndrome, Strabismus fixus, ichthyosis, Down's syndrome etc. or there may be "Acute Eversion" in premature neonates as orbicularis spasm can induce slipping of the loosely adherent eyelid lamellae.
2. **Acquired:**

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patient invariably is persistent watering, as

- **Involuntional:** This is the most common type seen due to aging changes in the lid. There occurs Lamellar Dissociation wherein posterior lamella moves over the relatively fixed anterior lamella. There may also be horizontal lid laxity generalized or localized to medial canthal tendon or lateral canthal tendon. Also there can be weakness of the lower lid retractors.
- **Paralytic:** This occurs due to the paralysis of facial nerve (Bell's palsy, cleft angle tumors, herpes zoster oticus, parotid inflammations and tumors) which leads to the immediate loss of active support which keeps the aging lid adherent to the ocular surface i.e. Orbicularis oculi muscle. This leads to impairment of lower eyelid appearance and function like lagophthalmos, epiphora sclera show and exposure keratitis. Prolonged paralysis may lead to vertical lid shortening due to retraction of the anterior lamella.
- **Mechanical :** Lid tumors due to their mass effect result in eversion of the lid, a larger than required prosthetic eye can also cause this type.
- **Cicatricial :** Usually occurs from scarring and subsequent shortening due to contracture of the anterior lamella which may occur in facial burns, lid trauma, chronic dermatitis, post blepharoplasty, as side effect of common glaucoma drugs like dorzolamide, brimonidine, anti neoplastic agents like docetaxel, cetuximab etc, tumors like cutaneous t cell lymphoma. Acute idiopathic bilateral ectropion has also been reported.

Ectropion can also occur post cataract surgery the grade of which may range from simple grade 1 with just punctal eversion to grade 4 with visibility of lower forniceal conjunctiva on primary gaze.

This can be due to prolonged duration of surgery which increases the duration of stretch of the lid speculum on the lower lid.

A very tight fitting of the lid speculum can also lead to same thing even if applied for a shorter duration.

An Ectropion can be graded as follows:

Grade 1: Eversion of medial lower lid margin along with punctal eversion

Grade 2: There is minimal falling apart of whole lid margin.

Grade 3: Eversion of whole lid margin with exposure of tarsal conjunctiva

Grade 4: Eversion of lid margin with exposure of palpebral conjunctiva.

An ectropion of lower lid which is aggravated post cataract surgery due to excessive speculum use needs to be closely monitored in follow up visits by doing the following objective measurements:

1. **Snap-Back test:** The lower lid is held and retracted downwards and released immediately noting the time for it to come to its original position.

Grade 0 –normal lid returning immediately to its original position

Grade 1- takes approx. 2-3 seconds

Grade 2- takes 4-5 seconds

Grade 3 - > 5 seconds but does return to normal position with blinking

Grade 4—never returns to original position and continues to hang down

2. **Medial Canthal Laxity Test:** In this, we pull the lower lid laterally away from medial canthus and measure the displacement of the puncta, normal Upper limit of which is 0-1 mm

Grade 1 2mm

Grade 2 3 mm

Grade 3 > 3mm

Grade 4 does not return to the baseline

3. **Lateral Canthal Laxity Test:** In this we pull the lower lid medially away from the lateral canthus and measure the displacement of the lateral canthal corner (normal or grade 0 is upto 2mm)

Grade 1: 2-4mm

Grade 2: 4-6 mm

Grade 3:> 6mm

Grade 4: grade 3 and does not return to baseline even after blinking.

MATERIALS AND METHODS

This is a randomized prospective study enrolling 50 patients for cataract extraction with PCIOL implantation. Systematic pre-

operative evaluation of all patients was done including grading of the cataract after pupillary dilation with tropicamide 1% eye drops, retinoscopy, gonioscopy adnexa examination and full systemic work up.

The lower lid condition of the patients was assessed according to the following parameters : medial and lateral canthal laxity , snap back test and the punctal position. All these parameters were graded according to the standard norms and finally any grade of ectropion if present was noted.

Cataract extraction was done with SICS technique in which peribulbar block was give 4 ml each in both upper and lower eyelids and a standard universal wire speculum was used in all the patients.

The patients were followed up on day 1 , day 7 and day 15 and special attention was paid to lower lid condition and following parameters were studied according to the normal standards. lower punctal position, medial and lateral canthal laxity and snap back test and any change in their patterns was noted in each visit and finally any appearance of the surgery induced ectropion if present was assessed

RESULTS

The data derived from the above study was analyzed. Out of the 50 patients enrolled, 32 were females and 18 were males. The lower lid condition of the eye being operated was assessed preoperatively and the results obtained are shown in the following figures and their subsequent descriptions:

Figure 1: Age Wise Distribution of Males and Females

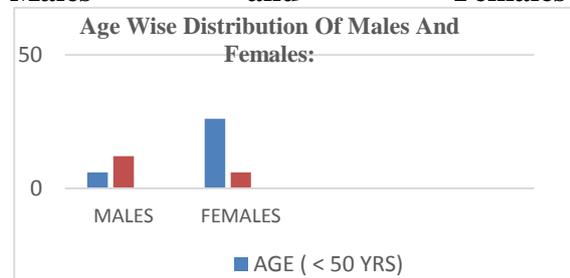
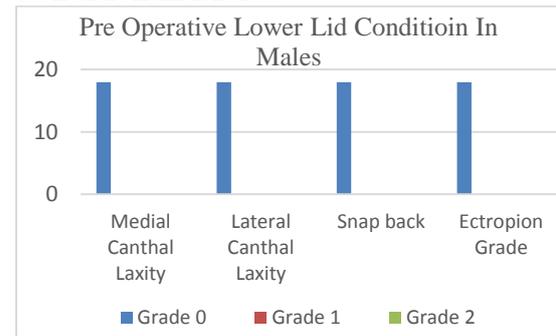


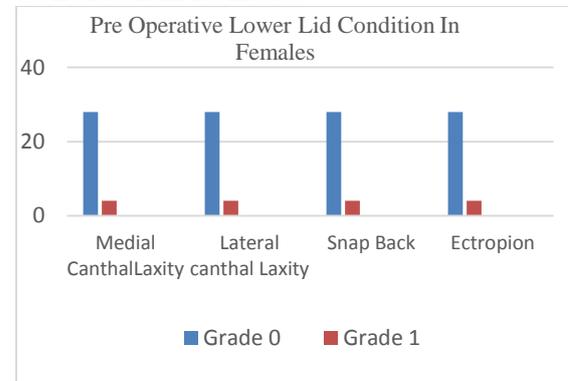
Fig. 1 shows that of 18 males 12 were above the age of 50 years (66%) and 6 were 50 years or less (33%). Of 32 females , 26 were of age more than 50 years (81.25%) and 6 were of age 50 years or less (18.75%).

Figure 2: Pre-Operative Lower Lid Condition in Males



The above figure shows that none of the males had any abnormal grades of snap back , medial and lateral canthal laxity and ectropion pre operatively. All the lower lid puncta was in normal position and well apposed.

Figure 3: Pre Operative Lower Lid Condition in Females



The above figure shows that out of 32 females 28 females had all the parameters of their lower lids under normal limits and so had no ectropion. Only 4 patients had grade 1 severity of the medial canthal and lateral canthal laxity with a grade 1 on snap back test and an everted lower puncta. So 4 out of 32 females had grade 1 ectropion pre- operatively.

All the patients underwent cataract extraction with SICS and following results were obtained on day 1 post operation:

Figure 4: Lower Lid Condition Day 1 Post Op

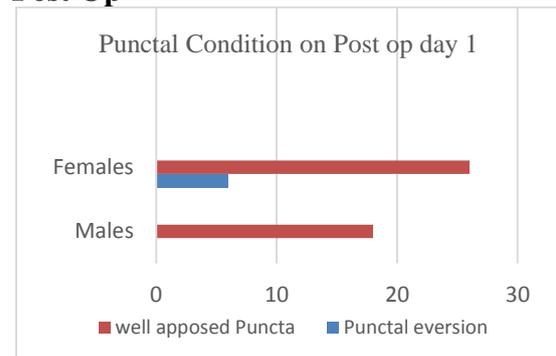


Figure 4 shows that post operatively on day 1 only 2 more female patients had punctal eversion in addition to the 4 females who had grade 1 ectropion pre operatively. None of the males had any lid abnormality on day 1.

Figure 5 : Post Op Lower Lid Condition on Day 7 and 15:

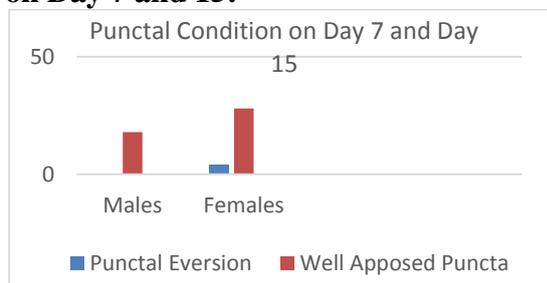


Figure 5: On post operative day 7 and 15 , only 4 out of 32 females had punctal eversion and grade 1 severity of other parameters like medial and lateral canthal laxity , snap back test. All the males had these lower lid parameters under normal limits. The 4 females were the same who had grade 1 ectropion pre operatively. The 2 females who developed punctaleversion on day 1 post op recovered and had their punctae well apposed on day 7 and 15 post op.

CONCLUSION

The above analysis shows that all the females who had pre operativeectropion were over the age of 50 years that too more than 70 years.

The 2 females who developed post operativepunctal eversion on day 1 were also more than 70 years of age and gradually their punctae became well apposed on following visits.

None of the males had any pre operative abnormality in the set parameters of lower lid assessment pre operatively and post operatively.

Hence following conclusions can be drawn from this study:

- The development of ectropion in adults is an involuntional phenomenon and is dependent highly on the age related strength of the lower lid muscles and the canthal tendons.
- Use of instruments like universal lid speculum or wire speculum and peribulbaranaesthesia have no significant effect on the development of new onset

ectropion in patients undergoing any intra ocular procedure, though it may cause some temporary changes which are insignificant.

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