

ORIGINAL ARTICLE

Incidence of Complication of Ectropion and Entropion in Transconjunctival and Subciliary Approach for Treatment of ZMC FractureMUHAMMAD AHSAN BHATTI¹, ERUM RIAZ², AFIFA RAZI³, SUFYAN AHMED⁴, FAIZA AHSAN⁵, RUTABA NADEEM⁶¹MCPS-Resident, Department of Oral Surgery, Bhatti Dental Clinic²Post-graduate resident (FCPS), Department of Oral and maxillofacial surgery, Foundation University College of dentistry and hospital, Islamabad³Associate professor, Department of Oral Medicine, Ziauddin College of Dentistry, Karachi⁴Associate professor, Department of Oral Maxillofacial surgery, Karachi Medical & Dental College- Abbasi Saheed Hospital, Karachi⁵Post-graduation resident (FCPS), Department of Orthodontics, Bhatti Dental Clinic⁶General Dentist, Bhatti Dental ClinicCorresponding author: Muhammad Ahsan Bhatti, Email: Ahsanb72@gmail.com**ABSTRACT****Objectives:** The purpose of the study was to assess the frequencies of problems associated with ectropion and entropion whether the subciliary or transconjunctival technique is employed to repair ZMC fractures.**Methodology:** 50 patients with ZMC fractures who underwent surgical treatment in Abbottabad's Ayub Medical College and Teaching Hospitals in 2021–2022 were included in this prospective hospital-based research. Pure ZMC Fractures were required for inclusion, while prior lid laxity, prevalence of trauma-related lid abnormalities, and pan face fractures were required for exclusion.**Results:** 50 patients in all were engaged over the study's time frame; 28 patients received surgery using the sub ciliary route, with a mean delay of 11.25 days amongst the trauma & the operation, & 22 patients' used the trans conjunctival method, with a mean delay of 30.60 days. Twelve of the patients with ectropion were men and two were women. Men made up both of the entropion patients. Male patients made up more of the sub ciliary approach group (82%, 22/28) than female patients (18%, 6/28). 14% of patients (3/22) in the transconjunctival approach group were female, whereas 97% (19/22) were male. The gender distribution of the patients in the two clusters did not vary statistically significantly ($p=0.12$).**Conclusion:** In terms of postoperative issues like entropion and ectropion, the study's findings revealed that there is no discernible variance amongst the transconjunctival technique and the subciliary technique. It was challenging to draw any conclusions from this study's findings due to the time and patient constraints. Hence, it is advised to repeat the study with a bigger sample size in mandate to obtain more reliable results.**Keywords:** Transconjunctival approach, Subciliary approach, Road traffic accident (Rta)**INTRODUCTION**

The recent past has seen a number of physical wounds, including maxillofacial trauma, caused by stabbing, social fury, RTAs, career disasters, and sports injuries.¹ According to one study, road traffic accidents are the main reason of maxillofacial fractures in poor nations, whereas personal viciousness is the main factor in wealthy nations.² A third of all wounded patients have some kind of injury to the maxillofacial region, one of the most significant anatomical sites in terms of aesthetics and function.³ Breakages in this location can result in major issues and negative worries for patients because it is one of the body's most prone areas.⁴ The primary social, environmental, & cultural factors differ from one nation to the next and even in a single country when it comes to the etiology of maxillofacial injuries.⁵ It is commonly established that drug use and maxillofacial injuries are related.³

Since the maxillofacial region is so close to the brain and other essential organs, treating maxillofacial injuries is extremely important. Due to the zygomaticomaxillary complex's (ZMC) projecting position in the face bone, ZMC fractures are the second most frequent facial fractures after nasal fractures.⁵ These fractures typically occur in the later years of life and are 4x more common in males than in women. Around 4% of these fractures are joint ZMC fractures, which are uncommon.⁶ ZMC fractures can impair face contour, divert attention, limit ocular movement, and limit mouth function.⁷ Hematoma, dehiscence, lymphedema, seroma, retro bulbar hemorrhage, ectropion, a shortening of the lower eyelid, diplopia, entropion, blindness, exophthalmos, implant infection, & infraorbital nerve abnormalities are the most frequent challenges in the therapy of ZMC fractures.⁸

Ectropion is a little (mild), moderate, and severe outward twisting of the inferior eyelid.⁹ Grade 1 ectropion is defined as a low degree of twisting of the eyelid from the globe, grade 2 ectropion as a degree of curling of the eyelid from the globe coupled with a vertical constriction of the lower eyelid, and grade 3 ectropion as a degree of complete eversion (grade 3). Time and light acupressure can help with mild and moderate degrees of ectropion, but surgery is required to address extreme cases.¹⁰ According to several research, the frequency of ectropion using the

sub ciliary technique and skin muscle dissection ranges from 7% to 19%. 8-10 Additionally, it has been demonstrated that elderly individuals are more prone to ectropion. 11

This study compared the occurrence rates of problems associated with ectropion and entropion when ZMC fractures were treated using the transconjunctival or subciliary technique.

METHODOLOGY

50 patients with ZMC fractures who underwent surgical treatment in Abbottabad's Ayub Medical College and Teaching Hospitals in 2021–2022 were included in this prospective hospital-based research. Pure ZMC Fracture was required for inclusion, while antecedent lid laxity, prevalence of trauma-related lid abnormalities, and pan face fractures were required for exclusion. In the Hazara division, AMC is the sole referral and teaching hospital. Each person who met the requirements for participation signed the permission form on their behalf or on behalf of a guardian or attendant.

The study was conducted under IRB of AMC permission. One oral and maxillofacial surgeon worked on the patients utilizing either a transconjunctival or subciliary technique. The skin incision used in this study's subciliary approach extends across the whole length of the lower eyelid and is located 2 mm below its grey line. A 1 to 1.5 cm incision might also be made in the pucker next to the lateral canthal ligament. The transconjunctival approach, which has a superior aesthetic advantage than other conventional techniques, was employed in conjunction with lateral canthotomy and a retro septal incision. A lateral canthotomy was performed on each patient in this group. Three catgut sutures were used to close the conjunctiva at the conclusion of the procedure utilizing this technique. All patients in the group of transconjunctival had surgery with suspension sutures; hence, lateral canthus and zygomaticus major suspensions were employed in this group. With the exception of three patients who didn't need a suspension suture, all patients in the subciliary group had just zygomaticus major suspension.

The prevalence of ectropion and entropion as well as several typical issues with transconjunctival and subciliary clutches were

linked by the surgeon's observation of the patients one month and five months after surgery. The lower eyelid was precisely inspected throughout these sessions, and when the patient's head posture was correctly adjusted, the frontal picture was arranged and saved for evaluation during the subsequent appointment. Patient stance was firmly discussed in accordance with the current categorization in expressions of the presentation and severity of ectropion and entropion. The acquired data was entered into the SPSS-25 and assessed. The data were labelled with means and standard deviations, and the chi-square test was performed to link the incidences of entropion and ectropion in the two examined surgical techniques. Statistics were deemed significant if P 0.05.

RESULTS

50 patients in all were engaged over the study's time frame; 28 patients received surgery using the sub ciliary route, with a mean delay of 11.25 days among the trauma & the operation, & 22 patients used the trans conjunctival method, with a mean delay of 30.60 days. Twelve of the patients with ectropion were men and two were women. Men made up both of the entropion patients. Male patients made up more of the sub ciliary approach group (82%, 22/28) than female patients (18%, 6/28). 14% of patients (3/22) in the transconjunctival approach group were female, whereas 97% (19/22) were male. The gender distribution of the patients in the two groups did not differ statistically significantly (p=0.12).

Patients in the subciliary group ranged in age from 14 years old to 74 years old, with a mean age of 33.5 +13.1 years. The patients in the transconjunctival group ranged in age from 18 to 53, with a mean age of 318 years, patients with entropion ranged in age from 21 to 33, whereas those with ectropion were all between the ages of 15 and 37. These findings indicate that the risk of these two problems does not rise with age. Among the patients in this study, RTA (49%) and interpersonal violence (31%) as well as tumbling from a height (9%) were the most frequent trauma-causing events. Seven incidences of ectropion in patients were brought on by an RTA, four by a motorcycle accident, and two by interpersonal assault. Patients with entropion had similar causes: RTA in two cases and interpersonal violence in three cases. Seven cases of ectropion had simple trauma, while one case involved comminuted trauma. Simple trauma was more common than comminuted trauma in the subciliary (93%, 26/28) and transconjunctival (86.5%, 19/22) groups; simple trauma was seen in both patients with entropion. Regarding the kind of trauma, there was no discernible difference among the two groups (P=0.1). Table 1 shows the frequency of ectropion and entropion in the two examined clusters after one month and five months following surgery (Table 2).

Table 1: Ectropion incidence rates at one month and five months following surgery

Types of incision	Without ectropion	Grade 1	Grade 2	Total	Sig.
	N(%)	N(%)	N(%)	N(%)	
Transconjunctival (1 month after surgery)	19(86.5%)	2(9%)	1(4.5%)	22(100%)	0.1
Subciliary (1 month after surgery)	26(93%)	1(3.5%)	1(3.5%)	28(100%)	
Total (1 month after surgery)	45(90%)	3(6%)	2(4%)	50(100%)	
Transconjunctival (5 month after surgery)	19(86.5%)	2(9%)	1(4.5%)	22(100%)	0.15
Subciliary (5 month after surgery)	24(85.8%)	2(7.1%)	2(7.1%)	28	
Total (5 month after surgery)	43(86%)	4(8%)	3(6%)	50(100%)	

Table 2: Entropion incidence rates at one month and five months following surgery

Types of incision	Without ectropion	Grade 1	Grade 2	Total	Sig.
	N(%)	N(%)	N(%)	N(%)	
Transconjunctival (1 month after surgery)	21(95.5%)	1(4.5%)	0(0%)	22(100%)	0.22
Subciliary (1 month after surgery)	28(100%)	0(0%)	0(0%)	28(100%)	
Total (1 month after surgery)	49(98%)	1(2%)	0(0%)	50(100%)	
Transconjunctival (5 month after surgery)	20(91%)	2(9%)	0(0%)	22(100%)	0.35
Subciliary (5 month after surgery)	28(100%)	0(0%)	0(0%)	28(100%)	
Total (5 month after surgery)	48(96%)	2(4%)	0(0%)	50(100%)	

In terms of the time among trauma & surgery (P=0.06), hx of postoperative epiphora (P= 0.048), hx of massage at the site of surgery (P=0.140), insertion of porex instead of bone during surgery (P= 0.91), scleral show (P= 0.304), and use of suspension sutures during surgery (P= 0.057), there were no significant differences among the two clusters.

Table 3: Postoperative epiphora frequency, history of massage, porex and scleral show

	Type of incision	Total N	Sig.
	Postoperative epiphora	Transconjunctival Subciliary	
History of massage	Transconjunctival Subciliary	16 12	0.14
Insertion of porex	Transconjunctival Subciliary	40 32	
scleral show	Transconjunctival Subciliary	17 11	0.304

DISCUSSION

According to this study's findings, men are more vulnerable to trauma than women, which is in line with research by Champion et al.¹² and Clarke et al.¹³ The point that persons at this stage of life are more tangled than others in high threat employment, sports activities, utilizing high-speed automobiles & are more communally active may be the cause of the increased prevalence of maxillofacial fractures in the third decade of life.¹⁰ Similar to our study findings, automobile accidents have been identified as the most frequent cause of fractures in the majority of investigations, including those conducted in Iran¹⁴, India¹⁵, China¹⁷, and the present study. The prevalence of ectropion and entropion among the transconjunctival and subciliary surgical cluster was not significantly different in the current investigation.

Scleral show occurred 17%, 11%, and 14% more frequently in the transconjunctival cluster, subciliary cluster, & all patients, respectively. The frequency of persistent scleral show was 28% and 3% in the subciliary & transconjunctival group respectively in the research by Bartsich et al.¹⁸ Subciliary, sub-tarsal, and infraorbital surgical techniques were all compared by Crosara et al. in their study¹⁹. Similar to the current findings, their findings indicated that there was no statistically significant difference in the frequencies of ectropion, scleral show, or chronic edoema amongst the three groups.

The use of suspension sutures in the transconjunctival approach and in all but three patients in the subciliary cluster was a noteworthy finding of the current investigation. As a result, there was no discernible difference between the two surgical techniques under study when it came to employing suspension sutures to prevent ectropion and entropion. This outcome resembles that of Zhou et al.²⁰ Patients' who used suspension stitches didn't have

more problems on average. In the existing investigation, there was no discernible change in the occurrence rates of entropion and ectropion in orbital reconstruction due to the usage of porex.

CONCLUSION

In terms of postoperative issues like entropion and ectropion, the study's findings disclosed that there is no discernible difference among the transconjunctival approach & the subciliary procedure. It was challenging to draw any conclusions from this study's findings due to the time and patient constraints. Thus, it is advised to repeat the study with a bigger sample size in mandate to obtain more reliable results.

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