

Modified Operative Technique for Involutional Lower Lid Entropion

Daliborka Miletić¹, Biljana Kuzmanović Elabjer¹, Mladen Bušić¹, Esmat Elabjer² and Damir Bosnar¹

¹ University of Zagreb, »Sveti Duh« University Hospital, Eye Clinic, Zagreb, Croatia

² University of Zagreb, »Sestre Milosrdnice« University Hospital Centre, Traumatology Clinic, Zagreb, Croatia

ABSTRACT

The paper presents a modified operative technique for involutional lower lid entropion. The prospective noncomparative study of 101 lower eyelids of 88 patients undergoing surgery for involutional lower lid entropion was conducted in period from September 2005 until March 2012. Indication for the surgery was entropion, previously untreated, with moderate to severe horizontal lid laxity and no clinically relevant medial and lateral canthal tendon laxity. The operative technique is our modification of Quickert and Jones procedures. Photo was taken preoperatively and one month after surgery. Clinical follow-up was at 7th postoperative day, one month and six months after surgery and in case of the recurrence. Long-term follow-up was obtained via telephone interviews. There were 44 male (50%) and 44 female (50%) patients included in the study. The age of patients was in average 73.27±8.1 years (range 53–90 years). Early postoperative complication was localized lid swelling found in two patients starting 4–6 weeks postoperatively at the area of absorbable suture. It resolved spontaneously in two and three weeks respectively. There was recurrence of entropion in 11 eyelids (10.89%) of 10 patients. The mean interval between primary surgery and the recurrence was 17.45±14.84 months (range 4–48 months). In these eyelids Jones procedure was performed. However in four eyelids of four patients from the recurrent group an additional surgery needed to be performed after 6, 12, 12 and 17 months respectively. Our modification of surgical treatment for involutional lower lid entropion was effective in 89.11% of eyelids. Complications of the procedure were scarce.

Key words: *involutional lower lid entropion, Quickert procedure, Jones procedure*

Introduction

Involutional entropion is one of the most common lower lid malpositions in the elderly¹. It is caused by horizontal and vertical lid laxity². Non-surgical medical treatment is temporary and reserved mostly for incipient entropion³. Many surgical techniques have been described to correct entropion^{4–20}. One large study²¹ of 583 surgical procedures of entropion surgery showed that in 99% entropion was cured when eyelid was shorten comparing to 78% of cure if the lid was not shorten.

In dealing with involutional lower lid entropion we are guided by the algorithm described in Mr Collin's Manual². However, we have modified his approach combining the two techniques into a single primary procedure.

Material and Methods

The prospective noncomparative study of 101 eyelids of 88 patients undergoing surgery for involutional lower lid entropion was conducted at University Eye Clinic, »Sveti Duh« University Hospital, Zagreb, Croatia, in period from September 2005 until March 2012. Patients were chosen randomly by sex. Indication for the surgery was entropion, previously untreated, with moderate to severe lid laxity and no clinically relevant medial and lateral canthal tendon laxity (Figures 1–4). The surgery was performed in local anaesthesia as unilateral procedure. Operation is our modification of Quickert and Jones procedure that were combined into the single surgery: first, horizontal line was drawn 4 mm bellow the lid margin. Local anaesthetic (2% lidocaine with epinephrine 1:100 000,



Fig. 1. Preoperative photo of a 74-year-old female with the left lower lid involuntional entropion.

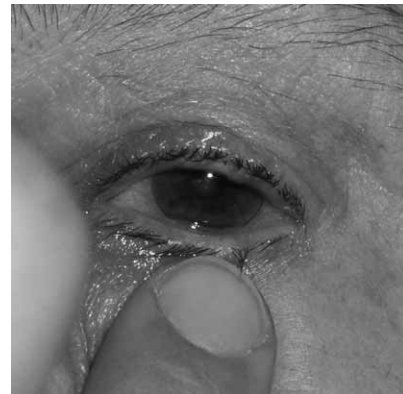


Fig. 4. No clinically relevant lateral canthal tendon laxity.

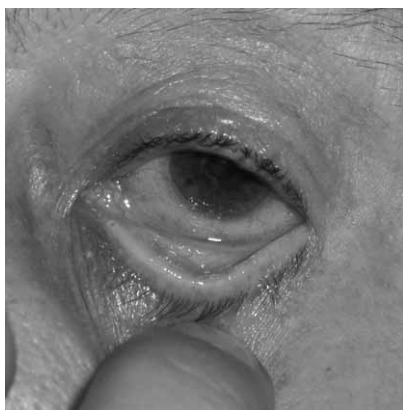


Fig. 2. Severe lower lid horizontal laxity.



Fig. 3. No clinically relevant medial canthal tendon laxity.

mm medial to the lateral canthus. By overlapping the two parts of the lid the size of the pentagonal excision was estimated. The lid margin was then sutured in layers. Three preplaced tarsal plate-retractor sutures were tightened (Figure 7). The dog-ear of the skin at the lateral wound edge was excised and the skin closed with



Fig. 5. The cut made 4mm below the lid margin deep to the submuscular plane.

2 ml) was injected subcutaneously at the lower lid. The cut was made at the level of the drawn horizontal line deep to the submuscular plane and the lower tarsal edge cleaned (Figure 5). The septum was opened and the retractor exposed. Three sutures, one 6/0 nylon and two 6/0 absorbable sutures, were preplaced from the lower edge of tarsal plate to the retractor. Each suture went two times through the retractor as a plication. Horizontal lid laxity was then addressed by shortening the lid (Figure 6). A cut was made at the right angle to the lid margin 5

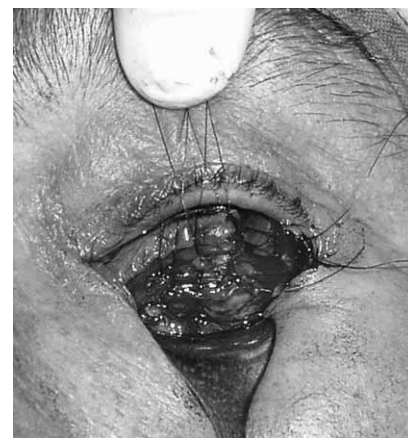


Fig. 6. Three sutures preplaced from the lower edge of tarsal plate to the retractor and lid shortened.

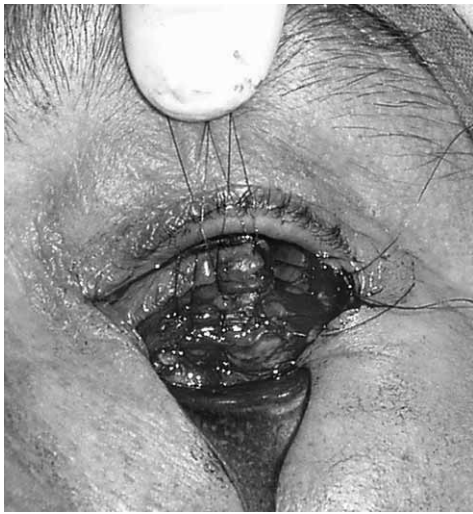


Fig. 7. Three preplaced tarsal plate-retractor sutures tightened and the lid defect sutured, intraoperative photo.



Fig. 8. Note the lower retractor function achieved at the end of the surgery, intraoperative photo.

three 6/0 absorbable skin-retractor-skin sutures (Figure 8). The eye was closed for the day and cold compresses applied 4 times a day for 4 postoperative days. Antibiotic drops were prescribed for 7 postoperative days. Sutures were taken out 7th postoperative day. Photo was taken preoperatively and one month after surgery. Clinic follow-up was at 7th postoperative day, one month and six months after surgery and in case of the recurrence. Long-term follow-up was obtained via telephone interviews.

Results

The age of patients was in average 73.27 ± 8.1 years (range 53–90 years). There were 44 male (50%) and 44 female (50%) patients. The average age of male was 71.52 ± 7.98 years (range 53–85 years) and the female 75.02 ± 7.9 years (range 58–90 years). The unilateral entropion was recorded in 47 (62.67%) right eyelids and 28 (37.33%) left eyelids. It was bilateral in 13 patients (14.77%). Early postoperative complication was localized lid swelling found

4–6 weeks postoperatively at the area of absorbable suture. It resolved spontaneously in two and three weeks respectively. The recurrence of entropion was noticed in 11 eyelids (10.89%) of the 10 patients. The mean interval between primary surgery and the recurrence was 17.45 ± 14.84 months (range 4–48 months). In these eyelids Jones procedure was performed. However in four eyelids of four patients from the recurrent group an additional surgery needed to be performed: Jones procedure in two patients and our modified technique in two patients 12, 17, 6 and 12 months respectively following the correction of the first recurrence.

Discussion and Conclusion

Boboridis et al.²² reviewed surgical interventions on involuntional lower lid entropion published in literature to assess whether any method is superior to the others. The superiority of the combined approach on specific surgical procedures was supported by many uncontrolled studies and only one randomised controlled trial¹. Quickert procedure consists of transverse lid split, everting sutures and horizontal lid shortening^{2,23}. Lower lid retractor is identified and fixated to the tarsal plate by three absorbable sutures². In case of excessively lax retractor when everting sutures will not tighten it or disinsertion occurs, the recurrence of entropion is likely to happen. To correct it plication of lower lid retractor is necessary – Jones type procedure². Combination of these two techniques has been described before²⁴. Our modified technique merges them into a single primary surgery. It includes exposing and plication of the lower lid retractor, use of both absorbable and non-absorbable sutures and pentagonal horizontal shortening of the lower lid. Instead of taking just a bite of the retractor to fixate it to the lower edge of the tarsal plate, retractor is exposed and plicated. Going in and out of the retractor more than once will tighten the retractor more evenly and create multiple places of contact between retractor and the tarsal plate. An absorbable suture enhances the scar formation and non-absorbable prevents the late failure. The knots are hidden under the pretarsal orbicularis muscle to allow the non-absorbable suture to stay permanently in the tissue. The horizontal shortening is performed in the pentagonal manner under the open sky when the skin-muscle flap is retracted. The two parts of the lid are sutured under the direct visualisation of the tarsal plate. Three absorbable sutures are used to restore the lower lid skin crease. The procedure lasts only half an hour and the scarring is minimal since it is usually hidden within one of the lower lid natural wrinkles.

Rate of recurrence is variable depending on surgery type and duration of follow-up^{6,15,21}. The average interval between the primary surgery and the recurrence in our study was 17.45 months. However the range was 4–48 months. Longer you follow the patient recurrence is more likely to be recorded since by definition involuntional lid changes are progressive²³. Having in mind a long follow-up of up to seven years we consider our

10.89% of recurrence comparable to those in literature. In four of 11 eyelids entropion recurred more than once. In two eyelids retractor plication was curable. In two there was clinically significant horizontal eyelid laxity that needed to be addressed again. Our modified procedure was performed the second time on the same eyelids without complications.

Dealing with the oculoplastic pathology on daily bases necessitates us to adjust established techniques to our needs in order to achieve satisfactory functional and cosmetic results^{25,26}. Our modification of surgical treatment for involutinal lower lid entropion was effective in 89.11% of eyelids in the studied population. Complications of the procedure were scarce.

REFERENCES

1. WRIGHT M, BELL D, SCOTT C, LEATHERBARROW B, Br J Ophthalmol, 83 (1999) 1060. DOI: 10.1136/bjo.83.9.1060. — 2. COLLIN JRO: A manual of systematic eyelid surgery. (Churchill Livingstone, Edinburgh London Melbourne and New York, 1989) 7. — 3. HOH HB, STEEL D, POTTS MJ, HARRAD RA, Orbit, 14 (1995) 131. DOI: 10.3109/01676839509150044. — 4. EL-KASABY HT, Br J Ophthalmol, 76 (1992) 532. DOI: 10.1136/bjo.76.9.532. — 5. PARK MS, CHI MJ, BAEK SH, Ophthalmologica, 220 (2006) 327. DOI: 10.1159/000094624. — 6. OLVER J, BARNES JA, Ophthalmology, 107 (2000) 1982. DOI: 10.1016/S0161-6420(00)00358-4. — 7. ROUGRAFF PM, TSE DT, JOHNSON TE, FEUER W, Ophthal Plast Reconstr Surg, 17 (2001) 281. DOI: 10.1097/00002341-200107000-00008. — 8. QUIST LH, Can J Ophthalmol, 37 (2002) 238. — 9. HO SF, PHERWANI A, ELSHERBINY SM, REUSER T, Ophthal Plast Reconstr Surg, 21 (2005) 345. — 10. BARNES JA, BUNCE C, OLVER JM, Ophthalmology, 113 (2006) 92. DOI: 10.1016/j.ophtha.2005.06.039. — 11. BEN SIMON GJ, MOLINA M, SCHWARCZ RM, MCCANN JD, GOLDBERG RA, Am J Ophthalmol, 139 (2005) 482. DOI: 10.1016/j.ajo.2004.10.003. — 12. ERB MH, UZCATEGUI N, DRESNER SC, Ophthalmology, 113 (2006) 2351. DOI: 10.1016/j.ophtha.2006.07.034. — 13. COOK T, LUCARELLI MJ, LEMKE BN, DORTZBACH RK, Ophthalmology, 108 (2001) 989. DOI: 10.1016/S0161-6420(01)00552-8. — 14. KHAN SJ, MEYER DR, Ophthalmology, 109 (2002) 2112. DOI: 10.1016/S0161-6420(02)01259-9. — 15. ALTIERI M, KINGSTON AE, BERTAGNO R, ALTIERI G, Can J Ophthalmol, 39 (2004) 650. — 16. BOBORIDIS K, BUNCE C, ROSE GE, Ophthalmology, 107 (2000) 959. — 17. MARABOTTI A, BEDEI A, LANZA G, CARIELLO A, GIANNECCHINI I, Ophthalmologica, 215 (2001) 169. DOI: 10.1159/000050852. — 18. LEIBOVITCH I, Dermatol Surg, 36 (2010) 1412. DOI: 10.1111/j.1524-4725.2010.01650.x. — 19. OLALI C, BURTON V, SAMALILA E, West Afr J Med, 29 (2010) 117. — 20. BALAJI K, BALAJI V, KUMMARARAJ G, J Surg Tech Case Report, 2 (2010) 64. DOI: 10.4103/2006-8808.73616. — 21. ROSE GE, DANKS JJ, Ophthalmology, 106 (1999) 859. DOI: 10.1016/S0161-6420(99)10121-0. — 22. BOBORIDIS KG, BUNCE C, Cochrane Db Syst Rev12 (2011) Art. No.: CD002221. DOI: 10.1002/14651858.CD002221.pub2. — 23. COLLIN JRO, RATHBUN J, Arch Ophthalmol, 96 (1978) 1058. DOI: 10.1001/archophth.1978.03910050578018. — 24. ALLEN LH, Can J Ophthalmol, 26 (1991) 39. — 25. KUZMANOVIĆ ELABJER B, BUŠIĆ M, ELABJER E, BOSNAR D, SEKELJ S, KONĐA KRSTONIJEVIĆ E, Coll Antropol, 33 (2009) 915. — 26. KUZMANOVIĆ ELABJER B, BUŠIĆ M, ELABJER E, Coll Antropol, 32 (2008) 303.

B. Kuzmanović Elabjer

University of Zagreb, »Sveti Duh« University Hospital, Eye Clinic, Sveti Duh 64, 10 000 Zagreb, Croatia
e-mail: belabjer@kbsd.hr

MODIFICIRANA METODA KIRURŠKOG LIJEČENJA INVOLUTIVNOG ENTROPIJA DONJE VJEĐE

SAŽETAK

Rad prikazuje modificiranu metodu kirurškog liječenja involutivnog entropija donje vjeđe. U periodu od rujna 2005. do ožujka 2012. godine provedena je prospektivna nekomparativna studija na 101 donjoj vjeđi od 88 bolesnika kod kojih je operiran involutivni entropij. Indikacija za operaciju je bio prethodno neliječeni involutivni entropij s klinički značajnom horizontalnom labavošću vjeđe, a bez klinički relevantne labavosti medijalne i lateralne kantalne tetive. Operacija je naša modifikacija kirurških tehnika po Quickert-u i Jones-u, koje su spojene u jedan zahvat. Fotodokumentacija je učinjena dan i mjesec dana postoperativno. Bolesnici su klinički kontrolirani sedam dana, mjesec dana i šest mjeseci nakon operacije te kasnije u slučaju pojave recidiva. Dugoročno praćenje je bilo telefonskim intervjuom. U studiju su bila uključena 44 muškaraca (50%) i 44 žene (50%). Prosječna starost bolesnika je bila 73,27±8,1 godine (raspon 53–90 godina). Kao rana postoperativna komplikacija razvio se lokalizirani edem vjeđe u dvoje bolesnika 4–6 tjedana postoperativno na mjestu resorptivnog šava, koji se spontano povukao nakon 2–3 tjedna. Entropij se ponovno javio na 11 vjeđa (10,89%) u 10 bolesnika. Prosječno vrijeme između operativnog zahvata i pojave recidiva je bilo 17,45±14,84 mjeseci (raspon 4–48 mjeseci). U svih bolesnika je entropij reoperiran zahvatom po Jones-u. Međutim, na četiri vjeđe od 4 bolesnika iz ove skupine je učinjena dodatna reoperacija nakon 6, 12, 12 i 17 mjeseci. Na praćenju populaciji, naša modifikacija kirurškog liječenja involutivnog entropija donje vjeđe bila je učinkovita u 89,11% operiranih vjeđa. Komplikacije su bile vrlo rijetke.