



Delayed Removal of Temporary Non-incisional Silk Suture in Senile Entropion; a Simple Method for Long-time Relief

Gholamhossein Yaghoobi^{1*} and Behrouz Heydari²

¹Department of Ophthalmology, Valiasr Hospital, Birjand University of Medical Sciences, Social Determinant Health Research Center, Birjand, Iran.

²Department of Ophthalmology, Birjand University of Medical Science, Ghafari St, Birjand, Iran.

Authors' contributions

This work was carried out in collaboration between all authors. Author GY designed the study, wrote the protocol, and wrote the first draft of the manuscript. Author BH managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/OR/2015/16173

Editor(s):

(1) Ahmad M Mansour, Department of Ophthalmology, American University of Beirut, Lebanon.

Reviewers:

(1) Anonymous, Sevket Yilmaz Resarch and Training Hospital, Turkey.

(2) Elizabeth Awoyesuku, Dept. of Ophthalmology, University of Port Harcourt, Nigeria.

Complete Peer review History: <http://www.sciencedomain.org/review-history.php?id=1023&id=23&aid=9552>

Original Research Article

Received 13th January 2015
Accepted 7th February 2015
Published 2nd June 2015

ABSTRACT

Purpose: To assess the long standing effects of transverse lid-everting silk suture in senile entropion.

Methods: Eight patients (9 eyelids) who had only senile entropion participated in this prospective study. The lower lid had retractor laxity and upward migration of the pereseptal orbicularis muscle. The two Quickert-Rathbun silk suture is easily placed under local anesthesia. This is achieved with topical administration of tetracaine drops and subcutaneous infiltration of 2% lidocaine. The patient instilled topical bethamethasone and chloramphenicol every six hour for one week. All patients were followed up regularly at 1 week, 8 weeks, 16 weeks and then, every year for eye lid position (suture was removed after 12 weeks).

Results: Except for one patient, the others had good lid position and no symptoms of corneal discomfort during the three months postoperative period. The other patient developed stitch abscess and responded to medical treatment and early removal of the suture.

Conclusion: Although transverse lid everting suture has been used as a temporary measure in

*Corresponding author: E-mail: Yaqubig@yahoo.com;

treatment of senile entropion, long standing three months silk lid sutures have been shown to have more permanent effect.
The late removal of suture showed long lasting effects and cost-effectiveness as a simple outpatient procedure, especially in debilitated patients.

Keywords: Senile entropion; transverse lid suture; temporary suture.

1. INTRODUCTION

Involitional entropion is the most common phenomenon and by definition occurs as a result of aging. The lower lid is always affected and there is a combination of lower lid retractor laxity and upward migration of the preseptal orbicularis muscle [1].

Medical management of senile entropion includes (Emollients, bandage, contact lens, botulinum toxin,) which has a temporary effect. But in spite of over a hundred surgical approaches which have been devised to correct involitional entropion, immediate relief can be efficiently brought to the patient with the non-incisional suture technique. Therefore, this should be an ideal and effective operation, with minimum discomfort, rapid recovery and simple enough for trainees, compared with more difficult operations such as a lateral tarsal strip and retractor reattachment [2].

The everting sutures approach in correction of primary or recurrent lower lid involitional entropion was found a simple, successful, long lasting, and cost-effective procedure, by M. Wright et al. [3].

This study was conducted to assess the effects of three months delayed removal of non-incisional silk suture in elderly patients with senile entropion.

2. MATERIALS AND METHODS

A clinical trial treatment was carried out on 9 eyelids (8 patients), undergoing non-incisional lid-everting suture to correct involitional entropion. In this study, patients with only lower lid senile entropion were assessed. The procedure was explained to patients and they signed a consent paper. If they did not accept to participate in the study, they were omitted from the list. Exclusion criteria included a history of previous lower lid surgery other than senile entropion or patients with grade 4 medial canthal tendon laxity by the lateral distraction test.

The main criteria for outcome was lower lid position and changes in lower lid retractor function. In this method, sutures are easily placed under local anesthesia. This is achieved with topical administration of tetracaine drops and subcutaneous infiltration of 2% lidocaine. To place the sutures, the eyelid is pulled from globe with forceps, one needle of double armed suture is passed deep in to the inferior fornix and up through the lid, exiting anteriorly through the skin 2 to 3 millimeters below the lash line. The second needle is passed in the same way, about 5 mm lateral to the first and a knot was tied to correct the lid position. A total of two stitches are placed in each lid, with the most lateral one exiting about 2 mm below the level of the nasal one. The patient instilled topical betamethasone and chloramphenicol every six hour for one week.

To evaluate the immediate results, the patient was asked to look down, which demonstrated appropriate movement of the corrected lid. Suture was removed after three months and the Patients were followed up at 1, 8, 16, week's periods postoperatively and then, they were assessed annually. Successful outcome was long time stability of lid margin without turning in which causes corneal-lash contact. It seems that permanent effect of silk suture was associated with more induced inflammation and scar formation. The data was analyzed by descriptive statistics such as frequency and mean.

3. RESULTS

Most patients had excellent lid position and comfortable eyelid situation as early as post operation or thereafter (Figs. 1,2), except for two patients who developed suture abscess in one case and recurrence of entropion in another one. The stitch abscess responded to oral antibiotics and the recurrence of entropion again underwent repair. (Fig. 3). In Table 1, the other characters and outcomes are also summarized.

The mean age of patients was 69 years old and all patients had lower lid senile entropion. Four eyes had left eyelid entropion and 5 eyes experienced right eyelid entropion. Five

patients were male and other three were female. (One male was bilateral).

Only one male patient developed stitches abscess 7 weeks after entropion repair, which responded to oral cephalosporin in one week.

But the patient again managed by other procedures. Between 0.1 to 10 years (average 4.4 years) follow-up for this technique was associated with recurrence of two more senile entropions.

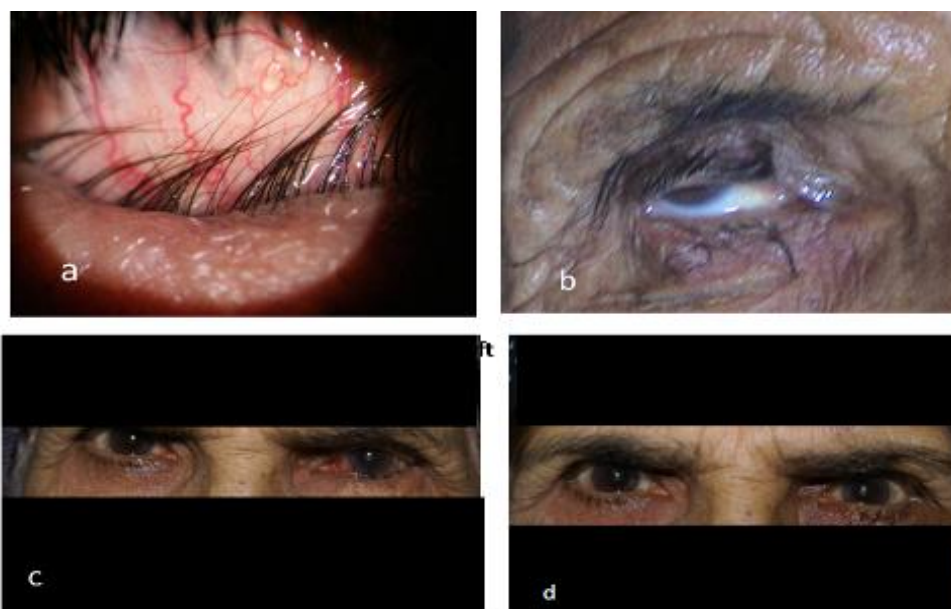


Fig. 1. First case; a, right lower lid entropion before repair, b the day after correction, Second case; c, left lower lid entropion before repair d, post procedure one month thereafter



Fig. 2. (Third) case; a, right lower lid entropion three months after correction, b, 7 years thereafter. Forth bilateral case; c & d before and 5 years after of left lower lid correction

4. DISCUSSION

Non-incisional silk suture has been found to be an effective, easy and temporary procedure which is associated with a high postoperative success rate. The only early complication was stitch abscess in one case that responded to medical treatment. The long term effect was good anatomical and functional corrections which were achieved in 6 eyelides. There are other reports which describe stitch abscess and pyogenic granuloma too [4,5].

Except for one case of reoperation which was managed successfully and one stitch (abscess) which responded to medical treatment and other surgical approach, the lid everting silk suture not only caused temporary relief of symptoms, but also it was associated with long time effects. However, two other cases gradually had late recurrences which again properly managed by this simple approach.



Fig. 3. Stitch indurations and abscess

A study conducted by Scheepers et al. [1] provides strong evidence that success rates at 18 months are higher in patients treated with everting suture and lateral tarsal strip (ES+LTS) procedure compared to ES alone. [2] although many surgical procedures were described with varying long-term success rates for the treatment of entropion, the use of everting sutures alone is advocated by many surgeons because of advantages such as being quick and relatively simple to perform, and also anticoagulation treatment does not need to be omitted compared to more invasive eyelid procedures including anticoagulation.

This study shows long time relief of senile entropion which indicate the important role of the three-month remaining non-incisional silk suture. The surgical approach that Caldato and his colleagues reported, 96.60% success rate was describe in 30 patients with senile entropion who underwent reinsertion of the lower eyelid retractor aponeurosis to the tarsal plate without horizontal shortening or resection of the skin or orbicularis muscle (after 29 months follow-up examination). This study also highlighted the low recurrence rate of senile entropion [6], even though this surgical approach was modified and its results were similar to our study.

Low recurrence rate of entropion is associated with botulinum toxin A. It removes the discomfort symptoms in all patients with improvements in effectivity and acceptability. The mean active duration of the toxin was 70 days. The authors believe that botulinum toxin injection to the lower lid provides a more effective and acceptable interim measurement in relieving lower lid entropion [7].

Table 1. Distribution of age, sex and follow-up outcome

Number	Gender	Age	Lid	Recurrence	Complication	Follow-up Year
1	♀	65	RLL	No	No	5
2	♂	70	RLL	Yes	No	7
3	♂	62	LLL	No	Yes	1
4	♂	60	RLL	No	No	5
5	♀	76	LLL	No	No	5
6	♂	75	LLL	No	No	5
7	♀	75	RLL	No	No	4
8	♀	75	LLL	Yes	No	2.5
9	♂	65	RLL	No	NO	2

RLL=Right Lower Lid; LLL=Left Lower Lid

The other dilemma in the management of involitional entropion was the description provided by Bashour Mounir and Harvey on what John Dalglish and Smith believed that the overriding effect on orbicularis was not an etiologic factor. They conceded that spasm or over-action of the palpebral orbicularis is a real possibility in cases of entropion, and needs further investigation. The temporary improvement of involitional entropion after botulinum toxin injection could be noted as a supporting evidence for this suggestion [8].

There is a trend to find the ideal approach with minimal expense in any field of management that Wright et al. also assessed the long term efficacy of everting suture [9]. I. Leibovitch introduced a minimally invasive single-stitch lateral wedge technique, Tsang S describe this a simple and effective procedure for repairing involitional lower eyelid entropion which is associated with low recurrence and complication rates [10,11].

The most important result of our research was few complication and recurrences in senile entropion, though our patients were 9 eyelids, but compared to the Tsang study, simplicity and outpatients procedures are other characteristic findings of this procedure.

This conclusion can be clearly reached in a comparative study of Boboridis.K, in which 6 of 37 (16%) eyelids had unsatisfactory results after the tendon plication in contrast to 31 of 65(48%) after the wies procedure (more invasion). [12] These data provide strong evidence that in the absence of horizontal shortening of the lower eyelid, a successful outcome is more likely to result from non-incisional silk suture procedure.

5. CONCLUSION

Among many surgical approaches for repair of senile entropion non-incisional silk suture seems to be the simplest and most repeatable procedure, with minimal manipulation of lower lid. It is also an outpatients' procedure that is associated with high postoperative success rate, in comparison to retractor reinsertion or wies procedure. A reduction on suture number (two sutures) and an increase in the bite of suture may play an important role in our study, even though silk suture induced more inflammation. However, a randomized case control study with a larger number of patients is required to evaluate these results.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

ACKNOWLEDGEMENTS

We have acknowledgement of our head nurse Mah Monier Sanaei and the patient who had good coporation in this study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Scheepers MA, Singh R, Ng J, Zuercher D, Gibson A, Bunce C, et al. A randomized controlled trial comparing everting sutures with a lateral tarsal strip for involitional entropion. *Ophthalmology*. 2010;117(2): 352-355.
2. Barnes JA, Bunce C, Olver JM. Simple effective surgery suitable for involitional entropion for the general ophthalmologist, *Ophthalmology*. 2006;113(1):92-96 .
3. Wright M, Bell D, Scott C, Leatherbarrow B. Everting suture correction of lower lid involitional entropion. *Br. J. Ophthalmol*. 1999;83(9):1060-3.
4. Erb MH, Uzcatogui N, Dresner SC, Efficacy and Complication of the Transconjunctival Entropion Repair for Lower Eyelid Involutional entropion. *Ophthalmology*. 2006;113(12):2351-2356.
5. Ben Simon GJ, Molina M, Schwarcz RM, McCann JD, Goldberg RA. Goldberg external (subciliary) vs internal (transconjunctival) iinvolutional entropion repair. *American Journal of Ophthalmology*. 2005;139(3):482-487.
6. Caldato R, Lauande-Pimentel R, Sabrosa NA, Fonseca RA, Paiva RS, Alves MR, José NK. Role of reinsertion of the lower eyelid retractor on involitional entropion. *British Journal of Ophthalmology*. 2000; 84(6):606-608
7. Hoh HB, Steel D, Potts MJ , Harrad RA. The use of botulinum toxin for lower lid entropion, *Nep J. Oph*. 2009;1(1):37-42.

8. Bashour M, Harvey J. Causes of involutional entropion and entropion- age related tarsal changes are the key. Ophthalmic plastic and reconstructive surgery. 2000;16(2):131-141.
9. Wright M, Bell D, Scott C, Leatherbattow B. Everting suture correction of lower lid involutional entropion. Br. J. Ophthalmol. 1999;83(9):1060-3.
10. Leibovitch I, Lateral Wedge Resection: A simple technique for repairing involutional lower eyelid entropion dermatologic surgery. 2010;36(9):1412–1418.
11. Tsang S, Yau GS, Lee JW, Chu AT, Yuen CY. Surgical outcome of involutional lower eyelid entropion correction using transcutaneous everting sutures in Chinese patients. Int Ophthalmol. 2014; 34(4):865-8. DOI: 10.1007/s10792-013-9893-5. Epub 2013 Dec 31.
12. Boboridi K, Bunce C, Rose GE. A comparative study of two procedures for repair of involutional lower lid entropion. Ophthalmology. 2000;107(5): 959-61.

© 2015 Yaghoobi and Heydari; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<http://www.sciencedomain.org/review-history.php?iid=1023&id=23&aid=9552>