

Original Research Article

Three Months Long Non - Incisional Silk Suture Technique, a Simple Method for Long-time Relief of Senile Entropion

Abstract:

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

Methods:

Eight patients (9 eyelids) who had senile entropion participated in this study. 2 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. All patients followed up the treatment regularly, for 1 week, for 8 weeks, for 16 weeks and then, every year (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 postoperation. One patient showed stitch abscesses and responded to medical treatment and early removal suture.

Conclusion:

Although transverse lid everting suture was used as a temporary measure, three months remaining silk sutures have the more permanent effect.

The late removal of suture showed long lasting effects and cost-effectiveness as an simple procedure outpatient surgery, especially in debilitated patients.

Key words: Senile entropion,Surgical technique,Temporary suture

Introduction:

Involutional entropion is the most common phenomenon and by definition occurs as a result of aging. It always affects the lower lid and is the result of a combination of laxity of lower lid retractors, upward migration of the pereseptal orbicularis muscle. [1]

29 Medical management of senile entropion including (Emollents,bandage, contact lens,
30 botulinum toxin , ...) has a temporary effect and with over a hundred procedures which
31 have been devised to correct involutional entropion, immediate relief can be efficiently
32 brought to the patient with the non-incisional suture technique. Therefore, this should be an
33 ideal and effective operation, with minimum discomfort, rapid recovery and simple enough
34 for trainees, compared with more difficult operations such as a lateral tarsal strip and retractor
35 reattachment. [2]

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

39 This study was conducted to assess the effects of removal delay of temporary non-incisional
40 silk suture in aging and uncooperative patients with senile entropion.

41 **Materials and Methods:**

42 A clinical trial treatment was carried out on 9 eyelids (8 patients), undergoing non-incisional
43 everting suture to correct involutional entropion. In this study, the patients were selected
44 preoperatively who their lid changes resulted from age alone and not from cicatricial or
45 congenital causes. The method was explained to patients and they signed a consent paper. If
46 they did not accept to participate in the study, they were omitted from the list. Exclusion
47 criteria included a history of previous lower lid surgery other than senile entropion or patients
48 with grade 4 medial canthal tendon laxity by the lateral distraction test.

49 The main criteria for outcome was lower lid position and changes in lower lid retractor
50 function. In this method, sutures are easily placed under local anesthesia. This is achieved
51 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. 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.

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. Patients were assessed at 1, 8, 16, weeks 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.

Results:

Most patients had excellent lid position and comfortable eyelid situation as early as post operation or thereafter (figure 1, 2), except for two patients who developed suture abscess during the treatment period and recurrence of entropion, which responded to oral antibiotics.(Figure 3). In table 1, the other characters and outcomes are also summarized.

The mean age of patients was 69. In 10 years, 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 was gradually treated by entropion again and 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.

Discussion:

Non-incisional silk suture was concluded to be an effective, easy and temporary procedure which is associated with a high postoperative success rate. The only early complication was stitch abscesses in one case that was a response to medical treatment. The long term effect

83 was good anatomical and functional corrections which were achieved in 6 eyelides. There are
 84 other reports which describe stitch abscess and pyogenic granuloma too. [4,5]
 85 Except for one case of reoperation which was managed successfully and one stitch abscesses
 86 which was a response to medical treatment, silk suture not only caused temporary relief of
 87 symptoms, but also removed silk suture after three months, resulting in long term effects.
 88 However, two other cases gradually had late recurrences.

89 A study conducted by M.A. Scheepers et.al. provides strong evidence that success rates at
 90 18 months are higher in patients treated with ES+LTS procedure compared to ES alone. [2
 91] Although many surgical procedures were described with varying long-term success rates
 92 for the treatment of entropion, the use of everting sutures (ES) alone is advocated by many
 93 surgeons because of advantages such as being quick and relatively simple to perform, and
 94 also anticoagulation treatment does not need to be omitted compared to more invasive eyelid
 95 procedures including anticoagulation. [1]

96 This study shows the important role of the two months long non-incisional silk suture in this
 97 simple surgical approach. In this simple surgical approach, Caldato and his colleagues
 98 reported 96.60% success rate in 30 patients with senile entropion who underwent reinsertion
 99 of the lower eyelid retractor aponeurosis to the tarsal plate without horizontal shortening or
 100 resection of the skin or orbicularis muscle (after 29 months follow-up examination). This
 101 study also highlighted the low recurrence rate of senile entropion [6] , even though this
 102 surgical approach was modified and its results were near to our study.

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

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

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

But the most important result of this research was recurrences of senile entropion, though our patients were 9 eyelids, compared to this study , simplicity and outpatients procedures are other characteristic findings of this study.

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 be resulted in non-incisional silk suture procedure.

Conclusion: Among many surgical approaches for repair of senile entropies, 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.

References

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- 170 **Figure legend:**
- 171 **Figure 1 First case; a, right lower lid enteropion befor repair, b the day after**
 172 **correction. Second case; c, left lower lid enteropion befor repair d, post procedure one**
 173 **month thereafter.**
- 174 **Figure 2 Thired case; a, right lower lid enteropion three months after correction. b, 7**
 175 **years thereafter .Forth bilateral case; c & D before and early of suturing. E, after 10**
 176 **years of right lower lid correction. F, 5 years of left lower lid everting suture.**
- 177 **Figure 3. stitch indurations and abscess.**

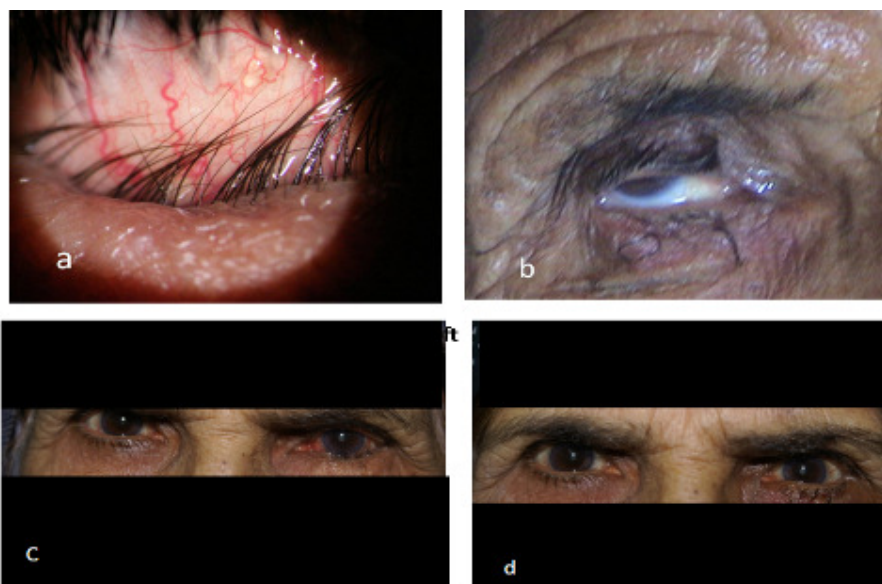


Figure 1 a, right lower lid enteropion befor repair, b the day after correction c, left lower lid enteropion befor repair d, post procedure one month thereafter

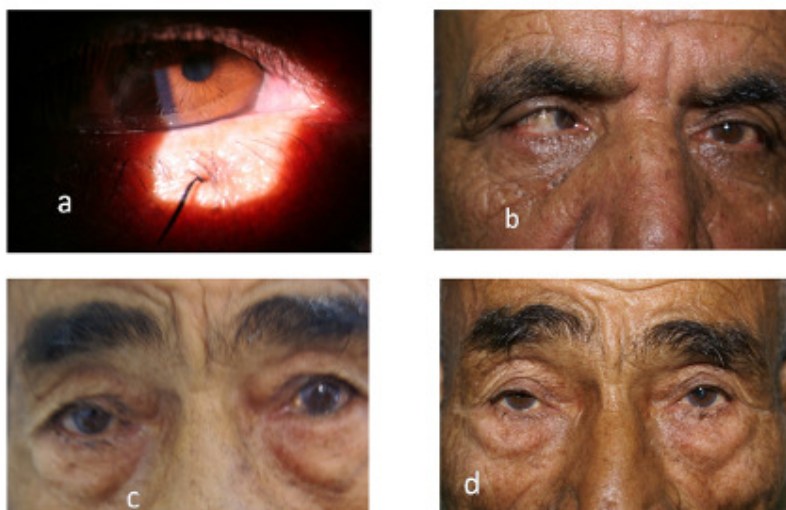


Figure 2 a, right lower lid enteropion three months after correction b, 7 years thereafter c, after 10 years of right lower lid correction d, 5 years of left lower lid everting suture

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Figure 3. stitch indurations and abscess

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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

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RLL=Right Lower Lid; LLL=Left Lower Lid