Tarsal Fracture Operation in Cicatricial Entropion

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Background: *Cicatricial entropion is a common eyelid condition encountered by ophthalmologists. There is a variety of procedures to correct this condition, in which tarsal fracture procedure is one of them. However, recurrence has been a problem and success rate should be calculated.*
Material and Method: *This retrospective non-comparative interventional case series on patients with cicatricial entropion corrected by tarsal fracture technique was conducted at King Chulalongkorn Memorial Hospital between 2003 and 2007. The success rate was evaluated.*
Results: *Most patients were female (81%) with the mean age of 62.2 (SD 20.1) years old. The success rate of tarsal fracture was 74.2%. After the reoperations of the recurrent cases, the success rate reached up to 87.1%.*
Conclusion: *Tarsal fracture is a simple, quickly-performed, and less time-consuming procedure. It should be considered as an initial operation for cicatricial entropion.*

Keywords: *Cicatricial entropion, Tarsal fracture*

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Entropion is a common eye problem caused by a variety of diseases and classified into congenital, involutional, spastic, and cicatricial entropion. Patients inevitably suffer from the inversion of the eyelid margin leading to the foreign body sensation, eye irritation, punctate keratitis, and eventually, corneal ulcer and scar. Cicatricial entropion may be an important cause of significant morbidity and frequently, blindness in developing countries[1]. Numerous surgical procedures have been described for management of cicatricial entropion such as anterior tarsal V-wedge resection[1], tarsotomy and lid margin rotation[2,3], tarsal fracture[4], anterior lamellar recession with buccal mucous membrane graft[5], or hard palate mucous membrane graft[6,7].

However, the few reports have mentioned the success rate of tarsal fracture procedure. The success rate reported by Sodhi was only 28.26%[4]. The present study presented the results of tarsal fracture operation in cicatricial entropion of both upper and lower eyelids.

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Material and Method

The medical records of 26 consecutive patients who presented to one surgeon (ST) at the Department of Ophthalmology, King Chulalongkorn Memorial Hospital were reviewed. The data were gathered between January 2003 and December 2007. Five patients were excluded. Three were excluded because of missing data and two because of loss of follow-up. The remaining 21 patients (31 eyelids) with the diagnosis of cicatricial entropion with tarsal fracture were analyzed. The success was defined as not having eyelashes touch over the cornea. The present study was approved by the institutional ethics committee for retrospective review and using patients' information for research study.

Surgical technique

The affected eyelid was infiltrated with 1-1.5 ml of 1% lidocaine with adrenaline 1:100,000 and 0.5% Tetracaine hydrochloride was dropped into the inferior conjunctival fornix. After local anesthesia and hemostasis were achieved, traction suture was made by sewing 4/0 silk suture at the eyelid margin. A Desmarre retractor was applied to evert the eyelid. An incision was made over the tarsal conjunctiva 4-5 mm away from the eyelid margin using a #15 scalpel blade through the whole thickness of the tarsus. A

double-armed 5/0 Polyglactin 910 suture on a spatula needle (Vicryl 5/0 with needle S-24;Ethicon) was passed into the upper cut edge of the tarsus and out at 2-3 mm away, avoiding exposure of the suture material through the tarsal conjunctival surface (Fig. 1). The needles were then passed over the dorsal surface of the tarsus and out of the skin at 1-2 mm from the eyelid margin. The sutures were tied tightly over the skin as a knot without bolsters (Fig. 2). Additional sutures were performed in the same fashion if needed. At least one knot was used graded on the length of the eyelid to be rotated with a maximum of three knots for the entire lid length. Dicloxacillin (250 mg) was prescribed four times daily with pain killers as needed, topical antibiotics-steroids eyedrop was instilled four times a day and the ointment was applied over the knots three times a day for postoperative care. The sutures were left in place for three weeks. The patients were followed at 1 week, 3 weeks, 3 months and a 6 months.

Fig. 1 A double-armed 5/0 Vicryl suture was passed into the upper cut edge of the left upper eyelid tarsus and out at 2-3 mm away

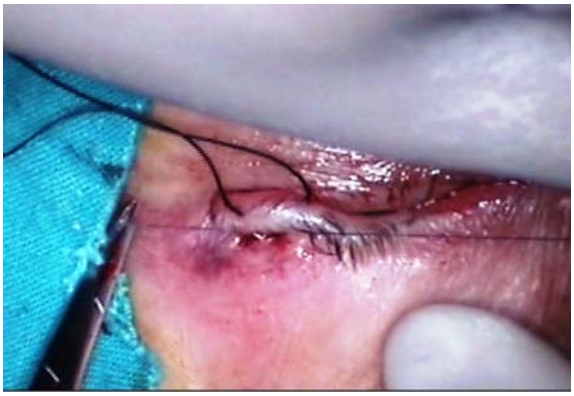

Fig. 2 The sutures were tied tightly over the skin as a knot without bolsters

Results

Of 21 patients (31 eyelids) diagnosed with cicatricial entropion, there were 17 females (81%) and four males. The causes of cicatrization were not investigated in the present study. The age range was 4-82 years old with the mean age of 62.2 years (SD 20.12). Four of 31eyelids were operated on somewhere else with recurrence while 27 eyelids were virgin. The success rate of tarsal fracture technique was 74.2% (23/31 eyelids, in which 20/27 were virgin cases and 3/4 had previous surgeries). Of the eight failure eyelids, one eyelid had a history of previous correction elsewhere while the other seven eyelids were virgin. Contrary to the four eyelids that had previous surgical corrections, the operation of the three eyelids succeeded with this technique. All of the failure cases were at the upper eyelids. The mean duration of recurrence ranged from 1.5 to 9 months with the mean duration of 4.7 months. Four of the eight recurrent eyelids returned for reoperation with success that yielded the overall success rate to 87.1% No complications were found during intraoperative and postoperative periods.

Discussion

Cicatricial entropion has always been a challenging problem for the Oculoplastic surgeons. Many techniques have been described for centuries to overcome the pathophysiologic changes of the disease. Attention was paid on the incision over the scar tissue at the tarsal conjunctival surface itself, or splitting the anterior lamella from the tarsus and making it sturdy in place where it was recessed. Using some sorts of materials to cover the raw surface and prevent the recessed eyelid from migrating down *e.g.*, amniotic membrane[8], acellular human dermal allograft[9], or mucous membrane graft[5]. The logic thoughts of many operations can be created. Nonetheless, in the developing countries with some kind of limitations in finding materials or surgical time to do the operations, it makes it harder to manipulate both patients queue and surgical techniques. The authors' notion was that the tarsal fracture procedure could still have a role at being an initial procedure to the patients. The success rate of this technique was questioned and brought about the present study. This retrospective study showed that the success rate was 74.2% and with the reoperation in the same fashion, it was raised up to 87.1%. As compared to Sodhi, et al, with the success

rate of only 28.26%, the patients were followed for one year and the tarsal fracture technique was deployed to anomalies associated with cicatricial entropion such as defective lid closure, which might affect their results. The recurrence with this technique depended on how severe the inversion of the eyelid was and the vector force the authors created to evert the eyelid. When the eyelid was enormously inverted, there was a possibility of the vector force being closer to a horizontal fashion than inclination, which had less power to pull the eyelid out. The higher tarsal incision closed the upper tarsal border and the lower the knots closed the eyelid margin. Thus, this gave more force to rotate the eyelid outward. However, the knot tightness that determined how much to evert the eyelid should be adjusted aptly to prevent consecutive ectropion. Virtually, the success rate might vary from surgeons to surgeons even with the same technique. The high success rate in the present study reflected how valuable and useful the technique was. In addition, this operation could be repeated even in the recurrence cases and would give successful results. However, the limitations of this study were the retrospective aspect, the timing of 6-month follow-up period that should be extended longer, and the severity of the cicatrization that could affect the outcome.

Conclusion

Tarsal fracture operation should be considered as an initial procedure in correction of cicatricial entropion regarding the simple, quick, and easily performed technique.

Potential conflicts of interest

None.

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การผ่าตัดด้วยวิธี tarsal fracture ในผู้ป่วยที่เป็นเปลือกตาม้วนเข้าในที่เกิดจากแผลเป็น

ฝนทิพย์ ณ ป้อมเพชร, ศุภพงศ์ ถิรคุณวิชชะ

วัตถุประสงค์: *ภาวะเปลือกตาม้วนเข้าในชนิดที่เกิดจากแผลเป็น เป็นปัญหาทางตาที่พบได้บ่อย มีวิธีการผ่าตัดรักษาโรคนี้หลายวิธี หนึ่งในจำนวนนั้นก็คือ การผ่าตัดแบบ tarsal fracture อย่างไรก็ตาม พบว่าการกลับมาเป็นซ้ำเป็นปัญหาที่พบได้บ่อย จึงได้ทำการศึกษาเพื่อหาอัตราความสำเร็จของการผ่าตัด*

วัสดุและวิธีการ: *การศึกษานี้เป็นการศึกษาย้อนหลังโดยการทบทวนประวัติการรักษาของผู้ป่วยที่มีภาวะเปลือกตาม้วนเข้าในที่เกิดจากแผลเป็นและได้รับการผ่าตัดรักษาด้วยวิธี tarsal fracture ที่ โรงพยาบาลจุฬาลงกรณ์ ในระหว่าง พ.ศ. 2546-2550 และทำการประเมินผลสำเร็จ*

ผลการศึกษา: *ผู้ป่วยที่เข้ารับการรักษาส่วนมากเป็นเพศหญิง 81% ซึ่งมีอายุเฉลี่ย 62.2 ปี (ค่าเบี่ยงเบนมาตรฐาน 20.1) ผลสำเร็จของการรักษาเท่ากับ 74.2% ตาที่เป็นซ้ำและได้รับการผ่าตัดด้วยวิธีเดิม ทำให้ผลสำเร็จเพิ่มขึ้นเป็น 87.1%*

สรุป: *การรักษาภาวะเปลือกตาม้วนเข้าในที่เกิดจากแผลเป็นด้วยวิธีการผ่าตัดแบบ tarsal fracture เป็นวิธีที่ง่าย ทำได้รวดเร็ว ใช้เวลาไม่มาก ดังนั้นน่าจะพิจารณาทำผ่าตัดด้วยวิธี tarsal fracture เป็นวิธีแรกในการผ่าตัดแก้ไขภาวะเปลือกตาม้วนเข้าในที่เกิดจากแผลเป็น*