Lateral tarsotomy: a practical alternative to lateral canthotomy to increase orbital access

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Objective. Transconjunctival approach to the lower one-third of the orbit is commonly used to avoid transcutaneous incisions when surgical access is needed. A lateral canthotomy is used in conjunction with this approach if increased lateral exposure is required. A major disadvantage to lateral canthotomy is difficulty in resuspension of the lateral canthal tendon, which can lead to unaesthetic outcomes. The present report describes two cases of lateral tarsal incision or, as we decided to call it, the "lateral tarsotomy" technique. This simple approach is used to increase lateral access to the orbit without the need for lateral canthotomy.

Study Design. Two patients presented with internal orbital wall trauma that required repair; access was achieved with a transconjunctival approach in conjunction with lateral tarsotomy. The patients were followed up at 1 week, 1 month, and 3 months to document the development of possible unaesthetic and poor functional outcomes.

Results. Excellent cosmetic results were observed, with no noticeable deformity at the tarsotomy site. There was no evidence of ectropion, entropion, scleral show, and visible scars.

Conclusions. The above results suggest that the lateral tarsotomy approach is a practical alternative to lateral canthotomy when increased lateral exposure is required. (Oral Surg Oral Med Oral Pathol Oral Radiol 2016;122:e1-e4)

A multitude of approaches have been used to gain access to the lower one-third of the orbit for aesthetic, reconstructive, or trauma surgery. For accessing the lower lid and orbit, there has been an opposite movement from a cutaneous incision to a transconjunctival incision (also referred to as the *inferior fornix approach*). The chief reason behind this shift is the concern about the increased incidence of lower lid malposition, such as ectropion, entropion, and visible scars associated with lid skin incisions.

Two basic transconjunctival incisions have been described: the preseptal and the retroseptal approaches. These approaches vary, depending on the path of dissection in relation to the orbital septum.[1] Controversy exists as to the best approach. Several authors have reported that the preseptal approach avoids complications, such as eye lid retraction, scleral show, or entropion, and that it avoids interference with intraorbital fat architecture.[2] Others have indicated that the retroseptal approach is easier, faster, and more direct, with no significant difference in postoperative results compared with the preseptal approach.[3]

Converse et al. added lateral incision (lateral canthotomy) to the transconjunctival approach to improve the overall lateral exposure.[1] In a study by Wray et al., lateral canthotomy was found to be necessary and improved access in 56% of their cases.[4] Although the addition of lateral canthotomy provides increased accessibility, several disadvantages were also noted. The literature has shown that despite the suggested merits of the transconjunctival approach, it was avoided when lateral canthotomy was required, mainly for reasons of aesthetic outcome.[5] The purpose of presenting these two cases is to evaluate the lateral tarsotomy surgical technique and its advantage compared with standard lateral canthotomy when used in combination with a transconjunctival approach for orbital access.

SURGICAL TECHNIQUE

In our cases, the procedure started with the placement of a lubricated corneal protector. Two 3/0 silk sutures were placed 3 to 4 mm from the lower eye lid margin through the lower tarsal plate. The purpose of these sutures was to provide eversion and exposure of the palpebral part of the conjunctiva at the medial side of the lower eyelid. Local anesthesia (xylocaine 1% with 1:100.000 epinephrine) was then injected in the subconjunctival plane for hemostasis. Beginning with the tarsotomy allows for better access to the lower lid fornix and facilitates completion of the transconjunctival portion of the approach. This starts with an external skin incision made 3 to 4 mm anterior to the lateral canthal angle approximately 7 to 8 mm in length. The incision is carried inferolaterally, ensuring complete transection of the inferior lid tarsus (Figures 1 and 2). It is advantageous to leave few eyelashes on the lateral portion to facilitate accurate alignment of the gray line upon closure. A standard preseptal transconjunctival

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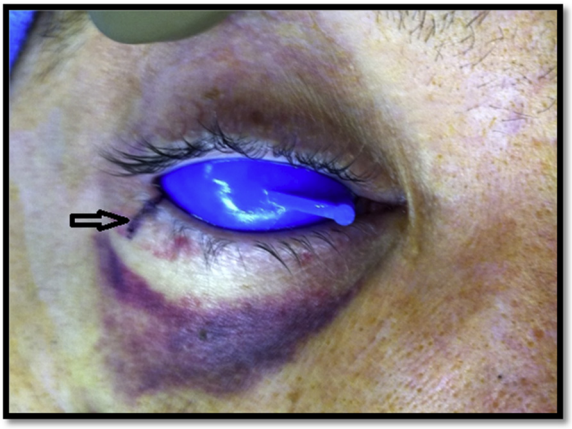

Fig. 1. Tarsotomy incision site (arrow).

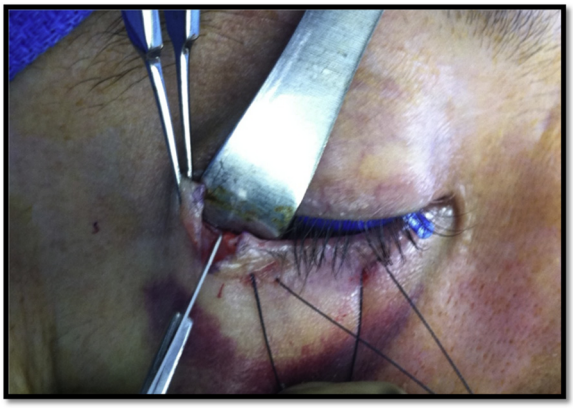

Fig. 2. Incision through the lower tarsal plate.

approach is initiated by dissecting a small pocket by using tenotomy scissors along the length of the fornix. The pocket is 2 to 3 mm inferior to the inferior aspect of the tarsus and includes both the conjunctiva and the septum on either side. The dissection stops just short of the punctum (Figure 3). Dissection is then carried inferiorly and bluntly by using Kittner's dissection sponges in a preseptal plane to the periosteum of the infraorbital rim (Figure 4). This technique of atraumatic blunt guidance helps contain and maintain the orbital fat in its native respective position without prolapse. Additionally, it decreases the risk of injury to the pretarsal muscle by avoiding sharp dissection. The periosteum is excised on the outer aspect of the rim below the arcus marginale. A subperiosteal dissection is then accomplished, and the globe is retracted superiorly to gain access to the floor and inferior and lateral aspects of the orbital walls. This access allows for visualization of the orbital floor and rim for open reduction internal fixation of the fracture (Figure 5). The patients tolerated the

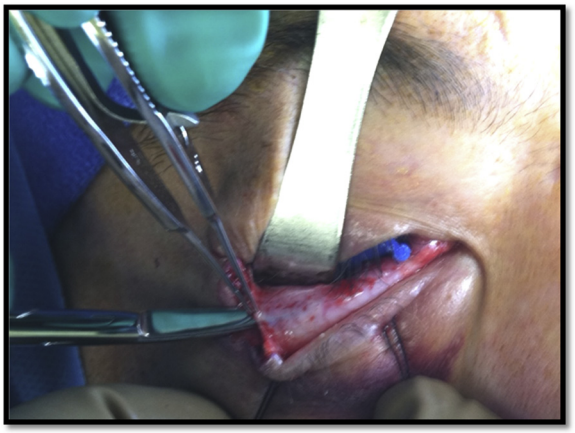

Fig. 3. Preseptal transconjunctival dissection.

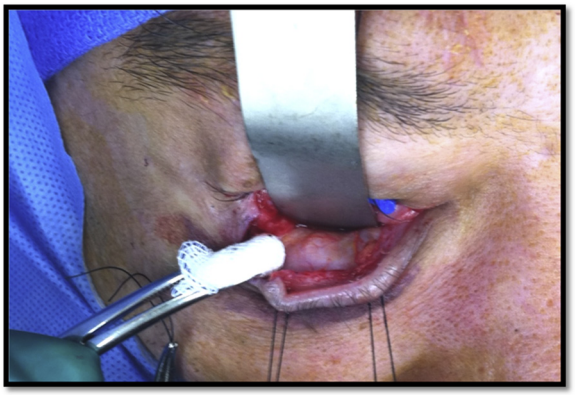

Fig. 4. Kittner dissection exposing the periosteum of infraorbital rim.

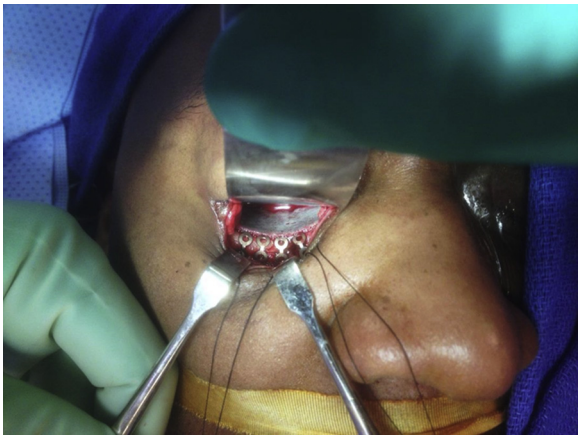

Fig. 5. Adequate access obtained for orbital fracture repair.

procedure well and were asked to return for a 1-week postoperative visit after discharge from the hospital.

For consistency, all the surgical procedures and the follow-up evaluations were performed by the same surgeon.