Online Case Report

Endoscopic dacrocystorhinostomy in lacrimal canalicular trauma

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A case is presented where the common insertion of the upper and lower canaliculus of the lacrimal sac was repaired using endoscopic dacrocystorhinostomy (DCR) techniques, with silicone stenting and securing of stents intranasally.

Keywords: Dacrocystorhinostomy – Lacrimal sac – Endoscopic DCR – Canalicular trauma

The lacrimal apparatus may be injured in blunt trauma to the eyelid, usually due to a blow from a fist.¹ Laceration of both upper and lower ducts occurs in about 27% of cases.¹ Repair of the common insertion of the upper and lower canaliculus of the lacrimal sac is difficult and may require canalicular dacrocystorhinostomy (DCR).² We present a case where such an injury was repaired using endoscopic DCR techniques, with silicone stenting and securing of

stents intranasally. As far as we know, this technique has not been reported elsewhere.

Case report

A 35-year-old man presented with a punch to the left side of the face with no ocular injuries or orbital floor fractures. There was a full thickness laceration of the

Figure 1 (A) Actual and (B) artist's representation of the medial lid injury with the canaliculi shown in white.

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Figure 2 At 3 months' postoperatively, just after removal of canalicular stents.

upper and lower eyelid on the medial side. Disruption of the canaliculi at the point of their common junction with the lacrimal sac was noted (Fig. 1)

Both upper and lower lacrimal canaliculi were probed and O'Donohue silicone tubes passed through them. The medial common punctum on the lacrimal sac was identified with loupe magnification (x3.5) and dilated with a blunt probe.

It was elected to repair the injury using endoscopic DCR techniques as an alternative to a microsurgical repair or a formal canalicular DCR. Using endoscopic vision, a mucosal flap was raised anterior to the uncinate process. The maxillary bone overlying the lacrimal bone was removed. The lacrimal bone was lifted off the lacrimal sac. The lacrimal sac was incised and O'Donohue tubes were pulled through into the middle meatus and tied in a square knot intranasally. No suturing of the lacrimal canaliculi was performed as the continuity was maintained by the stents and a three-layered closure of the full-thickness eyelid laceration was performed. The medial canthal system was reconstructed with prolene sutures.

This stent was left in place for 3 months and then removed in the out-patient clinic. The patient has a good cosmetic result and no epiphora following a 12-month follow-up (Fig. 2).

Discussion

Avulsions or lacerations of both canaliculi, especially with their junction with the nasolacrimal sac, are difficult to

treat. canalicular DCR may be indicated in such cases to re-establish the continuity of the lacrimal system.²

In this patient, the medial side of the eye was already traumatised and an external canalicular DCR would have added considerable time to the procedure and made it more complex. Endoscopic DCR did not add significantly to the duration of the repair of the lacerations.

Repair of canalicular ducts is generally done microsurgically but patency rates of 100% (on probe check after stent removal) and 86% epiphora-free rates have been reported with only stenting of the ducts and approximation of the overlying tissues.³

To achieve satisfactory lacrimal repair, long-term stents are recommended.⁴ Stenting only into the lacrimal sac and fixation of the free end to skin or conjunctiva is prone to easy dislodgement.¹ A good method is to secure the stent by tying a knot intranasally,⁴ as done in this case.

Endoscopic DCR is becoming an acceptable method of treatment of nasolacrimal duct obstruction.⁵ This has the advantage of no external scarring and better internal visualisation.

Conclusions

We believe endoscopic DCR, in place of canalicular DCR, can be an effective alternative in difficult very medial canalicular injuries.

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