CASE REPORT

Tarsal buckle with conjunctival prolapse following levator plication for unilateral congenital ptosis

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SUMMARY

An 8-year-old child underwent uneventful levator plication surgery for unilateral congenital ptosis. Postoperative course for initial few days was uneventful but on day 7, the patient was brought with conjunctival prolapse from the undersurface of upper eyelid due to tarsal kinking and eversion. Early medical management was initiated with frequent surface lubrication to avoid conjunctiva dryness. Under general anaesthesia, right-sided conjunctival repositioning was performed with an eyelid spatula supplemented by three forniceal stay sutures to retain the conjunctiva in its anatomical place. To reverse the tarsal kinking, continued downward traction suture was placed for a period of 2 weeks. At the end of 4 weeks, the conjunctival prolapse was completely resolved with a well-formed superior fornix. At the end of 3 months, the symmetric eyelid position was maintained without any additional complications.

BACKGROUND

Ptosis surgery is a routinely performed surgery by an oculoplastic surgeon. In a significant number of cases, cosmetically satisfactory results are obtained but complications associated with ptosis surgery are frequently troublesome to the patient as well as the surgeon. Commonly noted complications include overcorrection, under correction, eyelid contour abnormality, lid crease asymmetry, conjunctival prolapse, lacrimal gland prolapse and others.¹ Conjunctival prolapse following ptosis surgery is commonly seen following levator muscle resection and also following fronto-orbital and maxillofacial surgical interventions. Here, we discuss an interesting case of conjunctival prolapsed due to tarsal kinking following levator plication surgery for unilateral congenital ptosis.

CASE PRESENTATION

An 8-year-old boy was brought with the history of drooping of the right upper eyelid since birth. Examination revealed a visual acuity of 20/20 in each eye with a refractive error of 0.75 D sphere in the right eye. Marginal light reflex 1 was 1 mm, thus the amount of ptosis was 3 mm with a good levator action (10mm); Bell's phenomenon was good in either eye and the ocular surface evaluation did not reveal any tear film disturbances. In view of moderate ptosis and good levator function, a levator muscle plication was planned. Under general anaesthesia after marking the eyelid crease through skin approach levator muscle was explored

and a mark was placed at 18 mm at the superior tarsal border. Levator muscle was plicated after placing three non-absorbable 6-0 nylon sutures at the superior border of the tarsus. Intraoperatively, the eyelid height was adjusted at the upper border of the pupillary margin.

On a postoperative day 1, there was lid oedema in absence of any additional complications. On a postoperative day 7, the patient was brought with the history of prolapsed reddish cystic mass from the undersurface of the upper eyelid (figure 1A). Immediate medical management in terms of frequent topical lubricants with antibiotics was initiated. Based on the clinical findings, a conjunctival prolapse was suspected. On a postoperative day 10, under general anaesthesia, an examination after the eyelid eversion revealed a reddish ballooning of the conjunctiva; however, the conjunctiva appeared healthy but it was bulky (figure 1B). The tarsal plate showed posterior bowing due to a horizontal traction line at about 4–5 mm from the eyelid margin suggestive of tarsal buckling (figure 1C).

TREATMENT

Intraoperatively, it was decided to reposition the conjunctiva with an eyelid spatula followed by placement of three forniceal based stay sutures (figure 1D). To counter postoperative exaggerated chemosis and the further worsening of the conjunctival prolapse, a reverse eyelid traction was placed at the lid margin using 4-0 silk suture over two bolsters. Postoperatively, patient received topical as well as systemic antibiotics along with anti-inflammatory medications for a period of 10 days. The sutures were removed on day 14 (figure 1E).

OUTCOME AND FOLLOW-UP

At the end of 4 weeks, there was complete resolution of the conjunctival prolapse with bilateral symmetrical eyelid position. The eyelid position remained the same until 3 months of follow-up without any additional complications.

DISCUSSION

In the literature, conjunctival prolapse has been noted following orbitotomy, orbital floor fracture repair, levator resection, retinal surgery and other periorbital surgeries involving the cranium and sinuses.^{1–5} In cases of levator resection, there is a need for extensive dissection of the muscle aponeurosis on either side it, to lift it off from the underlying conjunctiva along with disruption of

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Figure 1 (A) Following ptosis surgery at the end of 7 days conjunctival prolapse underneath the upper eyelid margin was evident. (B) Intraoperatively on day 10, the prolapsed conjunctiva increased in size. (C) After eversion of the lid margin there was horizontal tarsal kinking about 4–5 mm away from the lid margin. (D) After repositioning the conjunctiva and tarsal straightening, a pressure was applied on either side of the eyelid for few minutes. After that three forniceal sutures were placed to hold the conjunctiva in its anatomical place. An inverse eyelid traction suture was placed to counter the recurrence. At the end of 4 weeks, there was a complete regression of the conjunctival prolapse with symmetric eyelid position.

suspensory ligament.² Because of such manipulation combined with inflammatory mediators, there is continuous transudation of the fluid within the subconjunctival space leads to fluid accumulation, chemosis and ballooning outside cul de sac.

There are different suggestions to counter the further progression and keratinisation of the conjunctiva. Simple reposition using a hook may be sufficient,¹ but in difficult cases, double-armed sutures can be passed through the fornix to retain the conjunctiva in its place.¹ Similarly, a local subconjunctival injection consisting of lidocaine and epinephrine combination may help in reducing the transudation from the inflamed blood vessels.⁴ Another technique described is the application of gauze soaked in petroleum jelly and antibiotic ointment combination to the prolapsed conjunctiva with gentle pressure towards the fornix.⁵ All these procedures to reposition the conjunctiva in its anatomical position and to form a fornix appear based on simple logic and based on individual experiences.

In the current case, the ptosis was corrected with the help of levator muscle aponeurosis plication. The prolapsed conjunctiva was small, to begin with, but at the end of 7 days, it progressed to a significant size. While exploring under anaesthesia, there was a tarsal kink along its entirety about 5 mm from the lid margins. This is probably because of much inferior placement

of the nylon sutures over the anterior tarsal plate. Thus, the free superior tarsus in absence of any firm attachment along with associated crowding by the plicated levator aponeurotic tissue might have lead to bulging or prolapse of the conjunctival tissue along the pathway of least resistance that is along the surface of the globe or underneath the margins of the right upper eyelid.

Kumar *et al* have compared the results of levator resection versus plication in congenital ptosis, where they found superior results in levator resection group.⁶ Thus, if the plicated levator bulk causes tarsal eversion and conjunctival prolapsed under such circumstances levator resection can be considered. Similarly, due lesser cooperation from the younger patients or the parents, there is a high chance of periocular rubbing and non-absorbable suture-related complications, under such circumstances absorbable sutures can be used as alternative. To conclude, as per authors knowledge, this is the first case of conjunctival prolapse following levator plication for ptosis surgery. In our case after detailed evaluation, simple placement of anatomically oriented sutures helped to a proper realignment of the kinked tarsal plate to its anatomical position along with a well-formed superior fornix.

Learning points

- ▶ Ptosis surgery is a routinely performed surgery by an oculoplastic surgeon. Thus one should be aware of various possible complications during and after the surgery including tarsal eversion with severe conjunctival prolapse.
- ▶ Conjunctival prolapse following levator muscle resection is a known entity. However, conjunctival prolapse following levator muscle plication has not been previously documented.
- ▶ A careful clinical evaluation followed by timely intervention is necessary to achieve optimal reconstructive outcome in cases of conjunctival prolapse.

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