CASE REPORT

Limbal cyst following blunt trauma in an operated case of congenital cataract: a rare scenario

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SUMMARY

A 15-year-old male patient with the history of bilateral operated congenital cataract surgery 5 years back now presents with gradual painless diminution of visual acuity in left eye following a blunt trauma with a fist. Ocular examination showed a well-defined slightly bluish-tinged limbal-based conjunctival cyst without any irregularities in the anterior chamber/pupil. Intraocular pressures were 16 mm Hg in the right eye and 10 mm Hg in the left eye; retinal examination showed findings consistent with hypotonic maculopathy. Anterior segment ultrasound biomicroscopy revealed a well-defined limbal cyst with anterior chamber communication. Under local anaesthesia, the cyst was completely excised with the reconstruction of the sclerocorneal defect. At the end of 6 months, the patient is symptom-free with pretraumatic visual acuity.

BACKGROUND

A scleral wound site cyst following small incision cataract surgery is a very well-known entity in the older age group. The incidence of unintentional filtration following cataract surgery varies from 1% to 7.7%.¹ The duration for the development of the cyst following cataract surgery varies from several months to years in non-traumatic cases. The majority of cataract surgeries are now being performed with clear corneal/limbal-based incisions, decreasing the incidence scleral wound-related complications. Here we describe the clinical features, diagnosis and management of a limbal-based cyst having a large underlying communication with the anterior chamber developed following a blunt trauma in a case of operated paediatric cataract.

CASE PRESENTATION

A 15-year-old male patient presented with a history of gradually increasing fullness of the left upper eyelid along with the painless progressive diminution of vision in the left eye over the past 3 weeks. On lid eversion, a well-defined conjunctival cyst was noted at the limbus. The patient had undergone lens aspiration with intraocular lens placement at the age of 10 years in both eyes for late diagnosed congenital cataract. Following surgery, with occlusion therapy, the patient had gained a visual acuity of 20/100 in both the eyes. The patient's complaints were co-related with the recent blunt ocular trauma (with a fist).

Ocular examination showed a well-defined slightly bluish-tinged cyst centred on the superior

limbus, which was minimally reducible, semitranslucent with mildly increased surface vascularity (figure 1A). Intraocular pressures were 16 and 10 mm Hg in the right and left eye, respectively; the left eye fundus showed evidence of hypotonic maculopathy. Visual acuity was 20/100 in the right eye and 20/200 in the left eye. The differential diagnosis included either a conjunctival cyst or subconjunctival cysticercosis. Gonioscopy was not possible because the cyst was obscuring a significant portion of the cornea; ultrasound biomicroscopy (UBM) revealed a well-defined cyst which was communicating with the anterior chamber at the limbus with internal echogenicity similar to the aqueous. There was no communication with the vitreous cavity (figure 1B).

A diagnosis of Tenon's cyst arising from the superior limbal wound was made and a total excision of the cyst with the closure of the sclerocorneal defect was planned. Intraoperatively the anterior chamber was filled initially with viscoelastic followed by layered dissection of the conjunctiva from the Tenon's layer, after which a well-defined

Figure 1 (A) Well-defined superior limbal cyst in the left eye (red arrow). (B) UBM showing a well-defined cyst wall with inner Tenon's layer (green arrow) and a communicating channel with the anterior chamber (blue arrow) at the level of limbus. Superior cornea (yellow arrow) and inferior intraocular lens can be appreciated (red arrow). (C) At 2 weeks, optimally closed defect with minimal conjunctival congestion (yellow arrow). (D) Completely healed corneoscleral defect at the end of 5 months (yellow arrow). UBM, ultrasound biomicroscopy.

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cyst was noted and it was collapsed partially for easy clamping of the base. The defect was closed using central three 10–0 monofilament nylon interrupted sutures followed by an adjacent 6–0 polyglactin (vicryl) suture and the conjunctiva was closed with interrupted 8–0 polyglactin (vicryl) sutures under local anaesthesia. At the end of 2 weeks, underlying scleral defect closed completely (figure 1C) and at the end of 5-month follow-up, the patient is symptom-free without any recurrence with best corrected visual acuity of 20/200 in both the eyes (figure 1D).

INVESTIGATIONS

UBM of the anterior segment: this showed communication between the anterior chamber and the cyst.

B-scan ultrasound of the posterior segment: anechoic.

DIFFERENTIAL DIAGNOSIS

Subconjunctival cysticercosis.

Limbal wound site cyst.

Inclusion cyst.

TREATMENT

Exploration of the cyst and closure of the underlying defect were performed under local anaesthesia.

OUTCOME AND FOLLOW-UP

At the end of 5 months, the wound healed without any further complications.

DISCUSSION

In older age patients who have undergone a scleral-based small incision, cataract surgery may develop a spontaneous/traumatic Tenon's cyst. But following a clear corneal incision cataract extraction with intraocular lens placement in paediatric cases, it is unlikely that they develop such complications. The paediatric eyes are more challenging and different from adult once in many aspects like elasticity, wound healing and need for intraoperative suturing. Among the clear corneal squared incisions, a bevelled anterior limbal incision provides better structural support than the hinged or a stepped incision.² These wounds also have the tendency towards leak and hypotony during an early postoperative period which can be detected by early postoperative period optical coherence tomography.³ To avoid such complication, it is better to assess intraoperative seidel's and keeping the pressure on the higher side at the end of the procedure.^{4,5}

There is one case of late phacoemulsification with clear corneal wound dehiscence following blunt trauma in an elderly patient.⁶ Similarly, wound dehiscence following trauma in scleral-based small incision cataract surgery is a known entity.^{7,8}

In the present case, the child has undergone a superior limbal-based (details were not available) lens aspiration which was unable to withstand the internal force generated leading to wound gaping and internal pressure relief, as the corneal wounds never achieve the original strength following surgery. In this case, with the help of UBM preoperatively we were able to assess how to delineate the cyst wall, contents and communication with the anterior chamber and vitreous cavity quite clearly. Even though the cyst slightly appeared bluish but did not have any uveal tissue in it, similarly because the thick overlying layers consisting of Tenon's and conjunctiva were making it difficult to assess the

transparency, contents and communication as gonioscopy was also not possible. UBM demonstrated a well-defined Tenon's cyst covered by conjunctiva having a communication with the anterior chamber at the level of the limbus. The contents showed echogenicity similar to aqueous.

It is uncommon to have a Tenon's cyst following trauma in the paediatric corneal wound; in such cases, a meticulous anterior segment evaluation along with relevant history followed by a gonioscopy whenever possible yield valuable information regarding the nature and origin of the cyst. Similarly, UBM plays a crucial role in delineating the extent, contents, coats of the cavity and underlying communication if present. With the help of UBM, in this case, it was possible to remove the cyst completely without much complication. An early diagnosis may help to prevent the development of hypotonic maculopathy and reduces the risk of infection/cyst rupture. Simple excision with the closure of the underlying defect is a quick and effective procedure in small cysts. As per authors knowledge, this is the first noted case of paediatric cataract wound dehiscence leading to limbal cyst formation.

Learning points

- ▶ Corneal or limbal cataract surgery wounds in paediatric age behave differently as compared with older age scleral wound defect in terms of their size, strength and propensity for wound gaping.
- ▶ Following blunt trauma, a paediatric case with operated congenital cataract developed wound gaping and subsequent cyst formation.
- ▶ In such cases, surgical intervention with prior optimal anterior segment imaging will help in appropriate surgical planning for good, visual as well cosmetic outcome.

Contributors All authors: evaluated the case in detail followed by an appropriate literature review and critically evaluated the educational value of the case and wrote the report. AP and DRS: operated the case with the optimal outcome at the end of 5 months.

Competing interests None declared.

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