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Case Report

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Conjunctival Cyst Excision Using Sodium Hyaluronate and Trypan Blue: A case Report

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ABSTRACT

Article information		Purpose: To assess a modified procedure for complete surgical removal of a large palpebral conjunctival cyst and for prevention of its recurrence utilizing both sodium	
Keceiveu:	22-03-2023	hyaluronate and trypan blue.	
Accepted:	30-04-2023	Design: Interventional case report.	
DOI: 10.21608/IJMA.2023.201725.1647.		Case summary: A little girl was treated for a sizable palpebral conjunctival cyst. A 27-G needle was used to inject sodium hyaluronate and trypan blue into the big cyst in order to thoroughly resect it. The cyst was entirely and easily excised because to the technique's outstanding imaging of the cyst walls and satisfying cyst integrity. A straightforward retention cyst was discovered after a histopathologic evaluation. After a six-month follow-up, there was no recurrence.	
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February; 10.21608/I.	5 [2]: 3069-3071. doi: JMA.2023.201725.1647.	Conclusions: Trypan blue and sodium hyaluronate injections are successful at preserving the integrity of the cyst wall while allowing for clear visualization of the cyst boundaries which aids in the complete excision of the cyst wall.	

Keywords: Conjunctival cyst excision; Trypan blue; Sodium hyaluronate.



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INTRODUCTION

Conjunctival cyst may be congenital or acquired. An acquired conjunctival cyst may appear after ocular surgery or trauma or even spontaneously appear ^[1]. Complete surgical excision, thermal cautery, intracyst injection of isopropyl alcohol, and argon laser photoablation are used to be treatments for conjunctival cyst ^[2]. Surgical excision usually gives satisfied results; however, incomplete excision leads to recurrence. Because of thin, delicate nature of the cyst capsule, identification of the cyst wall may be difficult ^[3].

Trypan blue has been used to aid in the viewing of translucent ocular tissues, such as the inner limiting membrane of the retina and the anterior lens capsule ^[4]. In this work, injections of sodium hyaluronate and trypan blue help to achieve complete cyst clearance by allowing for clear imaging of the cyst capsule while preserving its integrity.

CASE PRESENTATION AND FINDINGS

A 12 years old female came to outpatient clinic of Alzahraa University Hospital suffering from painless swelling in the left upper lid [UL] which had gradually developed over 3 years. No history of ocular trauma or surgery. On Ophthalmic examination: The best corrected visual acuity [BCVA] was 1.0 in right eye [OD] and 0.7 in left eye [OS] with preoperative refraction + 0.25 / + 0.50 x 99 OD and + 0.50 / + 2.0 x 90 OS.

The left UL showed 2 mm ptosis with good levator function. On everting the Lt UL, a large, tense, cystic conjunctival mass measuring 3x1 cm was seen above the upper border of the upper tarsal plate. The upper tarsal conjunctiva showed scar change. No proptosis or dystopia. No limitations of ocular movement were observed, and other ocular examinations revealed normal findings. No abnormality was observed in her right eye. CT Scan: Showed ovoid Mass in the centromedial portion in the left UL measuring 2.7 x 1.3 cm and showing no orbital extension or bony changes.

First, a consent was taken from the patient mother, then surgical removal was done. The surgery was done under general anesthesia. Cyst excision was through the conjunctival side. Sodium hyaluronate [Healon] and Trypan blue [TB] solution was injected in a mixture into the cyst through a 27-G needle. Surgical excision was done carefully, so as not to injure the cyst capsule. A small perforation in the capsule was noticed, but the cyst wall staining was remained and the cyst was completely removed. Interrupted 8-0 Vicryl was used to stitch the conjunctiva. For two weeks, topical steroid and antibiotic eye drops three times per day and an ointment at bedtime were administered as postoperative treatments.

Histopathological examination revealed epidermoid cyst lined with benign squamous epithelium. Fibrosis was found in cystic wall.

Six months postoperative refraction was + 0.50/ + 0.50 x 100 OD and + 0.00/ + 1.00 x 88 OS with postoperative BCVA 1.0 OD and 0.8 OS. No cyst recurrence was observed 6 months later. No other ocular complications were noticed as granuloma, symblepharon or infection. No ptosis or orbital fat herniation were recorded after six months follow up.

DISCUSSION

Conjunctival cyst is lined by cubical or columnar epithelium, and goblet cells that secrets mucus inside the cyst cavity. When the cyst is large enough to affect vision, disturb ocular motility, causes foreign body sensation or dry eye or causes cosmetic disfigurement, surgical removal is the treatment of choice. Multiple studies show that different methods were used to manage conjunctival cysts ^[5].

Vital stain helps to visualize the cyst boundaries and make the total excision easy and achievable, however, adding Ophthalmic Viscoelastic Devices [OVDs] like sodium hyaluronate prevent cyst collapse during excision. In ophthalmic surgery, the use of trypan blue [TB] stain is not new ^[4]. TB was used by other authors for staining of conjunctival cyst before excision with favorable results ^[6, 9].

Other authors have utilized additional stains, such as Indocyanine Green [ICG] to emphasize the visualization of the cyst. In one patient with conjunctival cyst, **Kobayashi** *et al.* in 2002 used ICG without use of OVDs ^[7]. In another study in 2005, they used TB with Healon V for complete removal of a conjunctival cyst ^[8]. In this case report, sodium hyaluronate was used and it is more economic than Healon V with

equal outcome. Being available in a suspension that has already been produced and is more affordable, makes TB more practical for many surgeons than ICG.

Previous studies have been used а combination of ICG stain and sodium hyaluronate in managing conjunctival cyst^[9]. In different study, methyl cellulose was a employed as a viscodispersive to view the cyst perform and comparable function. a Nevertheless, methyl cellulose preserved less space than sodium hyaluronate ^[6].

In Conclusion: Surgical excision with sodium hyaluronate and TB allowed for straightforward and thorough removal of the conjunctival cyst by providing great vision of the cyst margins while maintaining cyst integrity. Comparing to the traditional surgical excision mainly in large palpebral conjunctival cyst, this technique facilitates complete cyst removal with less incidence of intraoperative complications [as accidental opening of the orbital septum] and less incidence of recurrence.

Patient consent: Patient consent had been taken from the mother.

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