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**CASE SERIES**
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# CONJUNCTIVAL CYST AFTER UNEVENTFUL SMALL INCISION CATARACT SURGERY

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## INTRODUCTION

Conjunctival cysts are slowly developing thin-walled cysts. They often don't cause any symptoms, but when they get greater in size, they can cause dry eyes, grittiness, poor ocular motility, and cosmetic deformity because they affect the tear film. These cysts lose cells and contain serous fluid. When filled with serous fluid alone, these cysts are transparent and transilluminating. Histopathologically, a stratified squamous non-keratinizing epithelium is what distinguishes them. They can be classified as either primary or secondary inclusion cysts. Usually concealed in the fornix, primary cysts are congenital and progressively get larger as people mature. Secondary cysts are acquired, can be implantation cysts, others are degenerative cysts, parasitic cyst.1, 2, 3

Secondary cysts known as acquired conjunctival implantation or inclusion cysts are typically observed after strabismus surgery [4,5]. They can also arise following other ocular procedures such as pars plana vitrectomy [6], ptosis surgery [7], and Ahmed glaucoma valve insertion [8], scleral buckling [9]. Conjunctival inclusion cysts have been documented after phacoemulsification surgery, however, a small number of cases have been recorded after manual small incision cataract surgery (SICS) [10].

Here we are reporting three cases of conjunctival cyst where some patients who experienced painless edema after uncomplicated SICS indicated a great deal of anxiousness.

## CASE SERIES

### Case 1

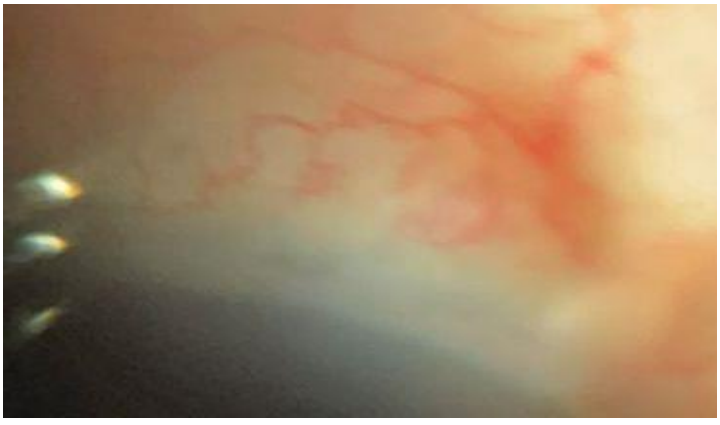
The patient, a 52-year-old man, complained of swelling and a feeling of a foreign body in his left eye for 12 days. Initially painless and immobile, the swelling eventually grew to its current size. The patient reports that one month ago, they had a posterior chamber intraocular lens implantation and a SICS performed in the same eye. On testing, the right eye's unaided vision was 6/12 and the left eye's was 6/24. With correction, the right eye's vision was 6/6 and the left eye's was 6/9, indicating considerable astigmatism. The right eye's intraocular pressure was 16 mmHg, whereas the left eye's was 14 mmHg. The inspection of the anterior and posterior segments was within normal limits, with the exception of a single cystic immobile swelling that was seen above the prior scleral tunnel at the left eye's superior limbus. There was clear fluid inside the 10 × 8 mm swelling. A positive

transillumination test result was obtained. Under local anesthesia, the patient was posted for cyst removal. The conjunctiva around the cyst was carefully dissected throughout the procedure, and when the cyst broke from its base and a clear fluid was released, we discovered a hair follicle at the cyst's base, which was removed. Fish mouthing of the SICS tunnel occurred because the cyst was confined there, yet there was no connection with the anterior chamber. The removed cyst was sent for analysis by a histopathologist. Following the application of three 10-0 interrupted sutures to the scleral tunnel, the conjunctiva was resisted. Postoperatively, steroid antiboitics eye drop started. An epidermal inclusion cyst was discovered by histopathological analysis. Congestion was minimal on the first surgical day, a well-sealed tunnel, normal intraocular pressure, and satisfactory vision.

**(Figure 1).**

**Case 2**

A 65-year-old woman reported that her right eye had been somewhat swollen and felt like it had a foreign body in it for 20 days. The swelling increased in size steadily and caused no pain. One and a half months ago, the patient had SICS and a PCIOL implanted in her right eye. Following assessment, the BCVA was found to be 6/36 in the right eye and 6/9 in the left, corrected to 6/12 in the right eye and 6/6 in the left. According to GAT, the intraocular pressure in the right eye was 14 mmHg, while in the left, it was 16 mmHg. Directly above the prior scleral tunnel incision, a noticeable cystic swelling was seen at the right eye's superior limbus. Mucinous fluid was present in the 3 × 6 mm swelling. There were no symptoms of hypotony and dilated fundus exams were unremarkable. Under local anesthesia, the patient was scheduled to have the cyst surgically removed. Due to the separation of the conjunctiva surrounding the cyst during surgery, the cyst unintentionally ruptured from its base during the excision procedure. It was discovered that the cyst was interacting with the scleral tunnel. A portion of it was sent for histological analysis after it ruptured during excising. After careful re-approximation of the conjunctiva to the limbus, three interrupted sutures were used to close the scleral tunnel after the underlying sclera was cauterized. A cyst surrounded by keratinized stratified squamous epithelium was discovered by histopathological analysis. The wound was properly closed, the BCVA improved to 6/6,



**(figure 2)**

**Case 3**

A 60-year-old woman reported experiencing a slight swelling sensation in her right eye, which felt like something was lodged in it. The swelling started off painless and grew until it reached its current size. The patient had previously had sics performed on her right eye using PCIOL. Both eyes were within the normal range during the assessment. The intraocular pressure, as determined by GAT, was 14 mmHg in the right eye and 16 mmHg in the left. Directly above the prior scleral tunnel incision, a noticeable cystic swelling was seen at the right eye's superior limbus. There was mucinous fluid in the 2 × 2 mm swelling. Dilated fundus examinations were unremarkable. As the cyst was small in size. Cyst punctured with 26 gauge needle and later antibiotic steroid eye drops were prescribed. The cyst resolved in size, no surgical intervention was carried in this case.

## DISCUSSION

Among all cataract surgeries, manual SICS is the most prevalent and is more frequently carried out in developing nations. According to the literature, SICS is more likely to cause conjunctival cysts than phacoemulsification.

From our cases, we observe that after manual SICS, conjunctival inclusion cysts may develop our cases were performed by junior surgeons, considering the potential for inadequate tunnel design and incorrect post-operative conjunctival approximation

and excessive cautery. most importantly we also found eyelash follicle at the base of cyst in one case and fine part of eye lash and poorly constructed wound in other two cases as probable reasons for conjunctival inclusion cysts. Avoiding contact between the IOL and conjunctiva during intraocular lens insertion and closely monitoring conjunctival reflection during scleral wound creation will help prevent this problem. As we found eye lash follicle in one case so it is also necessary for proper eye trimming and proper draping of operating eye before start of surgery to prevent inadvertent cut of eyelashes with conjuctival scissors at time of surgery. It is also necessary for proper inspection of wound site before patching the eye.

The filtering bleb is the primary differential diagnosis. A filtering bleb is purposefully made during trabeculectomy to allow aqueous to pass through to the sub-conjunctival area, although it can also be made accidentally during standard manual SICS. According to gonioscopic examination, the earlier authors who observed conjunctival cysts after SICS also documented fish mouthing of the internal aperture.[11] These functions similarly to an unforeseen filtering bleb. When deciding whether to intervene, visual evaluation, intraocular pressure, and any wound leaking are crucial factors. The choice to intervene was made in our cases, due to tunnel fish-mouthing and compromised tunnel architecture, even with normal IOP and negative seidels. Despite being encysted in the scleral tunnel, none of the three blebs were able to communicate with the anterior chamber.

We present three SICS instances with conjunctival inclusion cysts following surgery. A superior tunnel was created in each instance. Therefore, superior conjunctival cysts were present in every patient. This is the most common differential diagnosis for a conjunctival cyst, which resembles a bleb and is created following trabeculectomy surgery. During trabeculectomy, a filtering bleb is purposefully made to allow aqueous to pass through to the sub-conjunctival region, although it can also be made accidentally during standard manual SICS. According to gonioscopic examination, the earlier authors who observed conjunctival cysts after SICS also documented fish mouthing of the internal aperture.[11] These functions similarly to an unplanned filtering bleb. When deciding whether to intervene, visual evaluation, intraocular pressure, and any wound leaking are crucial factors. Leaking and over-filtration bleb can cause maculopathy as a result of hypotony, and in rare cases, endophthalmitis and spontaneous rupture can cause bleb to impair vision.

In this event, tunnel fish-mouthing and compromised tunnel architecture led to the need to intervene despite normal IOP and negative seidels. These cysts did not communicate with the anterior chamber, but they were encysted within the scleral tunnel.

Conjunctival epithelium proliferation and accumulation inside confined tissue is thought to be the cause of the cysts, while the precise processes are yet unknown. The conjunctiva may become trapped in the scleral tunnel as a result of surgical trauma that alters the conjunctiva's natural anatomy.

Although they usually don't produce any serious symptoms, conjunctival inclusion cysts might cause minor cosmetic problems or foreign body sensations. Treatment is required for persistent instances or those that freely communicate with the anterior chamber, even if some cysts may heal on their own, as was the case in our third case.

Although surgical removal is seen to be the best course of action, YAG laser therapy or thermal cautery under slit-lamp visualization are other viable choices [12],[13]. The procedure entailed surgically excising the cysts and then using sutures to seal the tunnel tightly. By using this method, the cysts are removed and the chance of problems like endophthalmitis is decreased.

## CONCLUSION

A crucial first step in preventing this problem is scleral wound closure; the scleral wound should always be sutured if it is found to be unstable. Excessive cautery and conjunctival dissection should be avoided as they can cause leaky tunnels. Incision sites should be free of any eyelash or cotton fibres which was found in one case which acted as foreign body in development of cyst. Additionally, during surgery, we must refrain from repeated inclusion of conjunctiva into the tunnel.

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