

## A Case Report of Traumatic Conjunctival Inclusion Cyst

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**Abstract:** Conjunctival inclusion cysts can be congenital or acquired. Acquired conjunctival inclusion cysts occur mostly following ocular surgery. Conjunctival inclusion cysts cause vision impairment by corneal astigmatism. A 25 years male patient presented to our institute with diminished vision of left eye and swelling over his left upper lid since 8 weeks with a past history of blunt trauma 9 weeks back over his left upper eye lid with a stone. Lid eversion revealed conjunctival cyst in the left upper lid. Complete excision of the cyst was performed and the excised tissue was subjected to histopathological evaluation which revealed a cyst lined by non-keratinized stratified squamous epithelium. Following surgery Left eye vision improved from 20/40 to 20/20p after 1 week. Case was followed up for six months and no recurrence was observed. The purpose of the case report is to create awareness regarding the factors leading to conjunctival cyst formation, vision impairment and recurrence after its excision.

**Keywords:** conjunctival inclusion cyst; corneal astigmatism; blunt trauma; cyst excision; cyst recurrence.

### I. Introduction

A conjunctival cyst is a thin-walled sac or vesicle that contains fluid. This vesicle may develop either on or under the conjunctiva. Cyst wall consists of several layers of non-keratinised lining epithelium and connective tissue. 80% of the entire cystic lesions of conjunctiva are inclusion cysts. They can be primary or secondary cysts.<sup>1</sup> Conjunctival cysts are usually symptomless but can cause cosmetic disfigurement, reduced motility, foreign body sensation, dry eye due to unstable tear film when they increase in size. Primary cysts are congenital, which remains hidden in the fornix and gradually increase with age. Secondary cysts can be parasitic cysts, implantation cysts due to trauma and degenerative cysts.<sup>1,2</sup> Treatment for cysts is complete excision. As the cysts are thin walled, rupture is common during excision. Recurrence is the main postoperative concern. Careful and intact removal of cyst is necessary to prevent recurrence. Secondary inclusion cysts are more common. They occur either naturally or under inflammatory condition of the conjunctiva. In most cases it is developed by detachment of a portion of conjunctival epithelium by surgery or trauma<sup>3,4</sup> and even subtenon anesthesia<sup>5</sup>. Conjunctival inclusion cysts are benign cysts filled with clear serous fluid containing shed cells or gelatinous mucous material.<sup>6</sup> They can be congenital or acquired.<sup>7</sup> Acquired cysts occur following traumatic or surgical implantation of conjunctival epithelium and are much more common<sup>8</sup>. The present case report highlights conjunctival inclusion cysts following blunt trauma.

### II. Case Report

A 25 years gentleman presented to our institute with swelling of the left upper eye lid noticed since 8 weeks, initially smaller in size, gradually increased to present size and was associated with foreign body sensation. He gives a history of blunt trauma 9 weeks back, over his left upper eye lid with a stone. On examination the visual acuity was 20/40p in the left eye which improved to 20/20p with -0.75 cylinder at 180°. Eversion of left upper lid revealed a swelling which was vertically oval measuring 13mm× 12mm situated on the palpebral conjunctiva 4 mm from the lateral epicanthus and 5mm from the left upper lid margin (Figure 1). The swelling was cystic in consistency, non tender with no mobility suggesting that the cyst was adherent to the underlying sclera tissue. Transillumination of the swelling by slit lamp beam revealed a cyst containing clear fluid (Figure 2). The ocular movements and dilated fundus examination were unremarkable. The intraocular pressure was 16mmHg measured by non contact tonometry. MRI of the patient revealed a small ill defined isodense lesion measuring 13x12mm noted on supero-medial aspect of the left orbit. He was posted for surgical excision of the cyst under topical anesthesia. The conjunctiva overlying the cyst was separated by blunt dissection and the cyst was excised at the base. Despite careful dissection, the cyst was ruptured. The conjunctiva was re-approximated to the limbus and was sutured with 8-0 Ethilon suture (figure 3). The excised cyst was subjected to histopathological examination, which revealed cyst lined by non-keratinized stratified squamous epithelium suggestive of a conjunctival inclusion cyst (figure 4). There was no growth of organisms from the clear fluid sample that was sent for microbiological examination. Vision improved to 20/20p after 1 week. Patient was followed up for six months without any signs of recurrence. Right eye vision was normal and no similar swelling was observed.



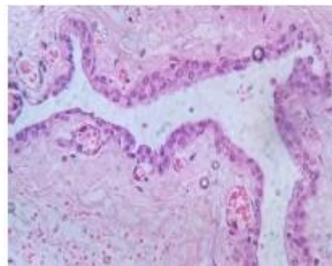
**Fig 1:** swelling as seen through left upper eyelid.



**Fig 2:** Transillumination test revealed cyst contains clear fluid



**Fig 3:** Post-operative appearance after the bleb excision.



**Fig 4:** Histopathology evaluation revealed cyst.

### III. Discussion

The conjunctiva is a translucent mucous membrane that covers the anterior part of the globe. Conjunctival epithelium contains goblet cells and scattered melanocytes. The stroma is a fibrovascular connective tissue that contains collagenous and elastic tissue as well as arteries, veins, lymphatics, nerves and lymphoid tissue. The caruncle on the nasal canthus contains both conjunctival and cutaneous structures and tumours can be of skin or mucosal origin.

Conjunctival inclusion cysts can be congenital or acquired. Acquired conjunctival inclusion cysts can occur following ocular surgery. They are most common following strabismus surgery<sup>8</sup>, but may also occur following other ophthalmic surgeries such as pars plana vitrectomy<sup>9</sup>, scleral buckling<sup>10</sup>, Ahmed glaucoma valve insertion<sup>11</sup>, and ptosis surgery<sup>12</sup>. While conjunctival inclusion cyst following phacoemulsification surgery has been reported<sup>13</sup>, there are no reports following manual SICS. These cysts are generally asymptomatic or may cause a mild foreign body sensation or cosmetic concerns. The chief differential diagnosis is a filtering bleb. Possible complications are infection and the rare possibility of epithelial in growth through the tunnel wound. These cysts may disappear spontaneously, however persistent cases require treatment. Surgical excision of the cyst is the best treatment. Thermal cautery under slit-lamp visualization<sup>14</sup> or YAG laser of the cyst can also be performed<sup>15</sup>.

History of trauma in the past has led to the view that inclusion cysts are of traumatic origin<sup>16,17</sup>. A mild degree of trauma may not lead to embedding of conjunctival epithelium into the deeper tissues. Once there is conjunctival inflammation, the epithelium becomes loose and the deeper tissues get oedematous with mildest trauma the epithelial cells may get exfoliated and burned into the deeper tissues where mild fibrosis, shallowing of fornices and adhesions may be progressing slowly. Proliferation of these cells results in the formation of cysts. Hence simultaneous occurrence of inflammation and trauma may contribute to its genesis.

From the above case report we note that conjunctival inclusion cysts can occur post traumatically. Histopathological evaluation revealed cyst lined by non-keratinized stratified squamous epithelium. Patient was posted for cyst excision. Despite careful dissection, the cyst ruptured. The cyst was completely excised despite the rupture of the cyst during the dissection. The defect was sutured with 8-0 Ethilon suture to prevent its recurrence (Figure 3).

### IV. Conclusion

In present case, Conjunctival inclusion cyst developed following blunt trauma. Conjunctival cyst causes mechanical compression on the cornea leading to corneal astigmatism. The complete cyst excision aided in preserving vision and preventing the recurrence.

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