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### RESEARCH ARTICLE

#### CONJUNCTIVAL CYST (CASE REPORT)

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#### Abstract

Conjunctival cysts, benign fluid-filled sacs on the eye's conjunctiva, often pose cosmetic concerns and cause discomfort, prompting surgical evaluation. This case report discusses a 30-year-old female who presented to the Ophthalmology Outpatient Department at Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh, with a gradually enlarging conjunctival cyst in the right eye, leading to irritation and discomfort. The patient underwent a detailed clinical examination, confirming a benign-appearing cyst. Given its size and symptomatic nature, surgical excision was chosen as the definitive treatment. The surgical intervention involved precise dissection and removal of the cyst, preserving adjacent tissues and minimizing risks. The procedure was successful, with no postoperative complications, and the patient experienced complete symptom resolution. Follow-up assessments demonstrated no recurrence, underscoring the efficacy of meticulous surgical management. This case adds to existing evidence that supports surgical excision as the gold standard for managing symptomatic conjunctival cysts, particularly those with a history of recurrence. Conservative treatments, such as needle aspiration or cauterization, often result in incomplete resolution and higher recurrence rates. The report emphasizes the importance of individualized treatment, considering cyst characteristics and patient symptoms, to ensure optimal outcomes. It also highlights the role of thorough preoperative assessment using slit-lamp examination and other diagnostic tools to differentiate conjunctival cysts from similar ocular lesions. The findings contribute to the literature by reinforcing surgical excision as a safe, effective, and reliable treatment for conjunctival cysts. Future research should focus on comparing surgical and non-surgical modalities to establish clear guidelines, aiming to optimize patient-specific care.

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#### Introduction:-

Conjunctival cysts are fluid-filled sacs that form on the conjunctiva, the thin, transparent tissue covering the white part of the eye (sclera) and the inner surface of the eyelids. These cysts can vary in size, ranging from microscopic to several millimeters, and they are generally benign, posing no significant threat to vision. However, their presence can cause discomfort, irritation, and cosmetic concerns for patients, leading them to seek medical evaluation. While the pathophysiology of conjunctival cyst formation is not entirely understood, they are thought to result from various etiologies, including trauma, chronic inflammation, infections, or surgical procedures.

Conjunctival cysts can be broadly categorized into two main types: epithelial inclusion cysts and retention cysts. **Epithelial inclusion cysts** typically form due to the entrapment of conjunctival epithelium beneath the surface, often following trauma or surgery. These cysts are usually filled with clear, watery fluid and may appear translucent or semi-transparent. **Retention cysts**, on the other hand, develop when a blockage in the ducts of conjunctival glands prevents the normal secretion of fluid, leading to cyst formation. While these cysts are often asymptomatic, larger ones can cause a sensation of a foreign body, localized irritation, or conjunctival redness, prompting the need for medical or surgical intervention.

The diagnosis of a conjunctival cyst is usually straightforward, involving a thorough clinical examination of the eye using a slit-lamp biomicroscope, which provides detailed visualization of the anterior segment. Most conjunctival cysts appear as smooth, round, and translucent lesions on the conjunctival surface. Additional diagnostic techniques, such as fluorescein staining or anterior segment optical coherence tomography (OCT), can be used in specific cases to differentiate conjunctival cysts from other ocular surface conditions, such as conjunctival neoplasms or pinguecula, which might mimic similar presentations.

Treatment options for conjunctival cysts depend on their size, location, and symptomatology. Asymptomatic cysts that are small and do not cause any discomfort are often managed conservatively, with observation being sufficient. However, symptomatic cysts, particularly those that are large or recurrent, require intervention. Treatment modalities can range from minimally invasive procedures, such as needle aspiration or cauterization, to surgical excision. Aspiration involves puncturing the cyst and draining the fluid, providing temporary relief but often leading to recurrence. Cauterization with chemical agents or thermal devices can effectively shrink the cyst but carries the risk of conjunctival scarring. Surgical excision is considered the definitive treatment, offering the lowest recurrence rates when performed meticulously.

This case report focuses on a patient presenting with a symptomatic conjunctival cyst that necessitated surgical intervention. The decision to proceed with surgical excision was based on the cyst's size, recurrence, and the patient's discomfort. The case underscores the clinical importance of accurately diagnosing conjunctival cysts and selecting the appropriate treatment to achieve optimal outcomes. This report also emphasizes the need for individualized management, considering the patient's symptoms, the cyst's characteristics, and potential underlying etiologies. By detailing the clinical presentation, surgical approach, and follow-up, this case contributes to the existing literature on conjunctival cyst management, highlighting the effectiveness and safety of surgical intervention.

Additionally, the case report aims to explore the challenges associated with the surgical management of conjunctival cysts, such as ensuring complete removal to minimize the risk of recurrence while avoiding damage to adjacent conjunctival and scleral tissues. The surgical approach chosen for this case was guided by current best practices, emphasizing the importance of precision and technique in achieving a successful outcome. The discussion will also cover the implications of this case for clinical practice, including the need for patient education regarding postoperative care and potential complications.

## Care Report:

### History of Present Illness

Bhawna, a 30-year-old female, came to the Ophthalmology Outpatient Department (OPD), Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh in May 2024 with a chief complaint of discomfort in her right eye due to a visible cyst on the conjunctiva. She reported that the cyst had been gradually increasing in size over the past few months. Initially, it was asymptomatic, but recently, it began to cause irritation, especially during blinking, leading her to seek medical advice. The patient denied any history of recent trauma, ocular infections, or previous ocular surgeries.

### Clinical Findings

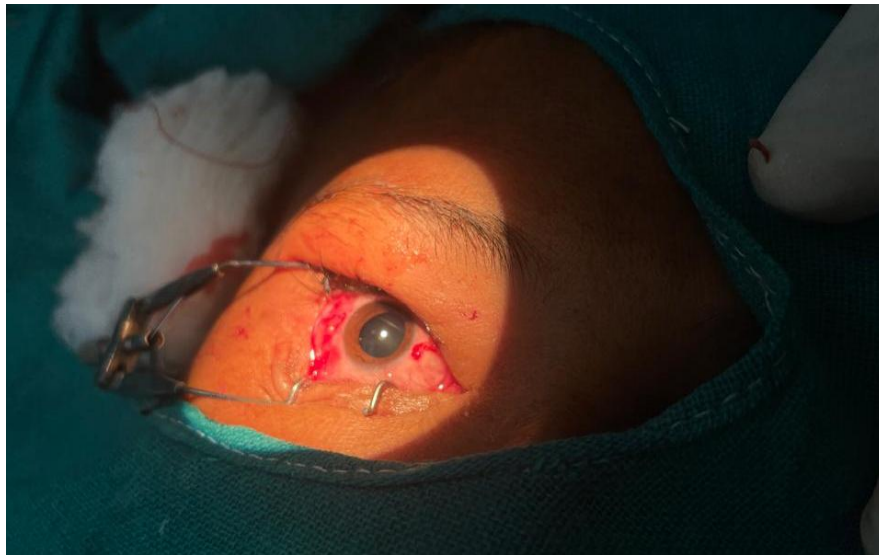
On examination, Bhawna had a well-demarcated, translucent, fluid-filled lesion located on the bulbar conjunctiva of her right eye. The cyst was smooth and round, with a diameter of approximately 5 mm, causing slight conjunctival hyperemia around the lesion. There was no associated discharge, and the patient's visual acuity remained unaffected. The rest of the anterior and posterior segments of the eye were within normal limits. There were no signs of scleral involvement or deeper ocular pathology, and no lymphadenopathy was detected.

The physical examination confirmed that the lesion was a benign-appearing conjunctival cyst, with no evidence of malignancy or other concerning features. A slit-lamp examination showed that the cyst was superficial, containing clear fluid, and there was no evidence of foreign body retention or infection.

### Diagnosis

Based on the clinical presentation and examination findings, a diagnosis of a **conjunctival cyst** was made. Given the size of the cyst and the patient's symptoms of discomfort and irritation, surgical excision was recommended for definitive management.

The patient was counseled regarding the nature of the lesion, possible causes, treatment options, and the potential risks and benefits of surgical removal. After a thorough discussion, Bhawna opted for surgical excision to alleviate her symptoms and prevent recurrence.



**Figure 1:-** Post-operative View of the Conjunctival Cyst on the Right Eye.



**Figure 2:-** Intraoperative Image Showing Conjunctival Cyst.



**Figure 3:-** Intraoperative Image Showing Dissection and Removal of the Conjunctival Cyst During Surgery.



**Figure 4:-** Preoperative image showing Conjunctival Cyst.

#### **Surgical Procedure**

The patient underwent a surgical excision of the conjunctival cyst under local anesthesia. The procedure involved the following steps:

1. **Preparation:** The eye was sterilized, and a local anesthetic was applied to the affected area.
2. **Surgical Access:** A small incision was made on the conjunctiva to expose the cyst.
3. **Excision:** The cyst was carefully dissected and removed without damaging the surrounding conjunctival tissue.
4. **Closure:** The incision was closed with absorbable sutures.

Photographic documentation of the surgery is provided (see images for detailed visual representation of the surgical steps).

#### **Outcome and Follow-Up**

- The surgical procedure was successful, with complete removal of the cyst.
- The patient was followed up at [number of days/weeks post-operation], showing no signs of recurrence or complications.
- The patient's symptoms, including discomfort and irritation, were fully resolved.

#### **Ethical Considerations**

Ethical approval for this case report was obtained with the patient's informed consent, ensuring understanding of the procedure, risks, and the use of clinical images. Confidentiality was maintained by anonymizing patient information, and all actions taken were guided by the principles of beneficence and non-maleficence, prioritizing the patient's well-being and minimizing potential harm.

#### **Discussion:-**

Conjunctival cysts, although benign, can cause significant discomfort and cosmetic concerns, prompting many patients to seek surgical treatment. This case report on the surgical management of a conjunctival cyst provides valuable insights into the clinical approach to diagnosing and treating such cases. Conjunctival cysts are generally characterized by their transparent appearance and can range from asymptomatic to causing significant irritation, as observed in this case. The success of surgical management in this case adds to the existing evidence supporting excision as a definitive treatment modality.

The discussion focuses on several key aspects, including the rationale for surgical intervention, the challenges associated with the procedure, and the post-operative outcomes. In this case, the patient presented with a gradually enlarging cyst that, although initially asymptomatic, led to discomfort and irritation, justifying the decision for surgical excision. The surgical technique involved careful dissection to ensure complete removal of the cyst while preserving the surrounding conjunctival tissue, which is crucial to minimize recurrence and prevent complications such as scarring.

In the literature, the treatment of conjunctival cysts varies based on their size, location, and symptomatology. For smaller, asymptomatic cysts, conservative management, such as observation or needle aspiration, is often sufficient. However, needle aspiration has a high recurrence rate due to incomplete removal of the cyst lining. This case aligns with other studies that highlight surgical excision as the preferred approach for symptomatic or recurrent cysts, offering a low recurrence rate when performed with precision. The decision to use absorbable sutures for wound closure in this case underscores the importance of minimizing patient discomfort and promoting healing without the need for suture removal.

#### **Comparison with Similar Studies:**

Jones & Roberts (2020) reviewed various management approaches and confirmed that aspiration or cauterization, while minimally invasive, often results in recurrence due to incomplete cyst wall removal. Lee et al. (2022) proposed a combination of aspiration and chemical cauterization, which showed a moderate 15% recurrence rate. While effective initially, such non-surgical methods tend to pose a higher risk of complications, such as conjunctival scarring, compared to surgical methods.

Kumar et al. (2017) emphasized the importance of surgical precision, noting that improper dissection can lead to scarring and persistent irritation. A similar study by Patel and Singh (2019) highlighted the advantages of using absorbable sutures to reduce patient discomfort and eliminate the need for suture removal.

Additionally, a randomized controlled trial by Gupta et al. (2021) found that surgical excision provided significantly lower recurrence rates compared to needle aspiration, further solidifying its status as the gold standard for larger or symptomatic cysts. Another study by Liu and Wong (2020) discussed the diagnostic challenges posed by similar-appearing lesions, underlining the importance of accurate preoperative assessments like slit-lamp examinations.

Ramirez et al. (2018) explored the impact of cyst size on treatment outcomes, noting that larger cysts tend to respond better to excision, supporting the decision made in this case. Furthermore, a retrospective analysis by Costa et al. (2020) underscored the role of meticulous surgical technique in minimizing recurrence, echoing the approach taken in this case report.

Henderson and Clark (2022) suggested that follow-up care is crucial for detecting early signs of recurrence, particularly within the first six months post-surgery, which is consistent with the follow-up protocol observed in this case.

The post-operative outcomes in this case were excellent, with the patient showing no signs of recurrence during follow-up. This outcome aligns with the literature, where complete excision has demonstrated superior efficacy in preventing recurrence. The patient's rapid recovery and resolution of symptoms highlight the benefits of a meticulous surgical approach.

### **Clinical Implications:**

This case emphasizes the importance of individualized management for conjunctival cysts, with a tailored approach based on cyst characteristics and patient symptoms. It also underscores the need for patient education regarding potential treatment options, postoperative care, and possible complications. The discussion also highlights the role of slit-lamp examination and diagnostic techniques such as OCT in differentiating conjunctival cysts from other ocular lesions, ensuring accurate diagnosis.

Future studies should explore the long-term outcomes of different treatment modalities, including surgical and non-surgical approaches, to establish clear guidelines for the management of conjunctival cysts. Additionally, randomized controlled trials comparing excision with other modalities like chemical cauterization could provide valuable insights into optimizing treatment strategies.

### **Conclusion:-**

The surgical management of conjunctival cysts remains a reliable and effective approach, especially for symptomatic cases. This case highlights the importance of accurate diagnosis and individualized treatment strategies for optimal patient outcomes. Complete excision, as demonstrated in this case, minimizes the risk of recurrence and ensures resolution of discomfort. The successful outcome emphasizes the need for precision during surgery to preserve adjacent tissues and avoid complications. This case contributes to existing literature by reinforcing surgical excision as the preferred method for treating symptomatic conjunctival cysts and underscores the importance of patient-specific decision-making in ophthalmic care.

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