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Case Report

Infected Inclusion Cyst of a Conjunctival Nevus Treated with a Mini-Incision: A Case Report

Emmanouil Blavakis[a, b] Mateusz Kecik[a, b] Gabriele Thumann[a, b] Horace Massa[a, b]

[a]Department of Ophthalmology, Geneva University Hospitals, Geneva, Switzerland; [b]Faculty of Medicine, University of Geneva, UNIGE, Geneva, Switzerland

Keywords
Conjunctival nevus · Conjunctival inclusion cyst · Conjunctival abscess · Incision · Case report

Abstract
Introduction: Conjunctival cysts are usually asymptomatic but they can cause foreign body sensation and contribute to dry eye disease. The purpose of this case report is to describe the presentation and treatment of an infected inclusion cyst of a conjunctival nevus in a healthy 36-year-old patient. ***Case Presentation:*** A healthy 36-year-old man presented to the emergency department for redness and pain in his left eye for 1 day. Slit-lamp examination revealed a conjunctival hyperemia and a conjunctival nevus with 4 inclusion cysts, one of which was filled with purulent material. Fluorescein staining of the conjunctival epithelium was negative. A mini-incision of the white cyst was performed using a 30 G needle, followed by bimanual drainage and topical treatment with tobramycin and moxifloxacin drops every 3 h for a week. A swab of the purulent drainage was positive for gram-positive flora. One week after the drainage of the cyst, the patient was asymptomatic and on slit-lamp examination, the 4 inclusion cysts were filled with a transparent liquid, there was not any vessel dilation and fluorescein staining was negative. ***Conclusion:*** Conjunctival inclusion cysts, although considered benign, can become infected and form a conjunctival abscess. A mini-incision on the slit lamp combined with bimanual drainage and followed by topical antibiotic drops seems to be a safe and effective treatment.

Correspondence to:
Emmanouil Blavakis, blavakism@gmail.com

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Introduction

Conjunctival nevi are common benign tumors of the ocular surface that present with variations in localization, size and degree of pigmentation [1]. Changes in the degree of pigmentation and size as well as spontaneous regression and inflammation have been observed [1–3]. Most of the time, they are asymptomatic but they are often surgically removed for esthetical reasons or because of suspicion of a malignancy [1]. Inclusion cysts are found in 65% of conjunctival nevi and are more common in nevi of large size, and absence of them is one of the clinical features suggestive of possible melanoma [1]. Conjunctival cysts are usually asymptomatic but they can cause foreign body sensation and contribute to dry eye disease. Their treatment for medical or cosmetic reasons includes but is not limited to needling, surgical excision, thermal cautery, isopropyl alcohol injection or argon layer photoablation [4–7]. In this case report, we present a novel presentation of an infected inclusion cyst of a conjunctival nevus that was treated with a mini-incision, drainage and topical antibiotic drops.

Case Presentation

A healthy 36-year-old man of African descent known for a conjunctival nevus with multiple inclusion cysts in his left eye, presented to the emergency department of the Ophthalmology Clinic of the University Hospitals of Geneva for redness and pain in his left eye for 1 day. He also noted that one of his conjunctival inclusion cysts had become white. He did not have any history of ocular trauma or any other ocular disease. Visual acuity was 20/20 and intraocular pressure was 17 mm Hg in both eyes. Slit-lamp examination of the left eye revealed a conjunctival hyperemia nasally and a bulbar conjunctival nevus with 4 inclusion cysts, one of which was filled with white material (Fig. 1a). A feeder vessel that was dilated and tortuous was also observed. Fluorescein staining of the conjunctival epithelium was negative. A second small conjunctival nevus with one inclusion cyst was also present in the nasal bulbar conjunctiva. The cornea was clear and there were no signs of any intraocular inflammation or infection. Slit-lamp examination of the right eye was without any abnormal findings.

After topical anesthesia with an oxybuprocaine 0.4% drop (Théa Laboratories, Clermont-Ferrand, France) and disinfection with povidone-iodine 5% (Mundipharma Medical Company, Switzerland), a 1 mm length mini-incision of the white cyst was performed using a 30 G needle, followed by a bimanual drainage of a purulent material. At the slit lamp, gentle pressure was applied simultaneously on both sides of the cyst using 2 sterile eye spears (Merocel Eye Spear, Beaver Visitec International, USA) until it collapsed. Topical treatment with two broad-spectrum antibiotics such as tobramycin 3 mg/mL (Novartis, Switzerland) and moxifloxacin 5 mg/mL (Alcon Laboratories, Switzerland) at a frequency of 1 drop every 3 h for a week was applied. A swab of the purulent drainage was performed and was positive for multiple gram-positive bacteria that were considered normal flora from the microbiology laboratory, rendering further analysis impossible. The patient did not experience any pain during drainage, adhered well to medical treatment and reported a decrease in ocular pain and redness after 1 day of treatment. One week after the drainage of the cyst, the patient was asymptomatic and did not present any changes in his vision. On slit-lamp examination of the left eye, a conjunctival nevus was present with 4 inclusion cysts, all filled with a transparent liquid. Conjunctiva was calm, staining with fluorescein was negative and there was not any vessel dilation (Fig. 1b).

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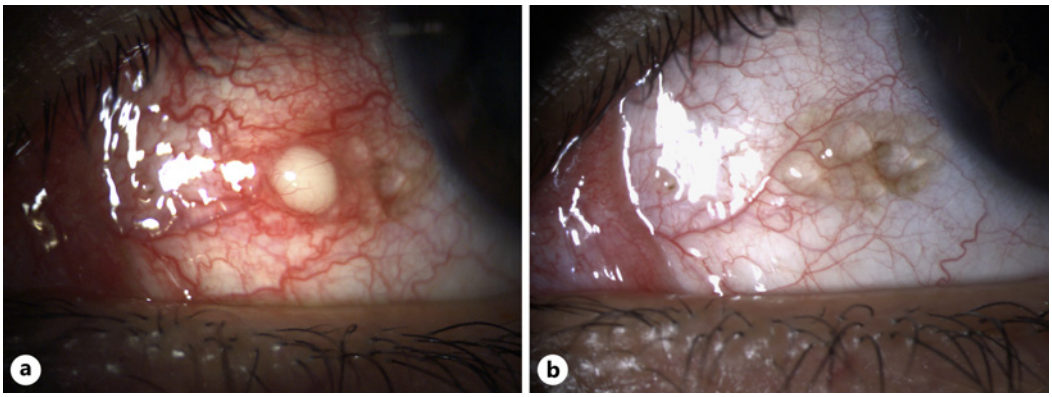

Fig. 1. Slit-lamp photography showing an infected conjunctival inclusion cyst of a conjunctival nevus before (**a**) and 1 week after (**b**) treatment.

Discussion

Conjunctival inclusion cysts can be isolated or part of a conjunctival nevus and until now they were considered benign [1]. Nevertheless, herein we present a case of an infected cyst forming a conjunctival abscess which could in certain circumstances like immunodeficiency or history of filtering surgery, have sight-threatening consequences, advocating for a more aggressive treatment. Given the absence of ocular trauma and the negative fluorescein staining, a possible hypothesis for the origin of the infection could be a micro-traumatism of the cyst due to blinking. This hypothesis is also supported by the fact that gram-positive bacteria, probably from the periocular normal flora, were found in the purulent drainage of the cyst. A thin wall of the cyst could also be a predisposing factor, as it is observed with thin and ischemic conjunctiva in cases of blebitis [8].

Multiple techniques have been tried for the effective treatment of conjunctival inclusion cysts, as simple needling or aspiration is associated with high recurrence rates [9]. However, methods that otherwise seem effective like isopropyl alcohol injection [6] and argon laser photoablation [7] cannot be performed in case of an active infection. In this case, the infected conjunctival cyst was treated like an abscess, where incision and drainage are essential for management [10]. The use of broad-spectrum topical antibiotics was deemed necessary in order to achieve early treatment and avoid dissemination of the infection. In this case, the patient was effectively managed within a week. However, in case of recurrence, surgical excision followed by histopathological and microbiological analysis should be considered.

Care should be taken in similar cases where there is no known conjunctival nevus or inclusion cyst before attempting any invasive treatment. Differential diagnosis of a conjunctival abscess should include inflamed pinguecula, episcleritis or scleritis, conjunctival neoplasms, and foreign body granuloma. Thorough medical history is of paramount importance for the identification of predisposing factors to conjunctival inclusion cysts such as strabismus surgery or conjunctival nevi, in order to characterize the evolution of the lesion through time and to exclude any history of ocular trauma.

To conclude, in this case, we present an infection of a previously asymptomatic conjunctival inclusion cyst forming a conjunctival abscess. A mini-incision on the slit lamp combined with bimanual drainage and followed by topical antibiotic drops seems to be a safe and effective treatment for such cases. However, more cases and longer follow-up are required for the understanding of the pathophysiology and the possible therapeutic approaches to this

condition. The CARE Checklist has been completed by the authors for this case report, attached as online supplementary material (for all online suppl. material, see https://doi.org/10.1159/000539846).

Statement of Ethics

Written informed consent was obtained from the patient for publication of the details of their medical case and any accompanying images. No ethics approval was required by the Committee of Human Research of the Canton of Geneva.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

All listed authors meet the ICMJE criteria. Emmanouil Blavakis and Mateusz Kecik: drafting the work. Gabriele Thumann and Horace Massa: critical review reviewing of the work for important intellectual content. Emmanouil Blavakis, Mateusz Kecik, Garbiele Thumann, and Horace Massa: conception and design of the work, final approval of the version to be published, and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Data Availability Statement

The data that support the findings of this study are not publicly available due to privacy reasons but are available from the corresponding author upon reasonable request.

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