CASE REPORT

Transcending the Red Eye: A Nearly Missed Case of Adult Gonococcal Conjunctivitis.

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Abstract
Gonorrhoea is a sexually transmitted disease with a rising incidence worldwide. Adult gonococcal conjunctivitis is relatively uncommon but poses significant risks, including corneal perforation if not treated promptly. Diagnosis can be challenging, and delayed or misdiagnosis may occur due to its resemblance to other common forms of conjunctivitis. We reported a case of a 35-year-old sexually active male with persistent unilateral conjunctivitis that did not respond to standard topical antibiotics. Further investigation revealed *Neisseria gonorrhoeae* as the causative organism. Despite developing corneal thinning, the patient responded well to prompt systemic and topical antibiotics, with preservation of vision. This case highlights the importance of taking a comprehensive history, including sexual history, to facilitate early detection and treatment, which can help prevent complications.

Keywords: *Gonorrhoea, gonococcal conjunctivitis, Neisseria gonorrhoeae, red eye.*

Introduction

N. gonorrhoeae is a Gram-negative diplococcus that is responsible for sexually transmitted infections, but it rarely causes acute conjunctivitis in adults. However, the global prevalence of gonorrhoea is rising, particularly among vulnerable populations such as men who have sex with men, sex workers, transgender individuals, and young populations. Ocular transmission typically occurs through direct contact with infected genital or urinary secretions. [1] Copious purulent discharge, severe conjunctival injection, marked oedema, and hyperaemia of the eyelids are the hallmarks of gonococcal conjunctivitis. Due to its rapid progression and resemblance to other bacterial or viral conjunctivitides, it can be easily misdiagnosed. A high index of suspicion is warranted in case of persistent, unilateral conjunctivitis that has not responded to standard treatment. Accurate diagnosis relies on a comprehensive clinical evaluation, excellent history-taking, and microbiological testing, which includes a conjunctival swab for Gram stain, which may reveal gram-negative diplococci. *N. gonorrhoeae* is one of the rare bacteria that can penetrate intact corneal epithelium, making it a potentially vision-threatening pathogen. Complications may include corneal thinning, scarring, and even perforation. Initiation of both parenteral and topical antibiotics is essential to prevent irreversible ocular damage.

Case report

A 35-year-old male with no known chronic medical illness presented with a one-week history of progressive left eye symptoms, including redness, pain, swelling, blurred vision, and profuse mucopurulent discharge. He had a history of a left corneal ulcer one year ago, which required hospital admission and resolved with residual thinning. At presentation, he was diagnosed with left eye pseudomembranous conjunctivitis.

On day two of his illness, he sought treatment at a private clinic and was prescribed topical antibiotics. However, his symptoms persisted. Two days later, he presented to the emergency department at a tertiary hospital, where he was again diagnosed with left eye pseudomembranous conjunctivitis. At that time, his visual acuity was 6/6 in the right eye and 6/24 (pinhole 6/15) in the left eye. Examination revealed swollen, erythematous eyelids with copious mucopurulent discharge and pseudomembranes over both upper and lower palpebral conjunctivae, which were removed under local anaesthesia. A faint inferior corneal opacity was noted at the 7 o'clock position, with no epithelial defect or fluorescence uptake. He was started on Maxitrol (neomycin, polymyxin B, and dexamethasone) ointment and chloramphenicol eye drops under the working diagnosis of viral or allergic conjunctivitis with membrane formation.

Despite treatment, the symptoms persisted. The patient was referred to us for further evaluation and continuation of care due to logistical reasons. Upon presentation at our clinic, his left eye vision remained 6/24 (no improvement with pinhole). Slit-lamp examination revealed thick purulent discharge actively exuding from the lower fornix (Figure 1), accompanied by conjunctival hyperaemia and chemosis (Figure 2). A localised inferior corneal epithelial defect measuring 2.0 x 1.4 mm (Figure 3) was now noted, without infiltrate or fluorescein uptake. The anterior chamber was deep and quiet, and the fundus appeared normal.

The diagnosis was revised to pseudomembranous conjunctivitis with a secondary epithelial defect over an old corneal thinning. Maxitrol was discontinued, and the patient was on ciprofloxacin eye drops every four hours and preservative-free artificial tears.

Due to poor clinical response, conjunctival swabs for culture and sensitivity were taken. By the second week of follow-up, the epithelial defect persisted, and inferior corneal thinning was more pronounced. Although there was no hypopyon or stromal infiltrate, the ongoing mucopurulent discharge raised concern for hyperacute bacterial conjunctivitis.

The conjunctival culture-confirmed *Neisseria gonorrhoeae*. A detailed sexual history was obtained after the swab cultures result. The patient is married with one child and has a long-distance relationship. The patient admitted to unprotected oral sexual contact with unfamiliar partners about one month before the onset. He denied any history of urogenital symptoms or systemic complaints.

He was admitted for inpatient management and started on:

- IV ceftriaxone: 2 g stat, followed by 500 mg daily
- Oral doxycycline: 100 mg twice daily for 7 days
- Fortified gentamicin 0.9% and ceftazidime 5% eye drops hourly
- Preservative-free artificial tears and vitamin C
- Timolol eye drops to manage mild IOP elevation

Full sexually transmitted disease screening was conducted. The HIV test was reactive, while VDRL, HBsAg, and anti-HCV were negative. He was co-managed with the infectious disease team, who provided the following:

- Post-HIV diagnosis counselling
- Partner notification and safe sex education
- Coordination for outpatient HAART initiation

The case was reported to the Public Health Unit. His spouse was referred for screening.

During admission, the patient's symptoms improved significantly. The conjunctival inflammation and discharge resolved, and the epithelial defect closed with residual corneal thinning. Upon review, three days post-discharge, the left eye's visual acuity has improved to 6/12, and he has remained stable on topical lubricants. Regular follow-ups with the ophthalmology and infectious disease teams were continued.

Discussion

Gonococcal conjunctivitis is typically associated with neonates but is becoming more prevalent among adults due to the increasing number of urogenital gonococcal infections worldwide.[2] Adult gonococcal conjunctivitis is rare, but it is a sight-threatening condition that can rapidly progress and lead to serious ocular complications if not recognised and treated promptly.

In adults, gonococcal conjunctivitis is typically transmitted through direct inoculation of the eye with infected genital secretions during sexual contact. [3] It is often associated with other sexually transmitted infections (STIs, but can present independently, without any obvious sign of genital involvement, as seen in this case. The absence of urogenital symptoms often leads to a delay in the diagnosis. Even so, early recognition and timely treatment are critical to avoid complications such as corneal thinning or, in severe cases, vision loss. [3]

This case highlights the importance of primary care doctors in identifying atypical presentations and initiating early referrals. For the first week, the patient's ocular symptoms, including pain and visual impairment, worsened. Since the cornea and visual axis are typically spared in simple conjunctivitis, these are the red flag features. Such symptoms should immediately raise suspicion for more serious pathology.

In this case, the initial diagnosis was delayed because of a lack of a comprehensive sexual history. This step, though simple, is often neglected due to time constraints, discomfort discussing sexual behaviour, or assumptions about the patient's risk profile. However, it is essential for a proper history taking, including sexual history, to identify underlying sexually transmitted infections and ensure appropriate management.

Although specific data on the prevalence of gonococcal conjunctivitis in Malaysia is limited, isolated cases have been documented locally. For example, a case reported by Anuar et al. in 2018 [4] described similar clinical features. Recently, Azmi et al. (2025) reported three cases of delayed treatment, resulting in corneal perforation, all of which were due to misdiagnosis or late referral.[5]

Our case report emphasises the importance of maintaining a high index of suspicion for non-resolving unilateral conjunctivitis, characterised by significant chemosis and purulent exudate.[6] Early microbial testing, including conjunctival swabs, should be performed if standard treatment fails. Prompt initiation of treatment is crucial in preventing ocular complications and vision-threatening conditions, such as keratitis, corneal ulcer and perforation, endophthalmitis, uveitis, and, ultimately, blindness.[7]

Additionally, our patient tested positive for HIV following the diagnosis. While he had no urogenital symptoms, his presentation underscores the syndemic relationship between gonorrhoea and HIV. Gonorrhoea facilitates HIV transmission through mucosal disruption and inflammation, which reinforces the need for comprehensive STI screening in such cases. [8] A multidisciplinary approach, including the ophthalmology, infectious disease, and public health teams, is important for effective management and contact tracing.

Currently, there are no specific Malaysian guidelines for adult gonococcal conjunctivitis in primary care, but clinicians can adopt a general framework when evaluating conjunctivitis. Features such as profuse mucopurulent discharge, visual loss, ocular pain, pseudomembrane formation, or corneal involvement should raise concern and need early referral to ophthalmology. The following practical approach may be helpful:

1. Suspect gonococcal or atypical conjunctivitis in severe, persistent, unilateral cases with corneal signs.
2. Start empirical topical antibiotics, while acknowledging the limitations of primary care settings.
3. Elicit a complete sexual history to identify STI risk, even when urogenital symptoms are absent.
4. Refer urgently to ophthalmology if red flags are present, which include reduced visual acuity, pseudomembranous formation, signs of corneal involvement, or worsening symptoms despite 24–48 hours of empirical therapy, to prevent sight-threatening complications.
5. Ensure proper follow-up and documentation. The patient should be reviewed in 2-3 days to asses clinical response. A lack of improvement should prompt a reevaluation and escalation of care.

In summary, primary care providers play a vital role in the early recognition and management of eye complaints. While most cases of conjunctivitis are self-limiting, this case highlights the importance of having a high index of suspicion for red eye to be able to recognize the warning signs that may indicate a more serious condition, such as gonococcal infection. Taking a comprehensive history, including a sexual history, and closely monitoring the treatment response can make the difference between timely intervention and permanent vision loss.

Conclusion

Adult gonococcal conjunctivitis is rare but potentially sight-threatening. This case highlights the importance of early recognition, thorough sexual history-taking, and timely referral in primary care. Prompt diagnosis and appropriate treatment can prevent serious complications and preserve vision.

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Conflicts of interest

All authors declare no conflicts of interest.

Authors contribution

NEE wrote the first and final drafts. AHS and FSS reviewed, edited, and finalized the final draft. All authors agreed with the results and conclusions.

Patients' consent for the use of images and content for publication

The patient provided consent for the use of images and content for publication.

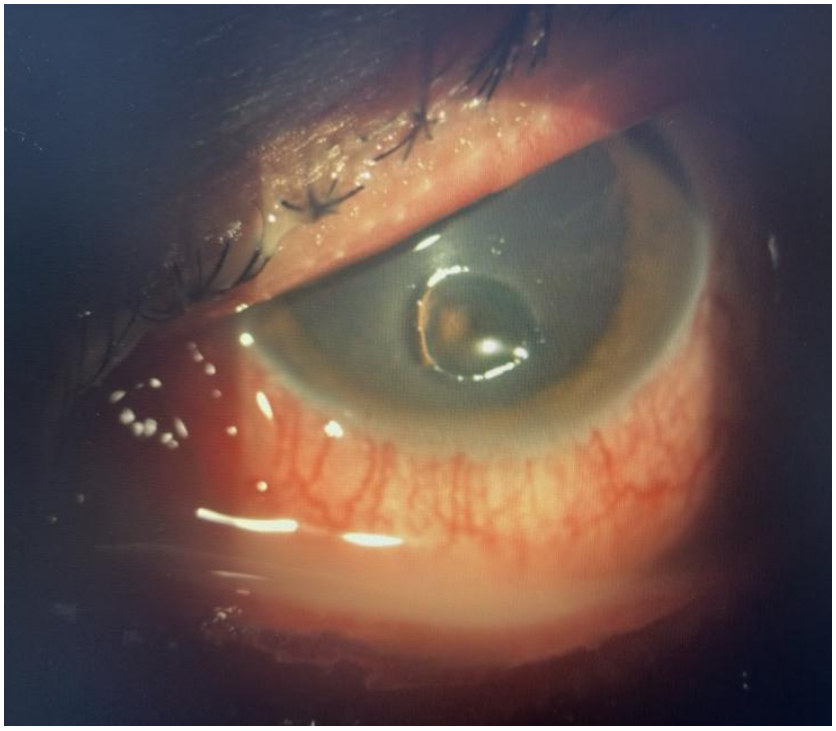

Figure 1. Slit-lamp photograph of the left eye showing thick purulent discharge actively exuding from the lower fornix along with conjunctival hyperaemia.

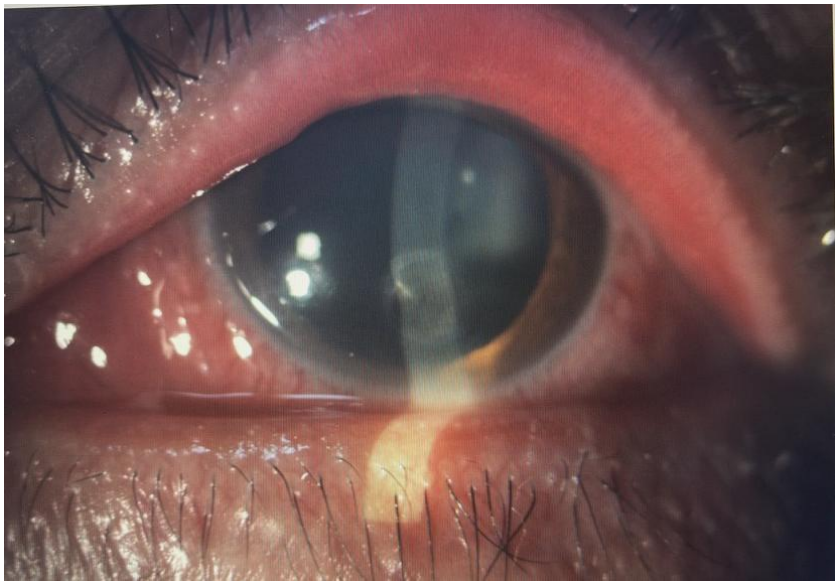

Figure 2. Slit lamp image of the same eye demonstrating conjunctival chemosis, central corneal epithelial defect with mild stromal haze.

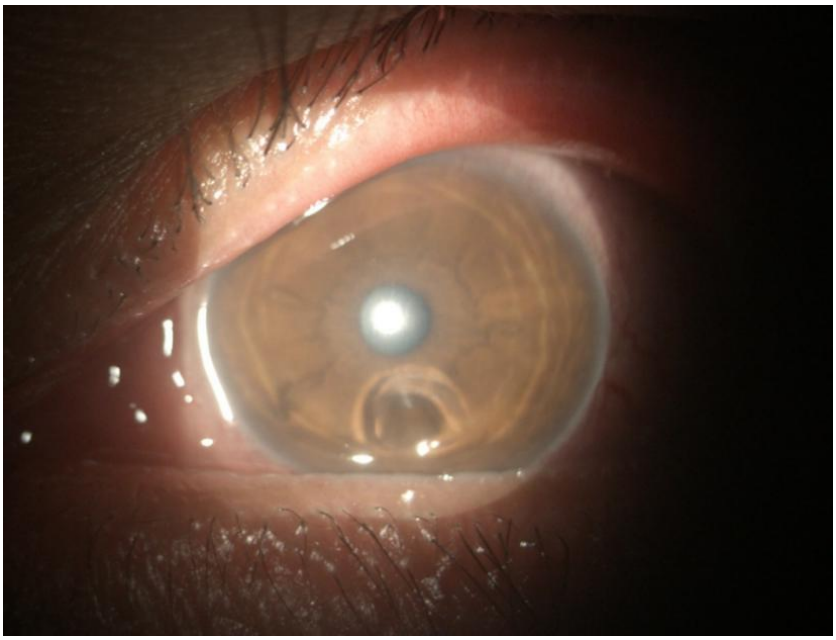

Figure 3. Slit lamp photograph demonstrating residual central corneal thinning post-infection—a well-demarcated area of stromal thinning, measuring 2.0 mm vertically x 1.8 mm horizontally.

Table1. Red flags in red eye presentation

Red Flag	Explanation / Reason for urgent referral
Visual Impairment	Not typical in simple conjunctivitis; may indicate corneal involvement
Ocular Pain	Suggests deeper involvement (e.g., uveitis, keratitis, glaucoma)
Pseudomembrane Formation	Seen in more severe infections like gonococcal conjunctivitis
Profuse Mucopurulent Discharge	Highly suggestive of hyperacute bacterial conjunctivitis
Corneal Involvement	Risk of ulceration or perforation; requires urgent ophthalmology review

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