



CASE REPORT

Corneal Ulcer Impending Perforation et causa Corpus Alienum

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Abstract

Introduction: The cornea is a transparent, avascular tissue that serves as a structural barrier and protects the eye from infection. A corneal ulcer is an inflammatory or, more dangerously, infective disorder involving abnormalities of the cornea's epithelial layer or stroma. Corneal ulcers can develop due to contact lenses, trauma, adnexal illnesses, or ocular surface abnormalities. Despite aggressive nonsurgical therapies, corneal perforation frequently occurs in the event of resistant corneal ulcers. The anatomic integrity of the eyeball must be preserved through urgent surgical intervention to avoid potentially fatal consequences such as endophthalmitis, subsequent glaucoma, perforation, or corneal scarring. **Case Presentation:** A-11-year-old male child was taken to Community Eye Hospital, East Java due to a corneal ulcer. He complained of pain and redness right after he played with bamboo two weeks ago. The patient had been previously treated in other hospitals; however, there was a worsening of symptoms rather than improvement. Clinical examination of oculus sinister revealed a conjunctival injection, episcleral injection, corpus alienum (bamboo) sized 50 mm, an ulcer in the central cornea sized 3 x 2 mm irregular, shallow anterior chamber, impending perforation in the central cornea with a diameter of 2 mm. Thus, there had shown impending perforation, and the patient had to undergo surgery, of amniotic graft and antibiotic injection immediately to avoid perforation. **Conclusions:** A perforation, an ophthalmological emergency requiring surgery, can result from corneal ulceration, a medical emergency. The primary objectives of the procedure are to restore the eye's anatomical integrity and to reduce problems as much as feasible.

Keywords: corneal ulcer; impending perforation; corpus alienum; amnion graft

Introduction

The outer layer or coat of the eyeball comprises the cornea. Its coat's primary function is to safeguard the internal ocular components. The cornea serves as a structural barrier and guards the eye against infections. It is a clear, avascular tissue.^[1] Corneal ulcer is the most frequently-occurred symptom in corneal disease. A corneal ulcer is a corneal epithelial defect, often involving the underlying stroma, frequently diagnosed and treated by ophthalmologists.^[2] Corneal ulcer may be the consequences of contact lenses, trauma, adnexal disease, topical steroid uses, severe debilitation, and ocular surface disorders; late treatment may induce irreversible damage to the human eyes.^[3]

If the acute phase of this clinical disease is not handled properly and quickly, the results could be vision-threatening.^[4] The patients may experience severe side effects, including corneal perforation, which may trigger the onset of severe ocular morbidities such as glaucoma, cataracts, or synechiae and result in vision loss. Untreated corneal ulcers can potentially lead to endophthalmitis and the resulting loss of eyesight.^[5]

Case Presentation

The a-11-year-old male child was taken to Community Eye Hospital, East Java due to a corneal ulcer in the central cornea of the oculus sinister. He complained of pain in the left eye and redness right after he played with bamboo two weeks ago. There was no active bleeding in the eye. He denied experiencing fever,

headache, nausea, or vomiting. Before presenting in our hospital, the patient had been treated with various topical therapies including antibiotic injection and hospitalized for four days in another hospital. However, rather than improvement, there was a worsening of symptoms. The patient complained of pain in the left eye, inability to open the eye, blurry vision, excessive tearing in the left eye, and photophobia.

His vital sign was blood pressure 95/70 mmHg, pulse 66, temperature 37°C, respiration rate 20x/min, and pulse oximetry 99%. Visual acuity was 6/6 in his right eye and 1/300 in his left eye. Clinical examination of oculus sinister revealed a conjunctival injection, episcleral injection, corpus alienum (bamboo) sized 50 mm, an ulcer in the central cornea sized 3 x 2 mm irregular, shallow anterior chamber, impending perforation in the central cornea with a diameter of 2 mm. The culture test has not proceeded because the patient already had local and systemic antibiotics at a previous hospital; thus, the result may vary.

Based on this result, because there is already an impending perforation on the left eye, the patient had to undergo surgery of two layers of the amniotic graft with four nylon surgical sutures and antibiotic injection of Cefotaxime 1 gr twice a day.

Discussion and conclusions

A frequent side effect of numerous corneal diseases, corneal perforations can cause severe visual impairment. The two types of etiologies are often traumatic and nontraumatic (most commonly secondary to infection or inflammation).^[6] All causes of corneal perforations fall under the category of nontraumatic etiologies, including exposure to keratitis, neurotrophic ulcers, consequences of infectious disease, and keratitis sicca, the latter of which is among the most common causes.^{[7],[8]} The perforation's etiology, size, severity, and location affect how it should be managed. Modern treatment options include penetrating keratoplasty, conjunctival flaps, and amniotic membrane.^{[9],[10]}

The occurrence of traumatic corneal thinning and perforations, regardless of the cause, is regarded as an ocular emergency and requires early treatment to restore the anatomical and structural integrity of the eye. The amniotic membrane comprises an avascular stroma, a basement membrane, and an epithelial monolayer.^[11] According to research, amniotic membrane is a perfect patching material for traumatic corneal perforations, especially those with an inflammatory cause, because it encourages epithelial migration, acts as a scaffold for corneal restoration, and has anti-inflammatory and antiproteinase capabilities.^{[12],[13]} It can be used as a long-term treatment or a temporary fix until the swelling goes down and a definitive reconstructive procedure can

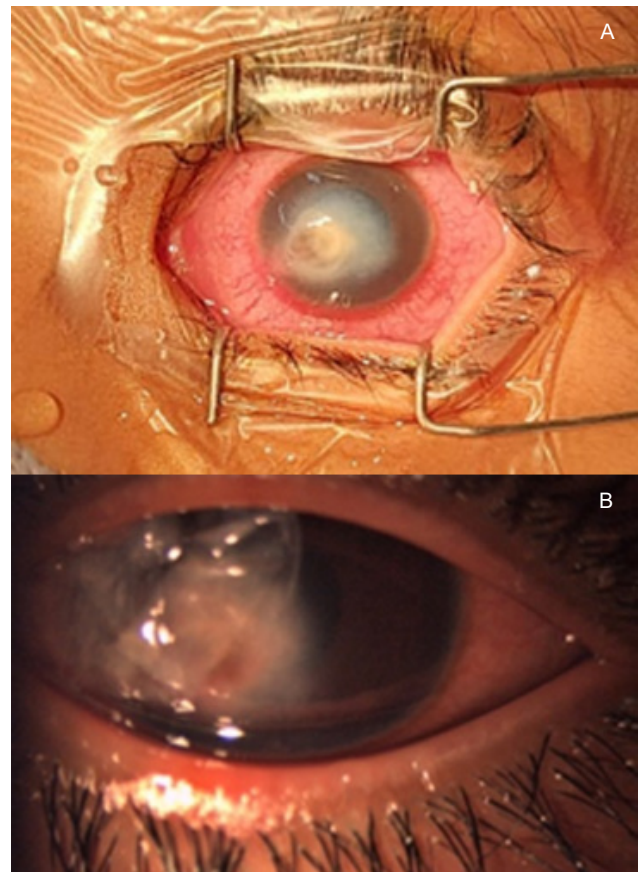


Figure 1. (A) Impending perforation in the central cornea diameter of 2 mm; and (B) One day after the amnion graft.

be done. This therapeutic method is also advantageous in nations where corneal tissue is scarce.^[14] Successful medical and surgical treatment also relies upon control of ocular surface disease, neurotrophic factors, and systemic autoimmune conditions when present.

A surgical ophthalmological emergency results from persistent corneal ulcerations that result in perforation. The primary objectives of the procedure are to restore the eye's anatomical integrity and to reduce problems as much as feasible.

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