

Retained corneal glass foreign body: look for it or miss it!!

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Abstract

Microbial keratitis (MK) is a potential vision-threatening condition that involves cornea and mandates prompt diagnosis and treatment to prevent untoward outcomes. Corneal foreign bodies (CFBs) are a common cause of presentation to ocular emergencies and can be a predisposing risk factor as well as a differential diagnosis of MK. We present a case of superficial glass CFB that can be mistaken as MK by any novice ophthalmologist.

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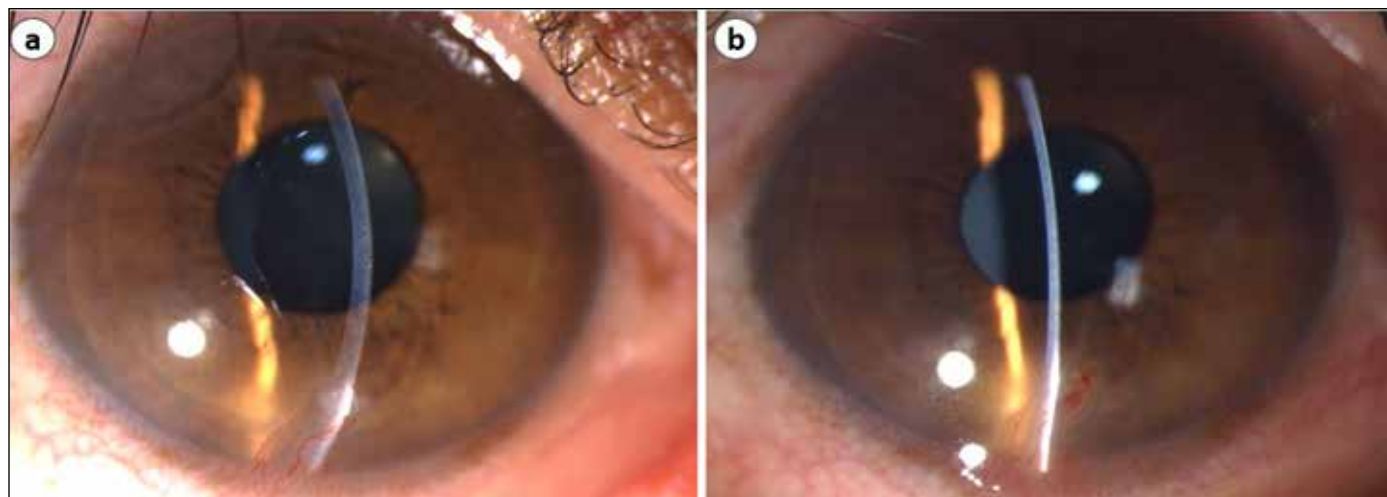
Keywords: Microbial Keratitis, Corneal Foreign Body, Glass

Microbial keratitis (MK) is a potential vision-threatening condition that involves cornea and mandates prompt diagnosis and treatment to prevent untoward outcomes.¹ Corneal foreign bodies (CFBs) are a common cause of presentation to ocular emergencies and can be a predisposing risk factor as well as a differential diagnosis of MK.²

A 42-year-old-healthy-male presented with ocular irritation and localized redness, without an associated photophobia or diminution of vision, OD for 2 weeks. On examination, visual acuity OU was 20/20. Slit-lamp biomicroscopy revealed a 3×2 mm well defined elevated corneal lesion in the inferotemporal part of the right eye with localized limbal vascularization and conjunctival hyperemia (Figure 1a) that did not take up fluorescein or rose bengal staining and quiet anterior chamber and normal posterior segment examination OD. On eliciting detailed occupational history, the patient revealed to be an employee in glassware industry for the past 10 years, usually worked without wearing protective eye wear and reported frequent history of trivial trauma while molding glass. However, he did not remember sustaining a similar trauma prior to the onset of present signs and symptoms. Various differential diagnosis of superficial CFBs can be ocular surface neoplasia, corneal keloid and Salzmann

nodular degeneration. The age was against diagnosis of neoplasia and the other two conditions are usually associated with a long-standing presentation and chronic underlying disorder ruling them out in the present case. MK was ruled out by absence of other signs of infection such as discharge, epithelial defect, anterior chamber reaction or photophobia. The glass CFB, suggested by its characteristic occupational history, was extracted in-toto with the aid of a non-traumatic forceps (histopathological examination demonstrated Glass particle) revealing an underlying vascularized area with bare stroma that stained positively with fluorescein dye (Figure 1b) and showed complete resolution of signs and symptoms at 4-weeks follow-up on an antibiotic-steroid-lubricant combination.

Commonly encountered superficial CFBs include metal fragments, stone and wood pieces and rarely glass splinters. In most cases, trauma with glass CFB occurs from explosion of glass object, as seen in our case, where high kinetic energy compensates for its low weight. As they are rarely encountered, at their first look, these can be mimic MK. As they can sometimes go unrecognised even on sophisticated imaging modalities such as computerized tomography, eliciting a detailed occupational history is mandatory for



Figures 1: Localized elevated lesion in the inferotemporal part of the cornea with surrounding conjunctival hyperemia (a); intense vascularization seen underlying the foreign body after its removal (b)

their appropriate diagnosis.³ Both MK and CFB are primarily clinical diagnoses and advanced corneal imaging with anterior segment optical coherence tomography may not be mandatory for their diagnosis and management.

Removal of any CFB must be weighed against the hazards of its removal and the necessity for close follow-up. While neutral sodium silicate (98%) in the transparent glass CFBs make them inert and innocuous to the eye, rarely, corneal edema, cataract or iridocyclitis can result from its delayed secondary movement.^{4,5} In our case, it was removed instantly as the patient was symptomatic due to its presence.

The purpose of the present photoassay is to create awareness about such rare and misleading presentations of glass FBs and to emphasize on detailed history taking, especially occupational, in establishing a correct diagnosis. This may not only prevent unnecessary mismanagement of the patient but also lay emphasis on utilization of protective measures such as safety goggles in employees working in such factories.

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