

EYES CANNOT SEE WHAT THE BRAIN DOES NOT KNOW

Aisyah Amirah binti Mohd Zahari^{1*}, Sujaya Singh¹, Firdaus Ujang²

¹University Malaya Eye Research Centre, Ophthalmology Department, Faculty of Medicine, University of Malaya, Malaysia

²Kementerian Kesihatan Malaysia, Wilayah Persekutuan Putrajaya, Malaysia

*Corresponding Author's Email: aisyahamirah.mzk@gmail.com

ABSTRACT

Background: Intraocular foreign body (IOFB) is a common ocular trauma and is a leading cause of visual impairment. Majority of the cases reported the occurrence at the workplace and usually related to activities involving metallic objects. Hammering, drilling, explosion and usage of machining tools are among the causes of IOFB. Foreign body in the angle are frequently missed as it is not visualised directly during a routine examination. Thus, a thorough examination which includes gonioscopy and imaging must be done in all penetrating and full thickness cornea laceration cases. **Purpose:** We report a case of self-sealed full thickness cornea laceration with presence of metal foreign body in the angle. **Method:** Case Report **Result:** A 19 year-old boy, presented with right eye discomfort following trauma 1 week prior to presentation. Examination revealed a self-sealed full thickness cornea laceration at 1-2 o'clock with a foreign body found seated on the angle from gonioscopy. A foreign body consist of metal had successfully removed surgically with the facilitation of intraocular magnet. **Conclusion:** All self-sealed penetrating injury to the eye required a high index of suspicious of intraocular foreign body. An imaging and complete examination with dilated fundus examination and gonioscopy will be helpful to identify the location of foreign body. Hence, definitive treatment will prevent long term complication related to intraocular foreign body.

Keywords: *Intraocular Foreign Body (IOFB); Foreign Body In Angle; Ocular Trauma*

INTRODUCTION

Intraocular foreign body (IOFB) is a common ocular trauma and is a leading cause of visual impairment. Metal is the most frequent foreign body found followed by non-metal materials such as glass, wood piece and plastic. The presence of foreign body specifically metal intraocularly may lead to multiple complications. These complications depend on the site, size and location of the foreign body. In a retrospective study by Zhang *et al.*, 72.28% of intraocular foreign body were found to be located in the posterior segment followed by 21.39% in the anterior segment and 6.33% in both; anterior and posterior segment (Pujar, Narayan & Sushma, 2015). The presence of foreign body in the anterior segment may lead to complications such as cornea oedema, decompensated cornea, glaucoma, uveitis, hyphema and toxicity (Denniston & Murray, 2018). Among all M. *et al*, copper is the most toxic intraocularly. (Denniston & Murray, 2018)

CASE REPORT

A 19 year-old boy, presented with right eye discomfort for 5 days. There was history of trauma one week prior to presentation. He was hammering a metal container at the workplace when a foreign body went into his right eye.

Upon examination, relative afferent pupillary defect (RAPD) was found to be negative and visual acuity of bilateral eyes were 6/6. Clinical examination noted 1.5mm length self-sealed cornea laceration at 1-2 o'clock position. Fundus examination was unremarkable. Gonioscopically noted a foreign body in the angle at 7 o'clock location. The foreign body was removed surgically through the conventional method. The foreign body was a metal measuring 1mm by 1 mm. Postoperatively right eye recovered well and uneventful. Post-operative vision was maintained 6/6 with intraocular pressure of 12.

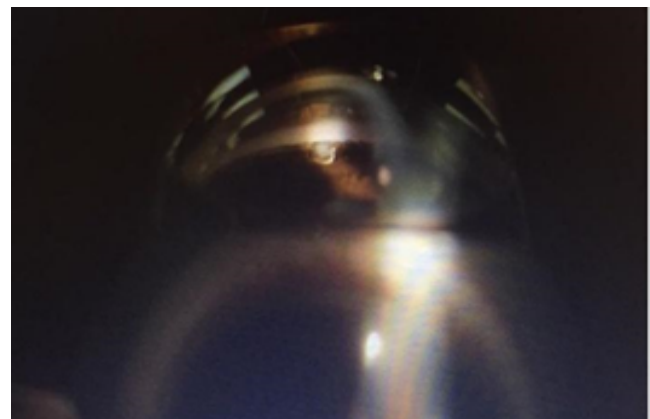


Figure a. *Foreign body seen in the angle*

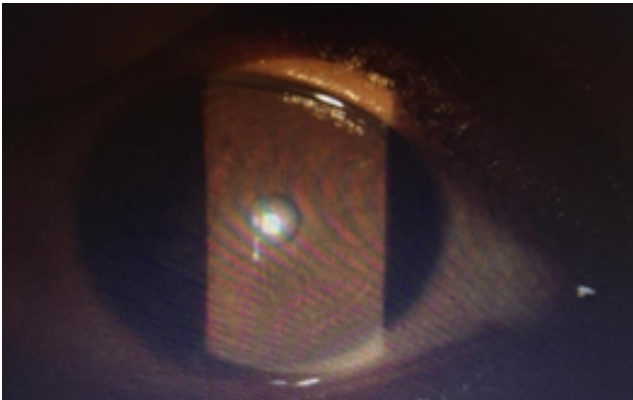


Figure b. Full thickness cornea laceration

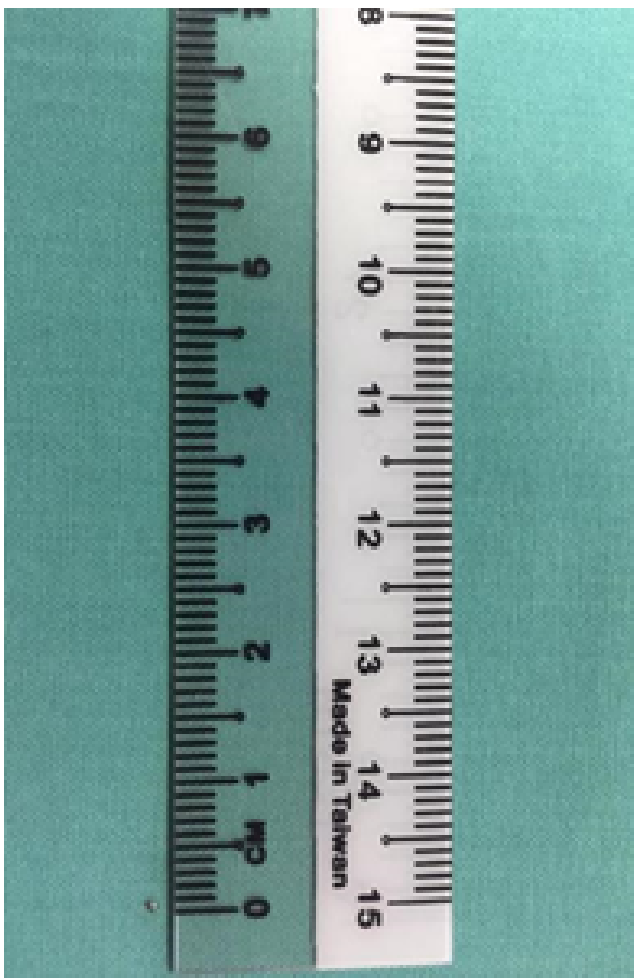


Figure 4: Foreign body which is a metal measuring 1mm x 1mm

DISCUSSION

To our knowledge, cases of intraocular foreign body following penetrating ocular trauma are frequently

reported. However only a few numbers of cases of foreign body in the angle were reported (Katyayani, Chandran & Vijayaraghavan, 2018). Two most common culprits are iron and copper (Pujar, Narayan & Sushma, 2015 and Jastaneiah, 2010). Foreign body in angle can easily be missed as not commonly detected through our routine eye examination. Thus, a thorough examination which includes gonioscopy is required. Imaging such as x-ray or CT scan may be necessary to locate and identify the foreign body (Davidson & Sivalingam, 2002). Hyperdense and well-defined lesion was detected in the orbital x-ray of our patient which is consistent with the foreign body location. Ultrasound biometry is one of the advanced and recent modalities used to detect anterior segment foreign body (Davidson & Sivalingam, 2002; Laroche, Ishikawa, Greenfield, Liebmann, & Ritch, 1998 & Moura, Hayashi, Rocha, Allemann, 2012). This study can provide composition, path and localization of the foreign bodies and associated lesions (Davidson & Sivalingam, 2002; Laroche, Ishikawa, Greenfield, Liebmann, & Ritch, 1998). Many case reports suggested that gonioscopy and ultrasound biometry are the most useful in detecting and locating foreign bodies (Laroche, Ishikawa, Greenfield, Liebmann, & Ritch, 1998). However due to limitation of access to ultrasound biometry, it was not done in this case.

It is crucial for us to exclude the presence of intraocular foreign body as it can lead to devastating complications. The complications are much more related to the location of foreign body. The intraocular foreign body located in the anterior segment may result in cornea oedema, decompensated cornea, uveitis, endophthalmitis, hyphema, glaucoma and toxicity. (Pujar, Narayan & Sushma, 2015; Denniston & Murray, 2018 and Jastaneiah, 2010) The material like copper and iron cause toxicity which in long term may lead to secondary optic atrophy and glaucoma (Huang, Yan, Cai & Li 2017). According to references, incidence of endophthalmitis in cases of IOFB after penetrating injury is 4.7 to 13.5% (Jastaneiah, 2010 & Huang, Yan, Cai & Li 2017). We probably did not see much of the complications in this case as the presentation was early and surgical removal was carried out immediately (Katyayani, Chandran & Vijayaraghavan, 2018). However, the complications can still develop down the timeline of the injury.

CONCLUSION

All self-sealed penetrating injury to the eye required a

high index of suspicious of intraocular foreign body. An imaging and complete examination with dilated funduscopy and gonioscopy will be helpful to identify the location of foreign body. Hence, definitive treatment will prevent long term complication related to intraocular foreign body.

Conflict of Interest

The authors declare that they have no conflict of interest.

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