

# A humongous intraorbital foreign body in a “possessed” patient

Kok Foo Lee<sup>1</sup>, Siti Raihan Ismail<sup>1</sup>, Adil Hussein<sup>1</sup>, Mohtar Ibrahim<sup>1</sup>, Hasanah Che Ismail<sup>2</sup>, Win Mar@Salmah Jalaluddin<sup>3</sup>

<sup>1</sup>Department of Ophthalmology, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

<sup>2</sup>Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

<sup>3</sup>Department of Radiology, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

**Correspondence to:** Adil Hussein. Department of Ophthalmology, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia. adilh@kb.usm.my

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## Abstract

• A 39 years old gentleman presented with red painful right eye. He had self-inflicted an injury to his right eye with a wooden stick and he saw a vision of an old man indicating him to do so. Clinically, the right eye was moderately proptosed, complete ophthalmoplegia and the periorbital skin was severely swollen. Imaging showed right orbital cellulitis with inferior ophthalmic vein thrombosis, bilateral cavernous sinus syndrome and impending cavernous sinus thrombosis. No intraorbital or intraocular foreign body was reported. Despite aggressive intravenous antimicrobials, the patient's condition was not improved. Exploration done under anesthesia exposed a huge wooden stick at the inferior fornix. Patient showed a remarkable recovery after the removal of the foreign body and intensive antibiotics therapy. A diagnostic challenge may occur in psychiatry patient that a possibility of self-inflicted injury. A detail history, examination and appropriate investigations are mandatory to reveal the underlying etiology. A high index of suspicion and correlated clinical findings with imaging studies are the most helpful guide in managing intraorbital foreign body and orbital cellulitis. Prompt diagnosis and treatment could potentially prevent further serious morbidity or mortality.

• **KEYWORDS:** wooden intraorbital foreign body, orbital cellulitis, self-inflicted injury, psychiatric patient

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## INTRODUCTION

Intraorbital foreign body (IOFB) is a rare phenomenon involving accidental and non-accidental presence of foreign body in the eye globe. Many case reports have been published from around the world, frequently reporting bizarre manners in which the IOFB were introduced into the eye globe. There were many previous reports of wooden IOFB<sup>[1,2]</sup>. Most of the reports focused on similar problem as ours, which is the difficulty of imaging in detection of wooden foreign body. This is because they have the same radio-density to air. In addition, a diagnostic challenge may occur when patient is concurrently mute and experience psychotic symptoms. Not only the history is limited but also what is obtained is unreliable. Here we would like to report a bizarre and interesting case involving a huge foreign body in the orbit. A retained orbital wooden foreign body can cause serious complications if left undetected<sup>[3]</sup>. Prompt surgical treatment combined with aggressive medical management may preserve patient's vision with improvements in visual acuity and ocular movement.

## CASE REPORT

A 39 years old Malay gentleman was presented to us via emergency eye clinic with red painful right eye for 4 days duration. He gave a history that he had self-inflicted an injury to his right eye with a wooden stick. He also claimed that he saw a vision of an old man indicating him to do so. Clinically, the right eye was moderately proptosed, complete ophthalmoplegia and the periorbital skin was severely swollen suggesting of orbital cellulitis. The left eye also showed with similar findings but of lesser severity. Both eyes' posterior segments were normal. The right eye's relative afferent papillary reaction was positive indicating optic neuropathy. The left eye pupil was mid-dilated but reactive to light. The computed tomography (CT) scan of the orbits showed right orbital cellulitis with inferior ophthalmic vein thrombosis, bilateral cavernous sinus syndrome and impending cavernous sinus thrombosis. However there was no intraorbital or intraocular foreign body reported. There was no evidence of paranasal sinuses infection or dental caries. The blood cultures were



**Figure 1** A wooden foreign body embedded at the infero-nasal site A: 71mm × 2mm; B: Right eye; C: A similar wooden stick in the orbital cavity.

examined and no organism was seen. The conjunctival swab culture showed a mixed growth of microorganism. Aggressive treatment was initiated. Intravenous cloxacillin, metronidazole and ceftazidime were given. Subcutaneous Clexane 60mg b. d. (antithrombolytic agent) was started. Despite the aggressive management, patient's condition deteriorated. A second CT scan of orbit and orbital B-scan revealed a retro-orbital cellulitis changes, but there was no foreign body noted. One week later, the right eye swelling was slightly reduced. During eye examination a blackish hard object was noted seated deep in the inferior fornix. Exploration done under anesthesia exposed a wooden stick measured 7.1cm with 2.0mm diameter (Figure 1A) at the medial one third of the inferior fornix of the right eye (Figure 1B). The stick was lying on the floor of the orbit without any evidence of globe penetration. Patient showed a remarkable recovery after the removal of the foreign body and intensive antibiotics therapy for two weeks. Both eyes vision recovered well with 6/6 visions and full extraocular movement. His psychotic spell was transient and he recovered to his pre-morbid personality and functioning without long-term psychotropic medication. His abnormal behaviour was attributed to a dissociative state.

## DISCUSSION

There were many cases of orbital injury by wooden foreign body reported, mostly resulting from a low-velocity injuries in young men and children<sup>[4]</sup>. Other varieties of orbital foreign bodies were also reported. These include glass, stone, metal, wood, graphite, button, faucet handle, fish jaw, iron hat peg, chopstick, pencil, pocketknife, meat hook, and pitchfork<sup>[5]</sup>. The first case of orbital injury by wooden foreign body was reported in 1910, in a 25 months old child. Several aspects of this case are important. In our case, we have recognized the orbital cellulitis but yet we have no idea about the underlying etiology. All investigations have showed negative results. An IOFB must be ruled out in all orbital cellulitis until proven otherwise. IOFB is one of the major causes of orbital cellulitis. We must always be highly suspicious on the information provided by the patient or his relatives. A possibility of self-inflicted injury may occur in

psychiatry patient; even if it is beyond our expectation and imagination. A thorough physical examination must be carried out, the foreign body may be covered by inflamed and chemosed conjunctiva which obscure the view and hide the foreign body. Furthermore, the associated wound may be small and self-sealing that makes detection more difficult. The orbital wooden foreign body was not detected by any imaging modalities. This condition is similar to previously reported case. Wood can have a similar radio-density to air and therefore not be visible on plain radiographs, ultrasonography or computed tomography (CT)<sup>[1,2]</sup>. In addition, the orientation of foreign body in relation to the plane of the scanning beam and structures of similar density plays a significant role. Therefore, it is recommended that MRI scan should be performed after a negative CT scan if there is a possibility of a wooden IOFB. The MRI scan may be performed as the primary imaging modality if there is a definite history of a wooden intraorbital foreign body<sup>[5]</sup>. The CT scan findings of wooden foreign bodies may vary over time. A few weeks, the density of the wooden material decreased to less than that of fat. Thus, it may be mistaken as air. After a few months later, the density is similar to that of extraocular muscle or other surrounding tissues. Later foreign body becomes more evident due to accompanied calcification and inflammatory membrane formation. A wooden foreign body with length of 7.1cm and 2mm diameter embedded on inferior orbital floor may cause extraorbital tissue damage, and extraocular muscle injury (Figure 1C). Mostly, it's travelled toward the orbital apex that may injure the optic nerve, the surrounding cranial nerves, paranasal sinuses and cavernous sinus. Fortunately, patient had recovered well without any serious complication after the removal of foreign body. There are several reasons why an IOFB results in serious complications. It's relatively soft and organic nature and with porosity makes it easy to fragment and to harbor various microorganisms. Without appropriate treatment orbital infection may lead to serious complications, even death. Retained organic foreign body is capable of causing purulent inflammation, abscess formation, gangrene, tetanus, chronic pathologies

(granulomatous tissue, fistula formation, otitis media)<sup>[5,9]</sup>.

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## 精神病患者巨大眶内异物 1 例

Kok Foo Lee<sup>1</sup>, Siti Raihan Ismail<sup>1</sup>, Adil Hussein<sup>1</sup>, Mohtar Ibrahim<sup>1</sup>, Hasanah Che Ismail<sup>2</sup>, Win Mar@ Salmah Jalaluddin<sup>3</sup>  
(作者单位:马来西亚吉兰丹,马来西亚理科大学<sup>1</sup>眼科;<sup>2</sup>精神科;<sup>3</sup>放射科)

通讯作者:Adil Hussein. adilh@kb.usm.my

#### 摘要

患者,男,39岁,以右眼红、痛入院。他受到一个老者暗示将自己的右眼用木棒击伤。临床表现为右眼中度突出,完全性眼肌麻痹和严重眶周皮肤肿胀。眼科影像学表现为右眼眼窝蜂窝组织炎及眼下静脉血栓形成,两侧海绵窦综合征和海绵窦血栓。报告中无眼内及眶内异物。积极使用静脉抗生素,患者的病情并没有得到改善。在麻醉下检查发现在穹窿下有一个巨大的木质异物。异物去除及强力抗生素治疗下患者病情明显恢复。诊断中发现受伤原因可能是由这个精神病患者自我伤害引起。详细的病史、检查及合理的调查揭示其潜在的病因。敏锐的察觉及相关的临床发现与影像学研究在眶内异物及眶蜂窝组织炎处理中显得尤为有效的。及时诊断和治疗可能进一步减少患者的发病率或死亡率。

**关键词:**眶内木质异物;眼眶蜂窝组织炎;自我伤害;精神病患者