

## **Case report: Penetrating orbital injury with a large bamboo stem**

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### **Abstract:**

Ocular trauma is a common cause of loss of sight and sometimes can be life threatening. The presentations can be diverse. We presented a case of orbital trauma with a large fragment of bamboo stem causing penetration of upper-lid, medial rectus injury with orbital floor fracture and penetration deep into maxillary antrum. After assessment of the vitals and stabilizing the patient, the operative procedure was undertaken on elective basis. The post-operative period was smooth apart from few episodes of vomiting and difficulty in opening the mouth. The final visual outcome was excellent, with a visual acuity of 6/12 on 4<sup>th</sup> post-operative day, and 6/9 at the end of 3rd weeks post-operatively in the same eye.

**Keywords:** Bamboo, injury, trauma.

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### **Introduction**

Ocular trauma is a leading cause of blindness <sup>[1]</sup>. The causative agents implicated in such cases are variable and related to the occupation and daily activities of the person. While there have been reports of blinding ocular trauma caused by common objects like wood pieces, pencil, firecrackers, there also have been reports of such trauma, caused by unusual objects like horse hoof, <sup>[2]</sup> paintball pellets<sup>[3]</sup> and grease from high hydraulic machinery<sup>[4]</sup>. We present an unusual case of orbital trauma with medial rectus laceration by a large bamboo stem.

### **Case Report**

A 19-year-old male patient presented to our emergency with injury to his left eye. The incidence took place at Midnapore, a town in district West Midnapore of West Bengal. The victim was riding a bicycle when he just lost his control and fell on the ground facing a bamboo

stick. That resulted in bamboo stick penetration through the left upper lid into the left orbit and entered into the left maxillary sinus.

Vision at presentation could not be recorded in left eye due to lid swelling and inability to open the eyes. Emergency room examination revealed a pulse rate of 102 per min, blood pressure 110/70 mm of Hg and Glasgow Coma Scale score of 15. A deep laceration was noted over his right temple which extended to the right upper eye lid and globe. A bamboo stem was seen stuck into the medial one third of the left upper lid around 3 mm above the lid margin. The visible length of the stem was around 6 cms [fig 1a and 1b]. The lower lid was intact. Attempted ocular examination by prying the lids apart failed. An X-ray of the skull and orbit was obtained. After establishing an intravenous catheter, proper resuscitation with intravenous fluids was done. Systemic broad spectrum antibiotics were started and pain management was

done with analgesics. Blood samples were sent to blood bank for cross matching and two units of properly matched blood were kept in reserve. Once the vitals of the patient were stable, he was sent for CT SCAN of brain, orbit and paranasal sinuses. The CT SCAN showed fracture of the inferior wall of left orbit with collection in left maxillary sinus, and fracture of posterior wall of left maxillary sinus [Fig 3]. After reviewing the reports and consultation with ENT specialists, patient was taken to the operating room and was explored under general anaesthesia.

After meticulous dissection, the bamboo stick was taken out. A partial thickness medial rectus injury was noted, but, the globe was intact. After local cleaning and securing the bleed, the medial rectus was repaired with 8-0 polygalactin sutures. Upper

lid laceration was repaired with 8-0 polygalactin sutures. Dimensions of the bamboo stem were 15 cms X 1.6 cms measured post-operatively [fig 2]

Patient was kept under observation. Intravenous antibiotics and analgesics were continued. Post-operative recovery was smooth, apart from two episodes of vomiting and difficulty in opening the mouth on second post-operative day. On the fourth post-operative day, lid swelling was reduced, patient was able to open his mouth with some difficulty. Vision in the left eye was 6/12. There was no diplopia in any gaze. Ocular movements were full. On indirect ophthalmoscopy, macular oedema was noted. He was treated with Nepafenac 0.1% ophthalmic solution thrice daily for three weeks, and at the end of three weeks he had a vision of 6/9.



Fig 1a



Fig 1b



Fig 2

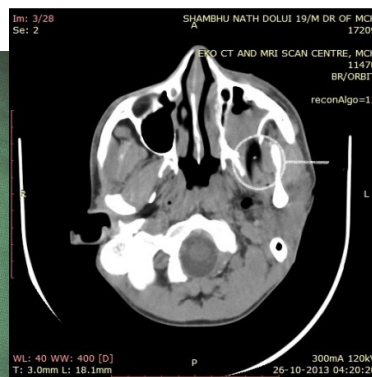


Fig 3

## Discussion

Penetrating ocular trauma is a leading cause of unilateral blindness.<sup>[1]</sup> Different modes and settings of the trauma may necessitate a change in the approach to the management of such cases. Like in our case, a prompt use of antibiotics and intraoperative hemostasis were the cornerstone of the successful revival of the patient.

The impacted foreign body in the orbit may be organic or inert. Organic foreign bodies like wood need to be removed at the earliest due to the associated high risk of infection. Inert materials like glass, plastic or steel are associated with lesser risk of infection and a decision to remove them should be based on factors like site of impingement, size of the foreign body, potential of secondary injuries and hemostasis<sup>[5]</sup>. The physical characteristics of the foreign body like mass and shape are also of prognostic importance. Woodcock *et al.*<sup>[6]</sup> from UK had found that foreign bodies of greater mass were associated with worse visual outcome. Lid laceration and adnexal injuries have

been found to be among other factors associated with eventual enucleation of the injured eye.<sup>[7]</sup>

X-ray and computed tomography scan remain the investigations of choice for ocular or orbital trauma cases. The decision to operate should be based upon proper evaluation of the systemic condition of the patient. Many reports have found that deferral of surgical procedure until stabilization of patient did not influence the final visual outcome<sup>[7,8]</sup>. In the present case operative procedures were undertaken the next morning after overnight resuscitation. The decision to defer the operation immediately was based on the fact that preparation for any possible intraoperative hemorrhage was deemed necessary before surgery. In extreme cases Bhaduri *et al.*<sup>[9]</sup> had reported removal of a wooden foreign body from the anterior chamber of an eye after 25 years of initial injury with good postoperative vision.

In our patient the systemic condition at presentation was sufficient enough for us to postpone the surgical intervention till the next scheduled operative session and the final outcome of the surgery was excellent.

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