Orbito-Cranial Penetration By A Wooden Foreign Body-A Case Report

Dr. K.V. Raju MS, DO, Dr. Arun Kumar MS, DO, Dr. Anitha Jose, Dr. Anoop B

A sixty-year-old man was presented to the casualty with a piece of wood, which had pierced below the right lower eyelid and was partially protruding out.

On examination

Patient was conscious and oriented with stable vitals. A piece of wood was seen piercing between the inferior orbital margin and globe of the right eye. Part of it was protruding out.

Eyelids were normal. Extra ocular movements were tested and elevation and depression were found to be decreased. Slit lamp biomicroscopic examination revealed an apparently intact globe, normal conjunctiva and cornea, shallow anterior chamber, a mid-dilated pupil with effervescent pupillary defect, a clear lens, and a grossly normal fundus with mild media haze. Visual acuity in the right eye was finger counting at 2 metres and the intraocular pressure was found to be low.

Left eye was normal. Direct and consensual pupillary reflexes were normal.

Considering the nature of the foreign body, an MRI was ordered.

MRI showed the foreign body of length seven centimeters to be passing between the right globe and inferior orbital margin, passing laterally, piercing the inferior orbital fissure and reaching the infratemporal fossa.

Assistance from the Neurosurgery and ENT departments were obtained and the emergency exploration and removal of the foreign body under general anesthesia was performed.

Surgery

An incision was placed below the entry site, separating the soft tissues around, in an attempt to delineate the foreign body. It was abutting the globe and pushing it up. While supporting the FB from below and applying firm traction from above, visualizing it all through out, the FB was taken out. A lot of fragments were left behind which were taken out individually.

A suction drain was put and the wounds were closed. On examining the globe, the anterior chamber was shallow, the pupil was mid-dilated and the eye was very soft however no breach of the sclera was found. The eye was padded with antibiotics. Patient was put on broad-spectrum antibiotics and anti-fungals.

Medical College Hospital, Calicut
**First post operative day:** Evaluation on the first postoperative day showed a stable general condition, and normal extraocular movements. Slit lamp biomicroscopy revealed a clear cornea, formed anterior chamber mid dilated pupil non reactive to light, lens subluxation and a quiet anterior chamber. The patients vision improved steadily from 6/60 on first postoperative day to 6/9 at the end of the first week.
Discussion

Transorbital intracranial penetration by a wooden foreign body is unusual. The resilience of the sclera and ability of the globe to be displaced usually protect the eye from perforation. The reason for the efferent pupillary defect could be an injury to the ciliary ganglion. The low intraocular tension can be attributed to a ciliary shut down due to the mechanical effect of the foreign body.

Metallic objects and glass fragments are the foreign bodies most often encountered in the orbit, although CT, is excellent in identifying these high density objects, it is much less sensitive for low density objects. MRI is more sensitive for delineating the extent of orbital injury and is safe when non-magnetic foreign body such as wood is suspected. The porous organic nature of wood and its frequent proximity to soil makes it an ideal reservoir for bacteria and fungi.

Children are particularly prone to Transorbital cranial injury because the orbital bone offers little resistance. The spectrum of intracranial complication as a result of penetrating orbito cranial injury includes immediate structural injury, which is potentially fatal or can lead to permanent neurological deficit. Vascular complications include thrombosis, occlusion, pseudo-aneurysm, rupture and carotico- cavernous fistula. Infectious complications are more common in Transorbital injuries compared with other types of cranial injury due to the proximity of the orbit to the Para nasal sinuses. Ocular complications include optic nerve damage and resultant severe loss of vision, extra ocular muscle palsy secondary to direct muscle trauma or nerve damage, proptosis and macular edema. In our case, since the foreign body did not damage any vital structures, the patient did not develop any neurological complications.

Conclusion

Orbital foreign bodies constitute an interdisciplinary challenge and help from Neurosurgery and ENT departments should be sought in every case.

References