Case Report

Power Plug of a Mobile Phone Charger in the Orbit: A Case Report of a Domestic Injury

Abstract

Background: This is the case of a girl who sustained orbital injury while playing with a mobile phone charger. **Case Report:** The patient presented to the tertiary hospital 5 h after she sustained a penetrating injury with the power plug of a mobile phone charger to the right upper lid. There was associated headache, tearing, bleeding, discharge, and inability to open the right eye. **On Examination:** She was ill-looking and anxious, not febrile or pale. Systemic examination did not reveal any abnormality. Unaided visual acuity in the right eye (OD) could not be tested, left eye (OS)—6/9. The right eyelid was completely closed with a penetrating power plug of the phone charger in the supero-lateral aspect of the upper eyelid. A diagnosis of penetrating power plug of a charger in the right upper lid and orbit was made. Computed tomography scan showed the power plug of the charger in the right orbit with a little blood collection in the right maxillary sinus. She underwent examination under anaesthesia, foreign body removal, and repair of the lid penetration. The findings were right upper lid penetration with ptosis, corneal epithelial erosion, phone charger power plug in the medial orbital wall, and cataract. The foreign body was removed, and lid and conjunctival lacerations repaired. Eight weeks post-operatively, ptosis had resolved, leaving the anterior polar cataract (<3 mm) and a best corrected visual acuity of (OD) 6/6 and (OS) 6/5. About 6 months afterwards, the cataract matured with a visual acuity of 6/60 for which she had right phacoemulsification with posterior chamber intra-ocular lens implant insertion. **Conclusion:** Prompt presentation and management lead to good visual outcomes in this patient.

Keywords: *Eyelid, injury, orbital, power plug of a phone charger*

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Introduction

Penetrating orbital injury caused by foreign body is relatively uncommon. These types of injuries may present with varying levels of severity, from asymptomatic to having severe ocular complications.[1] Intra-orbital foreign body could be divided into metallic or non-metallic, which could further be categorized into organic and inorganic.[2] The intra-orbital foreign bodies could occasionally be associated with domestic injuries.[3] The Nigerian blindness survey reported ocular trauma to be 1.1% of the causes of blindness in Nigeria.[4] A study in Zaria found home to be the most common location of ocular injury, accounting for 42.3% of the cases.[5] A study in Gusau found cornea and eyelid to be affected in 40.6% and 17.5% of the ocular trauma cases, respectively.[6]

A study in Zaria found the incidence of orbital/ocular trauma to be 1.8%.[5] Orbital injury could result in good visual outcomes, moderate and severe visual impairment, or blindness. A study noted that the type of injury and affectation of the posterior segment could be major risk factors for poor visual outcomes.[7]

Many objects have been reported in the literature to cause orbital injury; some of which include bamboo stick and scissors.[2] To our knowledge, there has not been a report similar to this where a phone charger became an intra-orbital foreign body and caused penetrating eyelid injury.

We are reporting this case to highlight that immediate and appropriate management of orbital injury with intra-orbital foreign body could result in a good visual outcome. In this case, her visual improvement is most likely from resolution of eyelid oedema and ptosis post removal of the foreign body and no significant orbital complications.

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Case Report

The patient presented to a tertiary health institution 5 h after she sustained a penetrating injury, with the power plug of a phone charger while swinging it at high speed to the right upper lid which closed the eyelids. She presented with the charger stuck to the upper eyelid. She had associated tearing, bleeding, discharge, and inability to open the right eye. She also had generalized headache relieved by oral paracetamol ingestion, but no fever and no symptoms in the left eye. There was no history of prior ocular surgery. No history of any systemic diseases in the patient.

On examination: a young girl ill-looking and anxious, not febrile, not pale. Systemic examination was normal.

Ocular examination: Unaided visual acuity in the right eye could not be tested because the eyelids were closed shut by the phone charger, left eye was 6/9. The right eyelid was completely closed with the penetrating power plug of a phone charger in the superolateral aspect of the upper eyelid at the junction of the medial 2/3rd and lateral 1/3rd, the lower plug of the phone charger being anchored on the right maxillary area. All other structures on the right eye were not visible because the eyelids were closed shut. Findings in the left eye were normal.

She was placed on antibiotics, analgesics, and tetanus toxoid. Routine blood investigations were normal. Computerized tomography scan of brain and orbit reported fracture of the right inferomedial orbital wall. Globes and nerves appeared normal, and there was right maxillary sinus haematoma [Figure 1].

A diagnosis of the penetrating phone charger power plug in the right upper eyelid and orbit was made. The patient was sent for otorhinolaryngology review, and the haematoma in the maxillary sinus was managed conservatively.

She was planned for examination under anaesthesia (EUA), removal of the intra-orbital foreign body (phone charger), repair of the right upper lid, and any other ocular structure that might have been injured after obtaining informed consent from her parents.

In the theatre, the patient was cleaned and draped under general anaesthesia. When the charger was removed, a horizontal entry site about 5 mm in length was seen in the mid upper lid and a conjunctival laceration in the lower fornix about 1.5 mm was found. The power plug of the phone charger fractured the inferior medial wall and also caused a maxillary antrum haematoma. The right globe was found to be intact except for a corneal epithelial erosion centrally 3 mm by 3 mm.

The upper eyelid laceration was sutured with 6/0 prolene. The small conjunctival laceration in the lower fornix was sutured with 5/0 vicryl.

On the first post-operative day, the general condition of the patient was stable, and ocular examination revealed visual

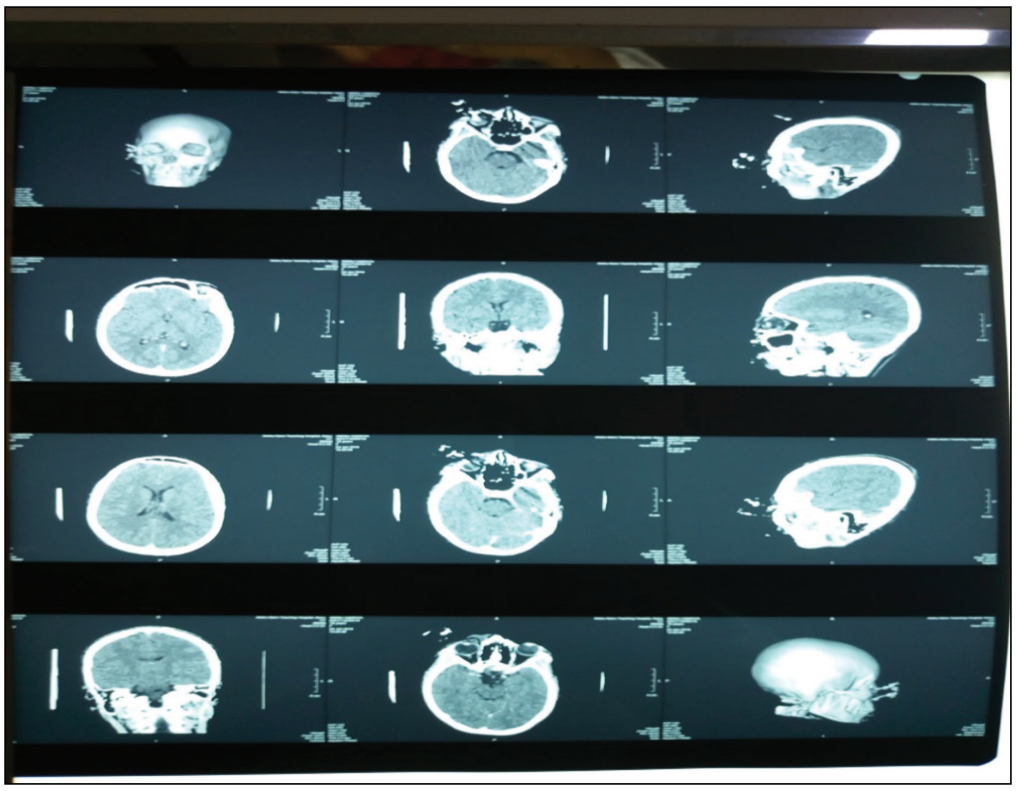

Figure 1: Patient's CT scan of brain and orbit

Figure 2: Patient after 8 weeks follow-up

Figure 3: 1-year post-operatively

acuity (unaided) of 6/36 in the OD and 6/9 in the OS. There was marked oedema in the eyelids with severe mechanical ptosis, sutures were intact, conjunctiva was hyperemic, cornea erosion of 3.1 mm by 3.3 mm, and anterior polar cataract.

The IV ceftriazone and metronidazole were converted to Tab Augmentin 625 mg 12 hourly and Tab Metronidazole 400 mg 8 hourly for 1 week and Tabs Diclofenac 50 mg 12 hourly, Gutt Moxifloxacin (intensive) hourly in the OD, Gutt Tobramycin 8 hourly, Gutt Mydriacyl 8 hourly, and Chloramphenicol ointment at night.

At 1 week post-operatively, the visual acuity in the right eye has improved to 6/24 with moderate ptosis and the corneal erosion has reduced to 0.5 mm by 0.5 mm and the anterior polar cataract remains. The corneal erosion had healed at 3 weeks post-operative follow-up.

Eight weeks post-operatively, ptosis had resolved, leaving the anterior polar cataract (less than 3 mm) [Figure 2]. She had an unaided visual acuity of 6/12 in the OD and 6/6 in the OS (with Snellen's chart). She had refraction (her best corrected visual acuity values with spectacle prescription of OD +1.50/-0.25 × 180 and OS +0.25/-0.25 × 180 were 6/6 and 6/5, respectively).

Six months post-operatively, the patient presented with blurring of vision in the right eye and on examination the V/A was 6/60 in the OD and 6/5 in the LE and the cataract has developed to cover the visual axis for which she had PCIOL implant and 8 weeks post-operatively, she had a V/A of 6/6 in OD and 6/5 in OS. Indirect ophthalmoscopy, gonioscopy, and intraocular pressure were all normal [Figure 3].

Discussion

Orbital/ocular injury is a problem of public health importance and one of the causes of ocular morbidity in Nigeria.[4] Once such ocular injury is encountered, the clinician should take a detailed history. Depending on the structures affected and extent of injury, intra-orbital foreign body could have different modes of presentation. Hence, all ocular structures should be examined meticulously if possible, if unable to examine, then the worst should be expected and the important investigations should be done (which may include EUA) to help in diagnoses and management.

Studies have reported domestic injuries to be the most common causes of ocular injuries in children and adolescents and also a common cause of injury with intra-orbital foreign body.[3,7] This case too was a domestic injury. Studies have reported several objects causing penetrating injury to the eyelids such as wire and fish hook but no report yet on phone charger.[8,9] The injury was said to have occurred while the patient was swinging the charger at high speed when she accidentally hit herself.

It is recommended that large and anteriorly located foreign bodies should be removed but posteriorly located foreign bodies could be managed conservatively especially if it is an inert object like a piece of glass.[10] Metallic foreign bodies are usually not active but organic materials may be associated with orbital granuloma, orbital cellulitis, abscess formation, and discharging sinus.[10] This patient had a few sequelae after removal of the foreign body, which were upper lid laceration with oedema and mechanical ptosis. She also had corneal erosion and an anterior polar cataract which were managed and even though we thought these were a sequela of the injury, we could not be certain.

This case is reported to highlight the fact that even harmless looking objects, if swung or thrown with velocity, could be dangerous. Also, prompt presentation to the hospital is crucial. Even though, the seemingly spared right globe contributed to the good visual outcomes. Intra-orbital injury with foreign body has both short- and long-term sequelae, and immediate institution of appropriate management helps in decreasing the complications that may arise.

Conclusion

In this case, the patient sustained injuries to the upper eyelid, corneal erosion, and a traumatic cataract as a result of the injury. Prompt presentation, institution of appropriate investigations, and intervention strategies as well as regular follow-up helped in the management of the sequelae with good visual outcomes. Health education and parental/guardian supervision are also very important to avoid orbital/ocular injury at home.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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