

Case Report

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Quick Response Code:	Website: www.annalsafmed.org
	DOI: 10.4103/1596-3519.93536

Arrow injuries to the eye

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Abstract

Two male siblings aged 10 and 17 years, respectively, presented to our hospital with two days history of being shot in the right eyes with arrows. The patients presented with severe pains, bleeding, swelling, discharge and loss of vision. There was positive history of application of traditional eye medicine and an unsuccessful attempt was made to remove the arrows. Both patients presented with panophthalmitis. X-rays of the orbits and para nasal sinuses indicated the tip of the arrow was lodged to the apex of the orbit in the younger patient, and the arrow vertically traverses the eye/ orbit and lodged in the roof of the maxillary sinus in the other patient with fluid level in the lower third of the sinus. The patients were placed on broad-spectrum systemic antibiotics, had base line investigations and prepared for exploration. The patients had evisceration with removal of the arrows.

Keywords: Arrow, eye, injuries, panophthalmitis

Résumé

Deux frères et sœurs mâles âgés de 10 à 17 ans, respectivement, présenté à notre hôpital avec l'histoire de deux jours d'être abattu dans les yeux de droite avec des flèches. Les patients présentées de graves douleurs, saignements, gonflement, décharge et la perte de la vision. Il y avait des antécédents d'application de la médecine traditionnelle oeil et une tentative infructueuse a été faite pour supprimer les flèches. Les deux patients présentés avec panophthalmitis. Radiographies des fosses nasales orbites et para a indiqué à la pointe de la flèche a été déposée à l'apex de l'orbite dans le jeune patient, et la flèche verticale traverse le œil / orbite et déposée sur le toit du sinus maxillaire chez l'autre patient avec le niveau de liquide dans le tiers inférieur du sinus. Les patients ont été placés sur les antibiotiques systémiques à large spectre, avaient des enquêtes de la ligne de base et préparés pour l'exploration. Les patients avaient éviscération avec suppression des flèches.

Mots clés: Flèche, les yeux, les blessures, les panophthalmitis

Introduction

Although arrow injuries involving other body parts are not uncommon in our environment, involvement of the eye in such injuries is rare. With limitation in availability of grazing land for the Fulani tribal herdsmen, decreased water availability in the dry season in the northern parts of Nigeria, the conflict between these groups is a disturbing reality. The use of arrows, sometimes with poison applied to the tip, is becoming an emerging trend during such conflicts. This leads to loss of life and

other forms of morbidity such as blindness. There is need for colleagues in various disciplines to be aware of such injuries because managing these patients requires a multidisciplinary approach. The relevant authorities should be made to understand the import of these conflicts and find a lasting solution to the issue of grazing land in northern Nigeria.

Case Reports

Case 1

A 17-year-old cattle herdsman from Guri district

of Jigawa State, Nigeria. The patient was observing their cattle grazing in a farm land together with ten other members of his family. Suddenly, they were surrounded by irate farmers wielding bow and arrows and shooting at random. The patient was shot in the right eye and was taken to a traditional medicine healer who broke the wooden handle of the arrow and applied some medication to stop bleeding and neutralize any poison on the arrow tip, but could not remove it. There was pain, swelling, copious discharge and loss of vision which made the patient's family to take him to the district clinic from where they were referred to our hospital. On examination, there was no light perception in the right eye with arrow jutting out of the right orbit above the brow [Figure 1]. There was purulent discharge from the eye, tense and tender lid and orbital edema/ chemosis, opaque cornea and absence of extra ocular movement. The left eye was essentially normal. Sublingual body temperature was 38.6°C. Cardiovascular and respiratory systems were stable; there were no clinical signs of meningitis. A diagnosis of penetrating right eye injury with panophthalmitis was made.

Case 2

A 10-year-old sibling of the patient mentioned above and was injured under similar circumstances. The patient presented with fever, pain, eye swelling, loss of vision and discharge. On examination, the vision was no light perception even after gentle parting of the edematous lids with arrow jutting out of the right eye [Figure 2]. The cornea was opaque with the arrow penetrating through the center. Body temperature was 39°C. Cardiovascular, respiratory and central nervous systems were stable. The left eye was essentially normal. A diagnosis of penetrating right eye injury with panophthalmitis was made.



Figure 1: A 17-year-old male with arrow injury to the right eye

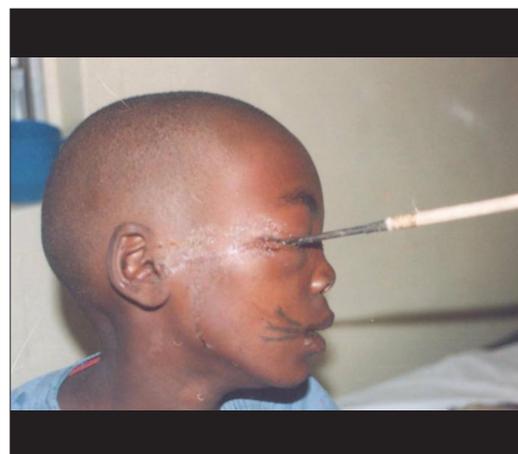


Figure 2: A 10-year-old male with arrow injury to the right eye

Investigations

Case 1

Skull X-ray showed arrow tip lodged in the roof of the maxillary sinus, with fluid level in the lower part of the sinus. Hematocrit, serum urea and electrolytes were within normal limits. Computed tomography (CT) scan was not available.

Case 2

X-ray showed the tip of the arrow lodged at the orbital apex, para nasal sinuses were normal. CT scan was not done for the reasons stated earlier. Hematocrit, serum urea and electrolytes were within normal limits.

Treatment

Case 1

The patient was placed on intravenous amoxicillin 500 mg 6 hourly, 80 mg gentamycin 8 hourly, Metronidazole 500 mg 8 hourly, non steroidal analgesic, 1500 i.u of anti tetanus serum and prepared for exploration under general anesthesia. After routine cleaning and draping, the eye was eviscerated; the sclera was incised inferiorly to free part of the arrow hook. A Patterson incision was made to explore the floor of the orbit. An opening was made into the antrum to disengage the trapped hook and removed the arrow. Patient had antral washout, was maintained on antibiotics and dressing for five days and subsequently discharged home.

Case 2

The patient was placed on intravenous ceftriaxone 1 g daily, 250 mg metronidazole 8 hourly, topical lomefloxacin (Okacin[®]) half hourly, 1500 iu of anti tetanus serum, analgesic and prepared for exploration. The patient had evisceration of the pus filled globe. The sclera was incised at 2 o'clock position to release one of the arrow's hooks to allow

for its removal. Sclera and conjunctiva were closed in layers. The patient was maintained on antibiotics and discharged after five days.

Outcome and follow up

Both patients were blind in the injured eye and declined the use of artificial eyes when that option was offered to them.

Discussion

Eye trauma represents 5% of all cases of blindness in developing countries.^[1] A blindness prevalence survey in Dambatta district of Kano state- Nigeria, the location of our hospital, indicated that 14% of unilateral blindness was due to trauma.^[2] Trauma-related eye surgeries accounted for 10.6% of all eye surgeries in our hospital in the last five years. Gunshot injuries affecting the eyes are on the increase in Nigeria^[3] and appear to be commoner than arrow injuries. Ancient literary, historical sources and paleopathological remains in the supposed tomb of King Philip II, father of Alexander the Great, showed he was seriously wounded in the right eye with an arrow during the siege of Methoni. Critobulos, a renowned physician, undertook the removal of the arrow.^[4] There are more recent reports of penetrating arrow injuries to the cranium,^[5] and base of the skull.^[6] The patients we managed indicated some of the problems arising from such injuries. The rural dwellers and nomads tend to rely on traditional medicine which when applied can introduce infection or cause corrosive damage to the eye and adnexia. In northeastern Nigeria, arrow injuries account for 0.1% of emergency admissions, 20.5% arises from communal clashes between farmers and cattle herdsman and similarly, occur exclusively in males.^[7] The patients reported did not have intra cranial injury as in some reports,^[8] and did not develop secondary meningitis. Removal of the arrows required freeing the hooks as anterograde removal was not possible with the limited orbital space. Both patients lost the affected eyes. The eyes could not be saved even without panophthalmitis to avoid the risk of developing sympathetic ophthalmitis at a later date (figure 3 shows the patient after evisceration). There is need for vigilance as occult transorbital intracranial penetrating injuries may not easily be detected on



Figure 3: Patient in Figure 1 after evisceration and removal of arrow

radiographs and require high index of suspicion.^[9] Such injuries require multidisciplinary approach with the care team involving ophthalmologist, ENT, maxillofacial and neurosurgeons.

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Cite this article as: Lawan A, Danjuma SA. Arrow injuries to the eye. *Ann Afr Med* 2012;11:116-8.

Source of Support: Nil, **Conflict of Interest:** None declared.