

**BLUNT OCULAR TRAUMA IN A 42 YEAR OLD WOMAN: THE IMPORTANCE OF PROMPT REFERRAL FROM PRIMARY HEALTHCARE SETTING IN MANAGEMENT– CASE REPORT**<sup>1</sup>\*Iyanam V. E., <sup>1</sup>Udoh S. B. and <sup>2</sup>Akpan S. I.<sup>1</sup>Department of Family Medicine, University of Uyo, Nigeria.<sup>2</sup>Department of Ophthalmology, Faculty of Clinical Sciences, University of Uyo, Nigeria.**\*Corresponding Author: Iyanam V. E.**

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**ABSTRACT**

Trauma to the Eye and its adnaexae, especially blunt trauma is a common phenomenon associated with modern urban living. It contributes significantly to blindness globally. Its management requires prompt referral to, and evaluation by, the Ophthalmologist for definitive diagnosis and treatment if complications including blindness is to be averted. We report a case of a 42 year old housewife who presented with pain, swelling, reduced and double vision of the left eye and headache of six hours prior to presentation. These symptoms started when she was struck on the left eye with a fist of her right hand by a male neighbour during a duel. She had first presented to a chemist shop and was given some over the counter medications including oral NSAID before presenting to the Primary Care Physician. Brief examination showed a young woman in pain distress, restless, not pale, afebrile and non-dehydrated. Ocular examination revealed reduced Visual Acuity (VA) in the left eye, edematous and tender lid, conjunctival injection, hazy cornea and hyphema, among other findings. After brief evaluation at the primary care setting, she was quickly referred to Ophthalmologist who promptly evaluated and treated her with good outcome. We recommend that blunt ocular trauma should be promptly referred from primary care setting to Ophthalmologist for quick evaluation and definitive treatment so as to avert avoidable irreversible ocular morbidity.

**KEYWORDS:** Ocular trauma, primary care, prompt referral, ophthalmologist.**INTRODUCTION**

Trauma to the eye and its surrounding structures remain a leading cause of preventable visual morbidity and blindness.<sup>[1-4]</sup> Ocular trauma constitutes an important public health hazard.<sup>[1,5-6]</sup> Despite the fact that the eyes represent only 0.2% of the total body surface and 4% of the facial area, they are the third most common organ affected by injuries after the hands and feet.<sup>[4,7-8]</sup>

Ocular trauma is a common occurrence. It has been shown that globally approximately 1.6 million people are blind from ocular trauma, with 2.3 million having binocular visual impairment while 19 million have unocular visual loss, thus making ocular trauma the commonest cause of unilateral blindness globally.<sup>[2,9]</sup> Also, according to estimates by the WHO, about 55 million eye injuries restricting activities for more than one day occur each year, with 750,000 cases requiring hospitalization, which include 250,000 open globe injuries.<sup>[1]</sup> These injuries can assume unusual social and economic importance involving a huge loss in human happiness, economic inefficiency and monetary loss.<sup>[1-2]</sup>

Studies have shown variation in the prevalence of eye injuries in different parts of the world. For instance, in

the United States, according to Eye Health Statistics, 2015, an estimated 2.4 million eye injuries occur each year.<sup>[10]</sup> Statistics showing high prevalence of eye injuries in other developed and developing countries abound.<sup>[11-16]</sup> In Nigeria, while eye injuries are common in all the geo-political zones generally, prevalence of blunt trauma is as high as 87% in Ibadan, South West Nigeria,<sup>[5]</sup> 77.8% in Gausau, North West Nigeria,<sup>[6]</sup> 79.6% in Zaria, North East Nigeria,<sup>[7]</sup> 29.4% in Calabar South-South Nigeria<sup>[18]</sup> and 79% in Abakiliki, South East Nigeria.<sup>[19]</sup>

Eye injuries can be broadly classified into Non-penetrating, Penetrating and Perforating injuries of the eye ball.<sup>[20-21]</sup> The Non-penetrating injuries include Lid laceration, Superficial injuries of the conjunctiva, Corneal abrasion, Chemical, Physical and Blunt injuries.<sup>[1-2]</sup> Blunt injuries may be Contusion or Concussion.<sup>[1]</sup> Studies have shown that Blunt Ocular injury is the most common ocular trauma and a major cause of visual impairment worldwide.<sup>[17,19,22]</sup> It has also been found to be one of the commonest causes of painful red eye.<sup>[1,2]</sup> Causes of blunt eye injuries vis-a-vis ocular injuries include occupational related injuries, domestic accident, sports, playing, recreation, road traffic accident,

blunt object impacting the globe, blow from the fist and assault to the eye.<sup>[2,19,21]</sup>

Blunt ocular trauma may cause several complications including irreversible visual loss. This underscores the importance of timely referral of severe blunt ocular trauma to the Ophthalmologist for prompt expert evaluation and treatment to avert complications.

The World Health Assembly, in 2013, unanimously approved the global action plan for the prevention of avoidable Blindness and Visual Impairment (VI) 2014-2019 (towards Universal Eye Health UEH), which is now the most important strategic document in eye health, building upon and replacing the previous vision 2020.<sup>[23]</sup> One of the most important strategies to prevent avoidable blindness and visual impairment is prompt referral of severe blunt ocular trauma from primary healthcare setting to the Ophthalmologist for quick evaluation and definitive treatment.

### THE CASE

Mrs KAU presented at the staff clinic of the Federal Secretariat, Uyo, a primary healthcare facility manned by the Department of Family Medicine, University of Uyo Teaching Hospital, Uyo, South-South Nigeria. She complained of pain, swelling and difficulty in opening the left eye of six hours prior to presentation. Pain was of sudden onset, severe, throbbing, constant and got worse on attempt to open the eye. These symptoms followed an assault by her male neighbour, who struck his fisted right hand on the patient's left eye during a duel that involved the patient's and the neighbor's families. KAU had also experienced double and reduced vision and redness of the affected eye as well as global headache. The right eye was not affected. She did not sustain injury elsewhere on her body. There was no bleeding from any head orifice. Patient did not have nausea, vomiting, loss of consciousness or any other constitutional symptom.

Following the attack, she presented to a pharmacy shop and was given some medications including oral naproxen (a non-steroidal anti-inflammatory drug, NSAID), topical Gentamycin eyedrop and vitamin C tablet without sustained relief before presenting to us. Her past medical history revealed that about 10 years prior to presentation, she had an attack of Right Facial Palsy, post-partum, with late presentation which was treated by the Ophthalmologist with relief of most of the symptoms but with residual lagophthalmos. She had no history of any other chronic illness or previous trauma to the eye. She was para 4; 4 alive. Her last menstrual period (LMP) had occurred as expected with no menstrual problem. Other aspects of her Obstetric and Gynecological history, Family/Social history and Drug history were well taken and were unremarkable with no contribution to the presenting illness.

Physical examination showed she was in pain distress but not pale, not febrile (temperature 37<sup>0</sup> C); she was anicteric, acyanotic and not dehydrated.

Examination of the head showed no swelling, abrasion, laceration or tenderness on the head. Examination of the Right Eye revealed unaided VA of 6/9, Ocular Adnaxae showed lagophthalmos with good Bell's phenomenon. The conjunctiva and the cornea did not reveal any abnormality. All other structures of the Anterior and Posterior segments were unremarkable. Left Eye: The VA was 6/12. The eye lashes were normal, the Upper lid was edematous and tender. There was no obvious discharge or bleeding. She had conjunctival injection. The cornea appeared hazy (possibly due to elevated intra-ocular pressure), the anterior chamber revealed a Grade 1 Hyphaema (<1/3<sup>rd</sup> of anterior chamber). The pupil was moised and reacted poorly (possibly from trauma-induced spasm of the sphincter papillae muscle). The lens appeared transparent. Ophthalmoscopy revealed no significant abnormality. Examination of the ear, nose and throat and other systems including the central nervous, cardiovascular, respiratory, musculoskeletal, digestive systems revealed no significant abnormality. Following examination, a diagnosis of Left Blunt Ocular Injury secondary to assault was made. This diagnosis was explained to the patient. She was instructed to stop taking the naproxene (an NSAID) due to the tendency to cause or worsen intraocular bleeding. The need to refer her to the Ophthalmologist for further evaluation and definitive treatment was discussed with her. She consented. The following medications: Tablet Tramadol 50mg twice daily, Chymotrypsin 82mg thrice daily, were prescribed and dispensed to her while going through the protocol of seeing the Ophthalmologist. She was subsequently referred to the Ophthalmologist who promptly evaluated her, upheld the diagnosis, requested for some investigations and instituted definitive management. She had good outcome as her follow-up in the Ophthalmology Clinic showed a complete resolution of the inflammation and the hyphaema, with resultant restoration of visual acuity to normal.

### DISCUSSION

The case has shown the importance of prompt referral of ocular trauma from primary healthcare setting to the Ophthalmologist for prompt definitive treatment as a panacea to avert ocular morbidity and avoidable blindness. Eye injuries can be classified into Non-penetrating, Penetrating and Perforating injuries of the eyeball.<sup>[20-21]</sup> The Non-penetrating injuries may be complicated by Lid laceration, superficial injuries of the Conjunctiva, and Corneal abrasion. The blunt injuries may be Contusion or Concussion.<sup>[2,21]</sup> KAU presented with Non-penetrating Ocular Concussion. The age distribution for the occurrence of serious ocular injury is bimodal with maximum incidence in young adult and second peak in the elderly.<sup>[2,19]</sup> It occurs more in males than females in a ratio 2:1 (male: female). Those affected mostly are in the active age group. The elderly however

may be equally more affected possibly due to being more prone to falls from age-related gait anomalies and/or visual impairment.<sup>[20,21]</sup> Most cases affect the left eye of the victims because most people in the populace are right-handed.<sup>[2,17]</sup> KAU was female, in young active age and it was her left eye that was affected by the trauma. Causes of blunt eye injuries vis-à-vis ocular trauma include occupation related injuries, domestic accident, sports, playing, recreation, road traffic accident, object hitting the eye; blow from the fist and assault,<sup>[2,19,21]</sup> as occurred in KAU. In a study on eye injuries requiring hospitalization in Enugu, Nigeria, Okoye averred that eye injuries in Nigeria are caused by worsening trend in Nigeria socio-economic environment characterized by poverty, lack, armed robbery, societal tension and instability.<sup>[24]</sup> KAU was a victim of societal tension and instability.

Patients with blunt trauma generally present with pain, reduced and/or double vision, edema and/or ecchymosis of the ocular adnexae, and headache,<sup>[2,8,25]</sup> as was noticed by KAU. There may be other systemic symptoms like nausea and vomiting. It is recommended that like in any other case of trauma, individuals presenting with eye trauma should be carefully and thoroughly examined so as to detect injuries that may affect other parts of the body and treat appropriately.<sup>[2,8,26]</sup> This was done for KAU. Abnormalities that may be found either in isolation or in combination in blunt trauma include ecchymosis (haematoma of the eyelids), subconjunctival haemorrhage, corneal abrasion and/or edema, hyphaema, iris dialysis, secondary glaucoma, traumatic iritis, subluxation of the lens, herniation of the vitreous, vitreous hemorrhage, choroidal tear, retina edema (comotia retina), retinal haemorrhages, retinal tears that may result in retinal detachment and ruptured globe, orbital fracture and haemorrhage.<sup>[8]</sup> The index patient had ecchymosis, subconjunctival haemorrhage and hyphaema. From the perspective of the Primary Care Physician, Eye trauma may be classified as Emergency, needing intervention within minutes, Urgency, which must be treated within hours or Semi-Urgency, which should be treated within 1-2 days.<sup>[7,9]</sup> KAU presented with Ocular Urgency.

It is generally recommended that individuals with blunt trauma to the eye, especially if it is associated with reduced vision, should be referred promptly to the Ophthalmologist for timely evaluation and treatment.<sup>[17,21]</sup> This was done for the patient under discussion after brief evaluation at the primary care setting. Her prompt evaluation and definitive treatment by the Ophthalmologist resulted in good prognosis with complete recovery of the function of the affected eye.

Blunt trauma remains a major cause of ocular morbidity and blindness worldwide. Most presentations are done at the setting of primary care. A primary care physician is expected to do rapid evaluation of the affected patient and possibly initiate treatment based on the skill,

expertise and facilities available to him. In order to avert further complications, it is important to promptly refer the patient to the Ophthalmologist for expert evaluation and treatment, as was done to the patient under discussion.

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