



International Glaucoma Association

The International Glaucoma Association, a registered charity based in London, is a membership organisation with 26 years experience in helping people with glaucoma.

The aims today are the same as those of 26 years ago, when our founders and first members, a group of patients, doctors and medical staff at Kings College Hospital, London gave us a vision in our articles of association:

- To preserve sight by the education of patients, the public, medical practitioners and allied professions in the problems of glaucoma, especially (but without limiting the generality of the foregoing) those problems involved in its early recognition and the maintenance of a high standard of treatment
- To advance or facilitate research into the causes, treatment and alleviation of glaucoma and to ensure the dissemination of the results of such research to the professions and the public.

In many cases, lack of awareness, know-

ledge or support can become a major factor in the deterioration of any medical condition.

Failure to understand the need for early detection and effective treatment leads to much unnecessary blindness in the world today. The Association is developing a number of different initiatives to provide information to the public and professionals alike wherever they may be. Further, we have an international individual personal and professional membership together with an affiliate programme for similar organisations anywhere in the world.

Our information service and support to the community is, we believe, second to none:

- Our website at www.iga.org.uk which receives over 30,000 enquiries a month
- Our Sightline on (+44) 207 737 3265 (09.30 to 17.00 GMT)
- Over the internet from info@iga.org.uk

These services are supported by a range of leaflets (developed from the questions of our friends and members to our Sightline)

which are freely available to all.

Over the last year we have been improving our systems so as to be of service to more people. These developments will be implemented and available over the next year to support all those who need our help.

As a charity we are funded entirely by the donations of our members, friends and the general public. This generosity from those we have helped and colleagues enable us to fund our information services and helpline, run awareness campaigns and research into the causes and treatment of glaucoma.

The vision and spirit of service of our team; members, friends, donors, doctors and staff has not changed in a new century – we are willing and able to help those who need our help.

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Report

Causes and Visual Outcomes of Perforating Ocular Injuries among Ethiopian Patients

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Introduction

Ocular trauma, in particular open globe injury, is an important cause of monocular visual impairment and blindness in the younger and economically active age group.¹ Besides loss of vision, earnings (job opportunities) and productivity, it increases the cost to society because of increased healthcare spending.

Although it affects all age groups, previous reports have indicated that ocular trauma victims are predominantly males and young, with the majority under 30 years of age. In those between 20 and 44 years of age, injuries account for 10% of incident bilateral blindness.¹

The magnitude of ocular injuries in our

country has not been studied previously. This review was conducted to assess the magnitude, causes and visual outcomes of ocular trauma cases at Menelik II Hospital in Addis Ababa.

Patients and Methods

All patients with open globe injury who were operated on at the Department of Ophthalmology, Faculty of Medicine of Addis Ababa University, Menelik II Hospital, Addis Ababa over a one year period (January 1998 – December 1998) were reviewed.

The chart numbers of patients with open globe injury were obtained from the registry book of the major operating room. In addition to those obtained from the operating room registry book, data such as cause, date and duration of injury, visual acuity, type and extent of injury, medical treatment given before surgery, and profession of the patient were documented.

Finally, analysis was made as to the age

and sex distribution, post-operative complications, visual outcome of open globe injury and duration of follow-up. The patient was categorised as monocular blind if the visual acuity of the injured eye was less than 3/60 (or counting fingers (CF) at less than 3 metres). However, the new standardised ocular trauma classification² was not applied and as a result was not used in this analysis.

Results

Two hundred and four patients with perforating ocular injuries underwent surgery during the study period. All had injury to only one eye. Of the total eye operations done in the major operating room during the study period, 8.4% were due to perforating ocular injury. Male patients were three times the number of females, as shown in Table 1. The age ranged between 1.5 and 65 years, with the average being 19.4 years. One hundred and fifty-four (75.5%) patients were aged 30 years or under.

The most common causes of perforating ocular injuries were wood, metal and stone objects in 67 (32.8%), 58 (28.4%) and 29 (14.2%) respectively (Table 2). Most of the injuries occurred during chopping or cutting wood, hammering metals or nails and carving stone. These are associated with professions such as farming, garage work and carpentry in adults. Children, on the other hand, mostly sustained accidental injuries by rubber bands, needles, pencils, etc. while playing with others.

In the majority of cases, 151 (74%), the cornea was involved either alone (40 cases) or in association with the lens (88 cases) or the sclera (23 cases), as seen in Table 3. Twenty patients (9.8%) were too young to have their visual acuity taken. Of the remaining 184 patients, 165 (89.7%) had pre-operative visual acuity recorded as blind in the involved eye (Table 4). Post-operatively, 141 (76.6%) cases had visual acuities of less than 3/60 (CF < 3 metres). Thirty-nine (19.1%) cases with ruptured globe were eviscerated.

Discussion

A hospital based study³ has revealed that severe injuries such as ruptured globe, intraocular foreign bodies, hyphaema and orbital or facial fractures constitute about 5% of all ocular trauma cases. In this study, only perforating ocular injuries were looked at rather than the whole spectrum of eye trauma cases. However, ocular injury cases constituted 8.4% of all ocular operations performed in the major operating room during the study period.

Although it affects all age groups, previ-

ous reports have indicated that ocular trauma victims are predominately young with a majority under 30 years of age. Males greatly outnumber females as victims of eye injuries with a male to female ratio ranging from 3:1 to 12:1^{4,5} and the greatest number of eye injuries occurred in school-age children.⁶ Our results were in agreement with this trend as 75.5% of the cases were males and 75.5% were also aged 30 years or under.

Work-related injuries are described as the commonest cause of ocular trauma among adults.^{3,5} On the other hand, the most common cause of paediatric injuries were accidental blows and falls. Industrial injury to the eye is rare in our country, and here the major causes were related to farming, carpentry or garage work.

The visual outcome of perforating ocular injuries depends on the type of trauma sustained. Injuries from sharp objects have a better prognosis compared with those caused by blunt objects. This is because sharp objects cause laceration with damage confined to the underlying tissue whereas those caused by blunt objects result in widespread damage which, in the case of sufficiently high force, may rupture the globe.

The severity of trauma is also among the prognostic factors used to predict the final visual outcome. Injuries associated with a wound 4mm or longer,³ combined anterior and posterior segment injuries,⁵ lens dislocation, vitreous haemorrhage, intraocular foreign bodies, scleral wounds and afferent pupillary defect⁷ were found to have poor prognoses. In this retrospective review, the severity of injury was difficult to ascertain.

Previous studies^{5,7,8} have indicated that an initial visual acuity of the traumatised eye has a predictive value in regard to the final visual outcome. They showed that initial visual acuity of 5/200 (1.5/60) or better was associated with a favourable prognosis.

The management of ocular injury seeks to restore the anatomy and function of the eye to its pre-injury state. Visual rehabilitation of the injured eye often requires the involvement of several sub-specialists. Diagnostic means such as ultrasonography and radiography need to be readily available with trained personnel.

About 2/3 of our patients remained blind in the injured eye. This was due to failure

Table 3: Anatomy of Eye Injuries

Types	No. of Patients (%)
Cornea	40 (19.6)
Cornea + Lens	88 (43.1)
Corneo + Sclera	23 (11.3)
Sclera	14 (6.9)
Ruptured globe	39 (19.1)
Total	204 (100%)

Table 4: Pre-operative and Post-operative Visual Status of the Eyes

Visual Acuity	Initial (%)	Final (%)
NLP	39(21.2)	39(21.2)
LP	87(47.3)	30(16.3)
CF < 3 metres	39 (21.2)	72(39.1)
CF at 3 metres or better	19(10.3)	43(23.4)
Total	184(100%)	184(100%)

to manage the complications of injury. We do not have trained personnel in corneal transplantation. We also lack a vitreoretinal surgeon to manage vision threatening posterior segment injury such as vitreous haemorrhage or retinal detachment. In our cases, 89.7% were blind before surgery as opposed to 76.6% after surgery to the injured eye. The improvement in the visual acuity of some patients was due to cataract extraction with lens implantation performed in these cases.

The Department is a tertiary centre where patients are referred for better management. Efforts must be made to strengthen the capacity of the Department to handle perforating ocular injury cases appropriately.

References

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Table 1: Age and Sex Distribution of Cases with Ocular Injury

Age (yrs.)	Sex		Total (%)
	Male	Female	
<10	43	20	63 (30.9)
11-20	42	8	50 (24.5)
21-30	33	8	41 (20.1)
31-40	18	10	28 (13.7)
41-50	13	3	16 (7.8)
51-60	3	0	3 (1.5)
61-70	2	1	3 (1.5)
Total	154 (75.5%)	50 (24.5%)	204 (100%)

Table 2: Causes of Injury

Cause	No. of Cases (%)
Wood	67 (32.8)
Metal	58 (28.4)
Stone	29 (14.2)
'Man-induced'	18 (8.8)
Miscellaneous causes (glass, fall, rubber, pencil, animal, explosive)	20 (9.8)
Unknown	12 (6.0)
Total	204 (100%)