

Indications for Surgical Removal of the Eye in Adults: A Five-Year Review

Mpyet, C FWACS Wade, P FMCOph Ramyil, A MBBS

Department of Ophthalmology University of Jos Teaching Hospital, Jos, Nigeria

ABSTRACT

Background: To determine the indications and procedures used for removing the eye in adults in our environment.

Method: A retrospective study of destructive ocular surgeries carried out between January 1999 and December 2003. Theatre and case records of adult patients that underwent surgical removal of the eye over a five-year period were reviewed. Clinical and histological diagnoses were obtained as well as type of surgery and personal data. Results were analysed using simple percentages.

Results: The most common indication for removing the eye in adults was due to trauma in 47(45.6%) cases while evisceration was the most common surgery performed in 91 (88.3%) cases. Males were three times more likely to lose an eye than females. In 74.8% of cases, the loss of an eye was in young persons less than 50 years.

Conclusion: The economically productive age group are more likely to lose an eye. The reason for the loss of an eye in most cases is largely avoidable. Lack of education on ways to prevent ocular injuries and improved access to eye care services requires urgent attention.

Key words: enucleation, evisceration, indications, Exenteration.

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Introduction

The surgical removal of the eye is usually a last form of treatment a surgeon resorts to as the removal of the eye is a frustrating exercise both to the patient and surgeon. There are various reasons for the surgical removal of the eye which include: primary intraocular malignancy or an eye with opaque media suspected of having an intraocular malignancy; a severely traumatised eye with the extrusion of intraocular contents to prevent sympathetic ophthalmitis; a painful eye without potential for useful vision; acute suppurative endophthalmitis not amenable to medical or surgical treatment and a blind disfigured eye which is cosmetically unacceptable.¹⁻³

The surgical removal of the eye can be done in three different ways: enucleation which involves removal of the whole eyeball and an attached portion of the optic nerve, evisceration which involves removing the contents of the

globe leaving behind the sclera and exenteration where the eyeball, the soft tissue contents of the orbit and sometimes the eyelids are removed.^{4,5}

Studies on the reasons for removal of the eye give an idea of some of the possible causes of blindness in the community and the persons at risk of losing their eyes.^{6,7}

We have reported the causes for removal of the eye in children eighteen years and less over a five-year period in our centre, two-thirds of the reasons were avoidable with trauma being the most common reason for losing an eye.⁸ This paper examines the reasons for loss of the eye in all adult patients attending our centre over the same period. This will provide us with relevant data which will be used in planning preventive activities against the loss of an eye.

MATERIALS AND METHODS

This retrospective study was conducted at the Department of Ophthalmology of the Jos University Teaching Hospital. Eye theatre records and clinical records of adult patients eighteen years and above who had their eyes removed over a period of five years: January 1999 to December 2003 were reviewed. Data on age, sex, diagnoses, type of surgical procedure and the eye operated were obtained and entered into a database in Microsoft excel. We also obtained the histological diagnoses from the histology report in the clinical records of all patients to see if this agrees with the clinical diagnoses. Data was analysed using Epi-Info version 3.2.2 (World Health Organisation, Geneva, Switzerland) for simple percentages.

RESULTS

Patient characteristics

Two thousand three hundred and eighty-eight eye surgeries were performed over this period out of which 170 (7.1%) were destructive in nature. One hundred and three (4.3% of all surgeries) surgeries were performed on persons above 18 years of age. The mean age of the study population was 40.2years (SD 17.6); there were 78males (mean age 38.2±15.3) and 25 females (mean age 46.4 ±22.5). The age range of the study population was from 19 years to 90 years with 25years being the modal age of presentation.

Indications for surgery and surgical procedures performed

The most common indication for surgery was a ruptured globe in 47 (45.6%) cases; this was followed by intractable infection (endophthalmitis and panophthalmitis) in 35 (34.0%) persons. A painful blind eye was the least common indication. Evisceration was carried out more often than other procedures in 91 (88.3%) cases while Exenteration was the least common procedure. Table 1 shows the indications for surgery and the various procedures performed.

Table1: Indications for surgery and types of surgery performed

Indications	Surgical procedure			Total (%)
	Enucleation	Evisceration	Exenteration	
Ruptured globe	0	47	0	47 (45.6)
Intraocular tumour	1	0	0	1 (1.0)
Intractable infection	1	34	0	35 (34.0)
Unsilghtly blind eye	2	5	0	7 (6.8)
Orbital tumour	2	0	4	6 (5.8)
Painful blind eye	2	5	0	7 (6.8)
Total	8 (7.8%)	91 (88.3%)	4 (3.9%)	103

Eye involved

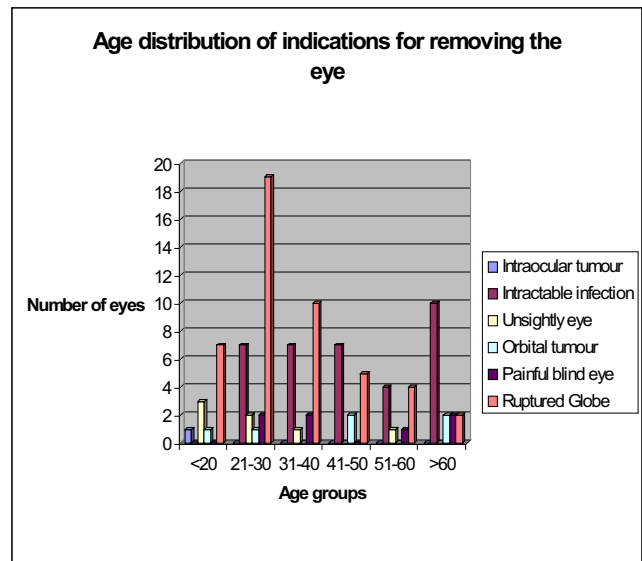
The right eye was more frequently involved with 55 eyes removed than the 48 left eyes removed. All the other indications were more common in males except for unsightly eyes removed for cosmetic reasons. Table II shows the sex distribution of the various indications for removing the eye.

Table II: Sex distribution of indications for removing the eye

Indication	Females (No of eyes)	Males (No of eyes)	Total
Ruptured globe	6	41	47
Intraocular tumour	0	1	1
Intractable infection	13	22	35
Unsilghtly eye	3	4	7
Orbital tumour	2	4	6
Painful blind eye	1	6	7
Total	25	78	103

Age distribution

Forty-seven patients lost their eyes to trauma with the most common age group being 21-30 years. Only two patients above sixty years lost their eyes to trauma. Intractable infection was common in most age groups but persons above sixty were more commonly affected. Figure 1 shows the age distribution of the indications for removing the eye.



Discussion

The most common indication for the surgical removal of an eye in adults in our environment is a ruptured globe secondary to trauma. This occurred more commonly in the second and third decades of life and affected more males than females. The age and sex most affected relates also to the most common indication for removing the eye, trauma occurs more in active young men as shown in this and other studies.^{7,9} Unfortunately, males who constitute the work force and source of livelihood in most families are more affected. This has great economic implications in a developing country like Nigeria where there are limited job opportunities for such persons. After trauma, is intractable infection, the aetiology of which is related to trauma in some circumstances. This pattern of presentation is similar to reports by other authors.^{7,9} In order to reduce the proportion of eyes lost to trauma, there is a need to educate the public on how to avoid such activities that put the eye at risk and on the need to wear protective spectacles by persons in occupations that place the eye at risk of injury.

Trauma was more common in the younger age group while intractable infection was more in older persons as debilitating illnesses make infection more prevalent in this age group. Self medication at the onset of infection, inappropriate or delayed medical attention also increases the chances of losing an eye to infection. Most patients in our environment resort to other remedies for ocular diseases when they lack access to medical care.^{7,10} It is therefore necessary to establish primary eye care services in our communities in order to provide the right initial treatment to persons with eye diseases while also equipping our tertiary centres to cope with more complicated cases¹¹. Such eye care

services will go a long way in providing first aid to persons with ocular trauma and further reduce the proportion of eyes lost to both infection and trauma; both of which are avoidable conditions.

Unightly eyes and painful blind eyes were less common reasons for removal of the eye. A number of these conditions could have resulted from childhood eye diseases like measles keratitis, bacterial infection or injury. More young persons wanted an unsightly eye removed for cosmetic reasons; this is hardly surprising as it is at this age that most people become very conscious of their appearance.

Tumours within the orbit constitute another avoidable cause of loss of an eye. Where patients present early, orbital decompression or tarsorrhaphy could save the eye. However, in our environment, most patients present late and we lack facilities for radiotherapy needed for the definitive treatment of some patients. Patients should be educated on the need to seek medical care early when afflicted with such conditions and our tertiary health care facilities should be equipped to enable them cope with such conditions.

Evisceration was the most common surgery performed as reported by other authors¹². This is related to the indications for surgery, as it is easier to eviscerate a severely traumatised or infected eye with less risk of spreading the infection. Evisceration also provides a better base for fitting prosthesis in the future than the other surgical procedures hence the choice of this procedure above others by the surgeons. Exenteration was the least common procedure performed, as it is a more extensive surgery usually reserved for tumours that have spread to involve the whole orbit and beyond. The proportion of eyes that underwent exenteration and enucleation in this study was low compared to that in children as the proportion of tumours in adults was lower⁸.

In conclusion, the loss of an eye is more common in the young and economically active persons of our community. A greater proportion of the reasons for loss of the eye are avoidable. There is need for patient education and better access to improved eye care in order to reduce the avoidable losses to sight.

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