International Journal of
Health Sciences
(IJHS)

Eviscerations in a District Hospital in Ghana: A Five-Year Experience

CARI Journals

International Journal of Health Sciences
ISSN: 2710-2564 (Online)
Vol. 5, Issue No. 3, pp 28 - 40, 2022
www.carijournals.org

Eviscerations in a District Hospital in Ghana: A Five-Year Experience

Youfegan-Baanam Mathurin[1]; James Kojo Prah[2] ; Yaw Osei Akoto[3]

[1]Ophthamology Unit, University of Cape Coast Hospital, Ghana

[2]Department of Public Health, University of Cape Coast Hospital, Ghana

[3]Ophthalmology Unit, Our Lady of Grace Hospital, Breman Asikuma, Ghana

Corresponding Author

Dr. James Kojo Prah

Department of Public Health, University of Cape Coast Hospital, Ghana

e-mail: james.prah@ucc.edu.gh

Abstract

Purpose: Destructive eye surgeries have been described as necessary evils. Even though they are important and sometimes life-saving, their psychological impacts on the patients are many. This study sought to determine the prevalence and main indications of evisceration in Our Lady of Grace Hospital in the Asikuma–Odoben-Brakwa District of the Central Region of Ghana.

Methodology: The mixed method study design was used. A five-year review of all cases of eviscerations from 2012-1016, was conducted. Also, in-depth interviews of 9 patients purposively selected, who had undergone eviscerations during the period under review were conducted. Data analysis was largely descriptive.

Result: Out of a total of 2996 ocular surgeries conducted within the 5-year period, 101 were eviscerations. This gives a 5-year prevalence of 3.4 per 100 surgeries. Out of the 101 cases of eviscerations, 81 were included in the analysis due to the availability of complete data. The mean age of patients was 50 years (SD 1.53). The majority of patients who underwent eviscerations were 60 years and more. Right (51%) and left (49%) eyes were eviscerated in nearly equal proportion. The occupations of the majority of patients were farmers/fisherfolks (55.6%) and trading (19.8%). Most (76.5%) eviscerations were due to non-trauma-related causes mainly infections (55.6%). The trauma-related indications for evisceration (23.4%) were stick/vegetative materials, stone/particles, and assault.

Unique Contribution to Theory, Policy and Practice: Eye infections and injuries which are largely preventable were the main causes of eviscerations in this study. Public education to encourage early reporting is needed. The aged should be discouraged from engaging in unprotected manual farm-related activities.

Keywords: *Evisceration, Destructive Eye Surgery, Central Region, Ghana*

International Journal of Health Sciences
ISSN: 2710-2564 (Online)
Vol. 5, Issue No. 3, pp 28 - 40, 2022

INTRODUCTION

Surgical removal of the eyeball is always a difficult decision to be taken by both doctors and patients. This is because the psychological impacts on the affected patients and their families are many. Such effects include high levels of anxiety and depression[1] distress driven by concerns about appearance and sight loss. [2] Even though a common reason for eye amputation is the presence of a painful blind eye, about a third of patients who have undergone destructive eye surgeries (DES) continue to have pain after the procedures. [3] There are many and varied indications for performing surgical removal of the eyes. These indications and prevalence of the surgeries differ among countries and even within a country.[4] Ocular infections such as endophthalmitis and panophthalmitis are the most implicated indications for DES in developing countries [5,6], whilst malignant tumours are the main reasons why eyes are removed surgically in developed countries. [7,8] Other common indications in both developed and developing countries are painful blind eyes, disfigured eyes, and trauma. [9,10]

There are three main techniques used for surgical eye removal. These are evisceration, enucleation, and exenteration. Evisceration is the removal of the eye's contents, leaving the scleral shell and extraocular muscles intact.[11] The procedure is usually performed to reduce pain or improve cosmesis in a blind eye, as in the case of endophthalmitis unresponsive to antibiotics. An ocular prosthesis can be fitted over the eviscerated eye in order to improve cosmesis. Either general or local anesthetics may be used during eviscerations, with antibiotics and anti-inflammatory agents given. Enucleation on the other hand is the removal of the entire globe from orbit while preserving all other orbital structures. [11] The optic nerve is detached from the eyeball. This technique is usually for intraocular tumors or malignancies. Exenteration is the removal of all of the orbital tissues including the eyeball.[10] It is a destructive procedure performed in an attempt to save a life. It is mostly undertaken to treat malignant eye diseases.

Many studies have been conducted globally to ascertain the prevalence, indications and risk factors associated with destructive eye surgeries. These studies have shown substantial variations in the prevalence and causes among nations and even within a nation. A Nigerian study,[10] found that the commonest indication for surgical eye removals was trauma, followed by tumour and ocular infections whilst a study conducted in Cameroon,[12] found infective causes (perforated corneal ulcer, and endophthalmitis), trauma, painful blind eyes, and malignancy as the leading causes.

In Ghana, even though the burden of eye disease is high and about 1% of the population is estimated to be blind [13] and many of these are likely to undergo destructive eye surgeries to manage their condition, only a few studies have been conducted to determine the prevalence and leading causes of destructive eye surgeries. A study conducted in North-Eastern Ghana found that the most common causes of evisceration were ocular infections.[6] This study therefore sought to determine the prevalence and indications of destructive eye surgeries performed at Our Lady of Grace

Hospital in the Asikuma-Odoben-Brakwa (AOB) District in the Central Region of Ghana and to explore the impact of the surgeries on the lives of the patients.

METHODOLOGY

Study Design

The study made use of the mixed-method study design which encompasses both quantitative and qualitative methods. A review of cases of eye removal at a district hospital in the Central Region of Ghana from January 2012 to December 2016. A retrospective records review was undertaken. The review was followed up with in-depth interviews of 9 patients who had an eye removed through evisceration at the hospital during the period. Thus, both quantitative and qualitative methods were used in this study (mixed design method). The quantitative arm of the study was a retrospective descriptive study involving a records review of all cases of DES at the Our Lady of Grace Hospital (OLGH) from January 2012 to December 2016. The qualitative arm involved in-depth interviews of purposively selected patients who had undergone destructive eye surgeries during the period of review.

Study setting

The study was conducted at the Our Lady of Grace Hospital located at Breman Asikuma. It is a 130-bed hospital that serves as the district hospital in the AOB District. It serves as the main referral hospital for eye conditions for all health facilities in the North-Central portion of the Central region and other parts of the country. The hospital records an annual average outpatient attendance of over 100,000 with about 20% of these patients reporting with eye-related conditions.

Data collection

The main source of data for the quantitative study were the theatre case register and patient folders. A data extraction form was used to gather information on the demographic characteristics of all cases, their presenting complaints, examination findings, diagnosis and type of destructive eye surgery performed. In the qualitative study, 9 patients were purposively selected from the list of cases. They were contacted through telephone calls. After consenting to participate, arrangements were made to conduct the interviews at locations and times convenient to each of them. An interview guide developed from existing literature was used. All interviews were audio-recorded and transcribed verbatim.

Data analysis

Quantitative data: descriptive statistics were used to summarize all findings. Categorical variables were reported as frequencies and percentages. Continuous variables were reported as means and standard deviations (SD). Number of DES performed each year was reported as frequencies and as proportions of the total number of eye surgeries performed. Data analysis was done using SPSS version 21.

The primary indication for the surgeries was categorized into two main groups. Trauma and non-trauma-related causes. Non-trauma related category was further sub-divided into diagnostic groupings such as infections and degenerations.

Qualitative data: data analysis followed the procedure described by Sandelowski (2000).[14] The audio-recorded interviews were transcribed verbatim using Microsoft Word. SPSS version 21 was used for thematic analysis. Phrases and sentences were grouped. From these themes, subcategories emerged which formed the basis for summaries and conclusions.

Ethical consideration

Ethical clearance was sought from the Ethical Board of Ensign College of Public Health, and permission from the Management team of Our Lady of Grace Hospital. Patients' confidentiality was ensured. Participants involved in the in-depth interviews were made to provide written informed consent before participation.

RESULTS

The only type of destructive eye surgery performed in the hospital in the period under review was evisceration. There were no enucleations nor exenterations performed. Out of a total of 2996 eye surgeries performed within the 5-year period, 101 were eviscerations. This gives an average crude incidence of 3.4 per 100 surgeries per year with a range of 3.0 – 3.9 per 100. Only 81 of the 101 cases had complete data to allow for analysis. Table 1 gives the distribution of cases over the 5-year period.

Table 1

Distribution of Annual Surgeries and Evisceration Rates at OLGH from 2012 to 2016

	2012	**2013**	**2014**	**2015**	**2016**	**TOTAL**
Eye Surgeries	740	562	505	578	611	**2996**
Eviscerated Eyes	23	22	15	18	23	**101**
% of Evisceration	3.1%	3.9%	3.0%	3.1%	3.8%	**100%**
No. with available Information	13	16	12	18	22	**81**

More right eyes 42 (52%) were surgically removed compared to left eyes 39 (48%).

Demographic characteristics

Of the 81 patients whose records were analyzed, 41 (50.6%) were females. The median age was 43 years. The mean age of patients was 50 years (SD 1.53). Patients above 50 years constituted the majority of 53 (65.4%). There were only two cases below 20 years of age. Most 31(38.3%) of the patients have had only primary education with as many as 22 (27.2%) with no formal education. Majority were farmers and fisherfolks 45 (55.6%). Table 2 shows the demographic profile of the cases.

Table 2

Demographic Profile of Patients

Variable	Categories	Frequency	(%)
Age (In years)	<20	2	2.5
	20-34	13	16.0
	35-49	13	16.0
	50-59	15	18.5
	60-69	13	16.0
	70 and above	2	2.5
Gender	Female	41	50.6
	Male	40	49.4
Marital Status	Single	16	19.8
	Married	47	58
	Divorced	5	6.2
	Widowed	13	16.0
Religious affiliation	Christians	71	87.6
	Muslims	6	7.4
	No religion	3	3.7
	Others	1	1.3
Occupation	Farmers/Fisherman	45	55.6
	Trading	16	19.8

	Artisan	8	9.9
	Unemployed	5	6.2
	Student	4	4.9
	Retirees	2	2.5
	Civil/ Public service	1	1.2
Educational Level	None	22	27.2
	Primary	31	38.3
	Secondary	27	33.3
	Tertiary	1	1.2

The cases were from 4 regions of Ghana. Most of them (75.4%) were residents of the Central region, 12.3% were from the Eastern region, 8.6% from the Western region whilst 3.7% visited the hospital from the Ashanti region.

Causes of eviscerations

Non-trauma related causes accounted for most cases of eviscerations (76.6%). These included infections (55.6%) and degenerative lesions (21.0%). Traumatic causes such as stick injuries, stones and assault accounted for 23.4% of all eviscerations performed. Table 3 shows the etiology of cases. Figure 1 shows the sex distribution of the main causes of evisceration among patients.

Table 3

Causes of eviscerations at OLGH (2012-2016)

CLASSIFICATION	FREQUENCY	%
Non-Trauma	**62**	**76.6**
Infections	45	55.6
Endophthalmitis	28	34.6
Ulcerative keratitis	17	21.0
Degeneration	**17**	**21.0**
Staphyloma	16	19.8
Phthisical eye	1	1.2
Trauma	**19**	**23.4**
Stick / vegetative material	12	14.8
Stone / particles	3	3.7
Assault	4	4.9

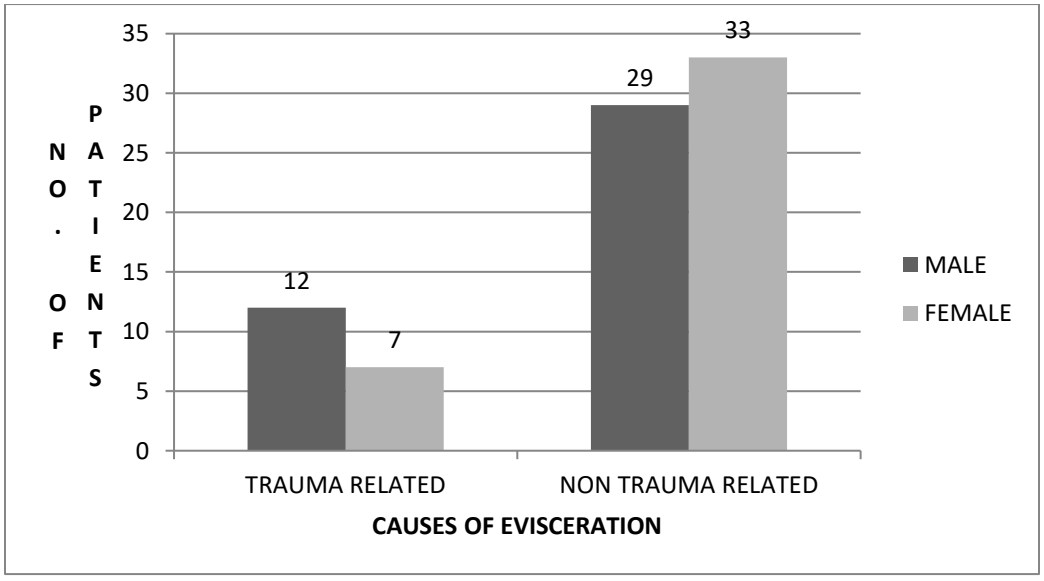

Figure 1: Causes of Evisceration by sex distribution of patients who underwent eye removal at OLGH from 2012 to 2016

Presenting complaints and past medical histories as extracted from patients' records

Table 4 shows a summary of the main presenting complaints and past medical histories of studied patients. Majority of patients who eventually had their eyes surgically removed presented with pain and eye redness (80.2% and 69.1% respectively). About 16.0% admitted that they had engaged in self-medication prior to reporting.

Table 4

Presenting Complaints and Past Medical Histories as extracted from patients' records

Past Medical History	Frequency (%)
Pain	65 (80.2)
Eye redness	56 (69.1)
Eye discharges	40 (49.4)
Foreign body sensation	24 (29.6)
Headache	19 (23.5)
Self-medication	13 (16.0)
Eye itching	12 (14.8)

Clinical findings as extracted from patients records

The clinical findings revealed that conjunctival injection was the highest disorder found during the clinical examination with a proportional recording of 66.7%. Only 4.9% of them were found to have corneal lacerations. Other patients were found after clinical examination to have eye swelling, eye tears, purulent discharge in the eye, chemosis, prolapse of the uveal, and melted cornea. Spontaneous evisceration (23.5%) implies that the respondent presented an already damaged eye to the clinic (Table 5).

Table 5

Clinical findings as extracted from patients' records

Clinical Findings	Frequency (%)
Conjunctival injection	54 (66.7)
Uveal prolapse	33 (40.7)
Tearing	33 (40.7)
Corneal ulceration	28 (34.6)
Purulent discharge	24 (29.6)
Eye swelling	23 (28.4)
Spontaneous evisceration	19 (23.5)
Chemosis	18 (22.2)
Melted corneal	8 (9.9)
Corneal laceration	4 (4.9)

Presentation of qualitative results.

Qualitative

There were 9 (5 females and 4 males) participants involved in in-depth interviews. One of the major themes that emerged was the description of events that led to the surgical removal of their eyes.

The events surrounding the evisceration of their eyes were found to be predominantly non-trauma related. The study revealed that most (6) of the patients who had their eyes removed through the evisceration technique were self-medicating either with the use of herbal medicine or orthodox drugs from unregistered or unprofessional eye care practitioners.

For instance, a female patient 76 years of age said:

"A cocoa chemical spray entered my eye which I have used herbal medicine to treat until I started feeling severe discharge (pus) and pain in the affected eye and I reported to the hospital".

A male patient of 46 years said:

"Something fell on my eye and I did not attend to it because I thought it was not much affected

but went to the counter chemical seller to buy chloramphenicol eye drop to treat the eye redness and other symptom seen for about five (5) weeks".

The study found that patients stayed at home to self-medicate for an average of 1 month, either with orthodox or herbal medicines, before seeing health professionals.

Other effects on the affected eyes were pains and itching at the surgical sites. The presence of phantom syndrome in the presence of light and shadow on the eviscerated eye was not found in any of the studied patients. Some of them (5) complained that even after the surgeries they cannot see clearly (blur) and a few (4) of them too could not see at all with the only eye left.

Respondents were asked if they had experienced any forms of stigmatizing behaviour towards them after the surgeries. None of them reported ever being stigmatized. The people around them related positively with the eviscerated patients, irrespective of the place they found themselves, including at work and at religious meeting places. According to a female respondent 45 years of age: *"though there is a change in my walking and focus since I now walk and focus with only one eye but I have not experienced any form of stigmatization from anybody being personal or societal".* She also added: *"people rather supported and encouraged me after the operation which left me with only one eye"*.

DISCUSSION

This study sought to determine the main indications and prevalence of destructive eye surgeries in the study population. The only type of destructive eye surgeries observed in this study was evisceration. Similar studies worldwide have found eviscerations to be the commonest destructive eye surgeries.[15,16] This is probably because eviscerations are technically easier to perform, could be performed under local anaesthesia, are known to cause less destruction of the anatomy of the orbit, and are associated with fewer complications.[17,18]

The overall incidence of eviscerations in this study was 3.4 per 100 surgeries over a 5-year period. This is similar to the 3.4% incidence found in a Nigerian study [5] but higher than the incidence of 2.7% found in an earlier study conducted in Ghana [6] and 1.4% found in another study conducted in Nepal. [19]

The leading causes of evisceration in this study were infections (55.6%) and trauma (23.4%). These findings are not unique to this study as similar trends have been reported by earlier studies in Ghana [6], and Nigeria. [20] In the Ghanaian study, infective lesions accounted for 47.9% of all excisions whilst 23.2% of the surgeries were as a result of ocular injuries. An Indian study[21] reported that as many as 78.6% of all eviscerations were due to panophthalmitis while 21.3% were a result of irreparable eye injuries. The findings of this study however contradict what was found in some other studies conducted in Nigeria [9,10], and in Ethiopia[22] that found trauma and malignancy as the leading indications of DES. The high incidence of eye infections in this study could probably be ascribed to the high level of illiteracy found among the study population. The majority of the

patients resided in the Central region of Ghana. This region is considered one of the poorest in Ghana with an illiteracy rate of 21.7% according to the 2021 population and housing census in Ghana.[23] Many (55.6%) of the patients in this study were farmers and fisherfolks with as many as 27.2% reporting no formal education. This high level of illiteracy coupled with their main occupation as farmers will make them vulnerable to occupational eye injuries as well as the use of harmful traditional medications to treat eye ailments. This study found evidence of self-medication among participants. Many earlier studies have linked the use of traditional eye medications to the incidence of infection-related DES.[5,24] The practice of self-medication may include the use of steroids which could have accounted for the high incidence of ulcerative keratitis found in this study. Such abuse of steroids could also lead to other complications like glaucoma and cataracts.

In this study, none of the patients interviewed complained of phantom eye syndrome. This is in contrast with the findings of an earlier study by Rasmussen (2010),[3] who found that phantom syndrome was frequent among eye amputated patients. Even though in this study all participants interviewed reported that the surgical removal of their eyes has reduced the quality of their lives, none reported any stigmatizing behaviour towards them. This finding is contrary to what was found in an earlier study among individuals who wore ocular prostheses resulting from traumatic eye injuries.[2] In that study some participants reported being stigmatized many years after their surgeries.

Conclusion

Eye infections and injuries were the main causes of eviscerations found in this study. These are largely preventable. Public education should focus on early presentation, the dangers of self-medicating with harmful traditional drugs, and how to avoid occupational eye injuries.

REFERENCES

1. Sadiq SA, Pattinson R, Poole HM, Bundy C. Psychological distress and coping following eye removal surgery. *Orbit*. 2020;39(3):175-182. doi:10.1080/01676830.2019.1658789
2. Keys J, Dempster M, Jackson J, Williams M, Coyle S. The psychosocial impact of losing an eye through traumatic injury and living with prosthetic restoration: A thematic analysis. *Acta Psychologica*. 2021;219:103383. doi:10.1016/j.actpsy.2021.103383
3. Rasmussen MLR. The Eye Amputated - Consequences of Eye Amputation with Emphasis on Clinical Aspects, Phantom Eye Syndrome and Quality of Life. *Acta Ophthalmologica*. 2010;88(thesis2):1-26. doi:10.1111/j.1755-3768.2010.02039.x
4. Obuchowska I, Mariak Z, Sherkawey N. Clinical indications for enucleation--a review of the literature. *Klin Oczna*. 2005;107(1-3):159-162.

5. Nwosu SN. Destructive ophthalmic surgical procedures in Onitsha, Nigeria. *Niger Postgrad Med J*. 2005;12(1):53-56.

6. Gyasi ME, Amoaku WM, Adjuik M. Causes and incidence of destructive eye procedures in north-eastern Ghana. *Ghana Medical Journal*. 2010;43(3). doi:10.4314/gmj.v43i3.55334

7. Scat Y, Liotet S, Bellefqih S. Etiology of enucleations. Apropos of 3,246 cases. *Journal francais d'ophtalmologie*. 1996;19(4):242-247.

8. Günalp I, Gündüz K, Ozkan M. Causes of enucleation: a clinicopathological study. *Eur J Ophthalmol*. 7(3):223-228.

9. Bodunde O, Ajibode H, Awodein O. Destructive eye surgeries in Sagamu. *Nigerian Medical Practitioner*. 2006;48(2). doi:10.4314/nmp.v48i2.28763

10. Musa K, Aribaba O, Onakoya A, Rotimi-Samuel A, Akinsola F. Indications for destructive eye surgeries at a Nigerian tertiary eye care centre: A ten-year review. *Nigerian Postgraduate Medical Journal*. 2016;23(1):12. doi:10.4103/1117-1936.180119

11. Migliori ME. Enucleation versus evisceration. *Current Opinion in Ophthalmology*. 2002;13(5):298-302. doi:10.1097/00055735-200210000-00002

12. Kagmeni G, Noche CD, Nguefack-Tsague G, Wiedemann P. Indications for surgical removal of the eye in rural areas in cameroon. *Ophthalmol Eye Dis*. 2014;6:27-30. doi:10.4137/OED.S14019

13. Boadi-Kusi SB, Hansraj R, Mashige KP, Osafo-Kwaako A, Ilechie AA, Abokyi S. Prevalence and Causes of Visual Impairment and Blindness among Cocoa Farmers in Ghana. *Ophthalmic Epidemiology*. 2017;24(1):17-23. doi:10.1080/09286586.2016.1254805

14. Sandelowski M. Whatever happened to qualitative description? *Res Nurs Health*. 2000;23(4):334-340. doi:10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g

15. Abah E, Rafindadi A, Samaila E, Chinda D. Changing trend in the causes of destructive eye surgery at Guinness Ophthalmic Unit, Ahmadu Bello University Teaching Hospital, Kaduna, Nigeria. *Annals of Nigerian Medicine*. 2010;4(2):62. doi:10.4103/0331-3131.78275

16. Odugbo OP, Wade PD, Samuel OJ, Mpyet CD. Indications for destructive eye surgeries among adults in a tertiary eye care center in North CENTRAL Nigeria. *J West Afr Coll Surg*. 5(2):134-153.

17. Nakra T, Simon GJ ben, Douglas RS, Schwarcz RM, McCann JD, Goldberg RA. Comparing Outcomes of Enucleation and Evisceration. *Ophthalmology*. 2006;113(12):2270-2275. doi:10.1016/j.ophtha.2006.06.021

18. Smith RJ, Prazeres S, Fauquier S, Malet T. Complications of Two Scleral Flaps Evisceration Technique: Analysis of 201 Procedures. *Ophthalmic Plastic & Reconstructive Surgery*. 2011;27(4):227-231. doi:10.1097/IOP.0b013e3181cff671

19. Pandey PR. A profile of destructive surgery in Nepal Eye Hospital. *Kathmandu Univ Med J (KUMJ)*. 4(1):65-69.

20. Bekibele CO, Oluwasola AO. A clinicopathological study of orbito-ocular diseases in Ibadan between 1991-1999. *Afr J Med Med Sci*. 2003;32(2):197-202.

21. Dada T, Ray M, Tandon R, Vajpayee RB. A study of the indications and changing trends of evisceration in north India. *Clinical & Experimental Ophthalmology*. 2002;30(2):120-123. doi:10.1046/j.1442-6404.2002.00495.x

22. Haile M, Alemayehu W. Causes of removal of the eye in Ethiopia. *East Afr Med J*. 1995;72(11):735-738.

23. Ghana Statistical Service. Ghana 2021 Population and Housing Census. https://census2021.statsghana.gov.gh/.

24. Prajna N v, Pillai MR, Manimegalai TK, Srinivasan M. Use of Traditional Eye Medicines by corneal ulcer patients presenting to a hospital in South India. *Indian J Ophthalmol*. 1999;47(1):15-18.