



## Evisceration Surgery: A 10 Year Retrospective Review of Our Experience in Northwest Nigeria

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### Abstract

**Aim:** To know the trend in frequency, indications and clinical characteristics in patients that underwent evisceration surgery in our center with the aim of recommending appropriate preventive measures.

**Methods:** This is a 10-year retrospective review of case files of patients who underwent evisceration at ophthalmology department Federal Medical Centre Birnin Kebbi. The clinical records were reviewed (from January 2010 and November 2020) for demographic data and clinical indications.

**Result:** A total of 191 evisceration were performed within the study period. The mean age was 33.58 years, SD 23.597, age range 2-85 years and mode was 25 years. Of these 191 eyes, 68 (35.6%) were children (<16 years) and 42 (22%) were elderly (>60 years). There were 129 males and 62 females, M:F ratio of 2.1:1. Clinical feature included poor presenting visual acuity in all the patients, right eye involvement in 93 patients. Clinical indications for evisceration surgery were anterior staphyloma in 79 cases (41.4 %), traumatic ruptured globe in 48(25.1), complicated keratitis in 34 (17.8%), endophthalmitis in 24 (12.6%) and 2(1%) each for painful blind eye, panophthalmitis and phthisis bulbi. The commonest indication for eye removal in both children and adults was anterior staphyloma followed by trauma.

**Conclusion:** Anterior staphyloma was the leading indication for evisceration followed by trauma, both of which are preventive causes of blindness. A proactive measure put in place in the form education to our community both directly at the community level and through the media will definitely have a good outcome and reduce the need for evisceration surgery.

**Keywords:** Eye ball, Anterior staphyloma, Trauma, Evisceration, Preventive measures.

### Introduction

Evisceration is an ophthalmic surgery where the internal contents of the eye are removed leaving the sclera coat, followed by placement of an orbital implant to replace the lost ocular volume.<sup>1-</sup>

<sup>6</sup> The decision to remove an eye is a devastating

experience to all concerned; the patients, their relatives, and the ophthalmologist and is taken as a last resort as such should be made prudently with strict indication. For the patients it is distressing because of the associated loss of visual function, depth of perception, cosmetic/

appearance issue and much more.<sup>7-10</sup> Evisceration is currently becoming the technique of choice in the treatment of certain eye diseases such as painful blind eye and endophthalmitis amongst other indication. Sometimes, it is needed to rehabilitate cosmetic appearance. This study analyzes 10-years case files of patients that had evisceration surgery.

**Methods**

This is a retrospective, descriptive study of all patients who underwent evisceration at the ophthalmology department Federal Medical Centre, Birnin Kebbi, a tertiary eye facility from January 2010 to November 2020. The outpatient, ward and theatre records were retrieved from medical record department of the institution and reviewed. Information obtained included age, sex, clinical features (presenting complaint, presenting visual acuity, and affected eye) and diagnosis at presentation.

All data were collected and entered into an electronic database and cross-checked for errors. Statistical analysis was performed using the SPSS version 20.0 (SPSS Inc., 2015, Chicago, Illinois, USA) data-analysis software package. Frequency, percentage, mean, mode and standard deviation were calculated. Categorical variables were analyzed using the Chi-square test. Continuous variables cross tabulation for any relationship. The critical value of significance was set up at  $P < 0.05$  for all tests.

**Results**

A total of 191 eyes were removed during period in view (2010 to 2020). The ages ranged from 2 years to 85 year and mean was  $33.58 \pm 23.597$  years, mode 25 years. Table 1 shows age and sex distribution. Children less than 16 years accounted for 35.6% (68 patients) while elderly greater than 60 years constituted 22% (42 patients). There were 129 males and 62 females with gender ratio (male vs female) of 2.1:1. All the patients presented with poor vision, ocular pain and redness. The right eye was affected in 98 cases

and left eye in 93 Table 2 shows clinical feature of patients. Clinical indication for evisceration included anterior staphyloma in majority of cases 41.1% (79 cases), it is the commonest cause in both children and adult, this is closely followed by trauma as shown in table 3. There is no statistically significant relationship between the affected eye, sex, age range and diagnosis of the patients as seen in Table 4, 5 and 6 that depicted cross table of affected eye, Pearson chi square = 5.065,  $df = 7$   $p = 0.161$ , sex Pearson chi square = 6.933,  $df = 7$   $p = 0.436$ , age range Pearson chi square = 41.249,  $df = 42$   $p = 0.59$  and diagnosis. Figure one shows the trend of yearly distribution of various indication and the trend in frequency which is also not of any statistical significance Pearson chi square = 7.045,  $df = 9$   $p = 0.061$ .

**Table 1:** Age / Sex distribution of patients

Age range in years	Sex		Total
	Female	male	
1-10	13	31	44
11- 20	8	20	28
21-30	11	23	34
31-40	5	14	19
41-50	4	6	10
51-60	10	15	25
61 and above	11	20	31
Total	62	129	191

**Table 2:** Clinical Characteristics of patients

Clinical features	Frequency	Percentage %
Ocular pain	199	100
Trauma	48	25.1
Poor vision	199	100
Involved eye		
Right eye	98	51.3
Left eye	93	48.7
Visual Acuity		
PL	530	27.47
NPL	129	70.88

**Table 3:** Indication for Evisceration

Diagnosis	Frequency	Percentage%
Anterior staphyloma	79	41.4
Traumatic ruptured globe	48	25.1
Complicated keratitis	34	17.8
Endophthalmitis	24	12.6
Painful blind eye	2	1.0
Panophthalmitis	2	1.0
Phthisisbulbi	2	1.0
Total	191	100

**Table 4:** Cross table of Affected eye \* diagnosis

**Crosstab**

Count

		diagnosis							Total	
		anterior staphyloma	autoevisceration	complicated keratitis	endophthalmitis	painful blind eye	panophthalmitis	phthisis bulbi		ruptured globe
affectedeye	left	39	14	3	10	0	1	0	26	93
	right	40	13	4	14	2	1	2	22	98
Total		79	27	7	24	2	2	2	48	191

Pearson chisquare = 5.065, df = 7 p= 0.161

**Table 5:** Cross table sex\* diagnosis

**sex \* diagnosis Crosstabulation**

Count

		diagnosis							Total	
		anterior staphyloma	autoevisceration	complicated keratitis	endophthalmitis	painful blind eye	panophthalmitis	phthisis bulbi		ruptured globe
sex	female	30	4	3	7	1	0	1	16	62
	male	49	23	4	17	1	2	1	32	129
Total		79	27	7	24	2	2	2	48	191

Pearson chisquare = 6.933, df = 7 p= 0.436

**Table 6:** Cross table AR\* diagnosis

**AR \* diagnosis Crosstabulation**

Count

		diagnosis							Total	
		anterior staphyloma	autoevisceration	complicated keratitis	endophthalmitis	painful blind eye	panophthalmitis	phthisis bulbi		ruptured globe
AR	1-10	26	4	1	3	0	0	0	10	44
	11-20	13	2	2	2	0	0	1	8	28
	21-30	13	5	1	3	1	0	0	11	34
	31-40	7	2	1	5	1	0	1	2	19
	41-50	4	2	0	3	0	0	0	1	10
	51-60	7	6	1	4	0	1	0	6	25
	61 and above	9	6	1	4	0	1	0	10	31
Total		79	27	7	24	2	2	2	48	191

Pearson chisquare = 41.249, df =42 p= 0.59

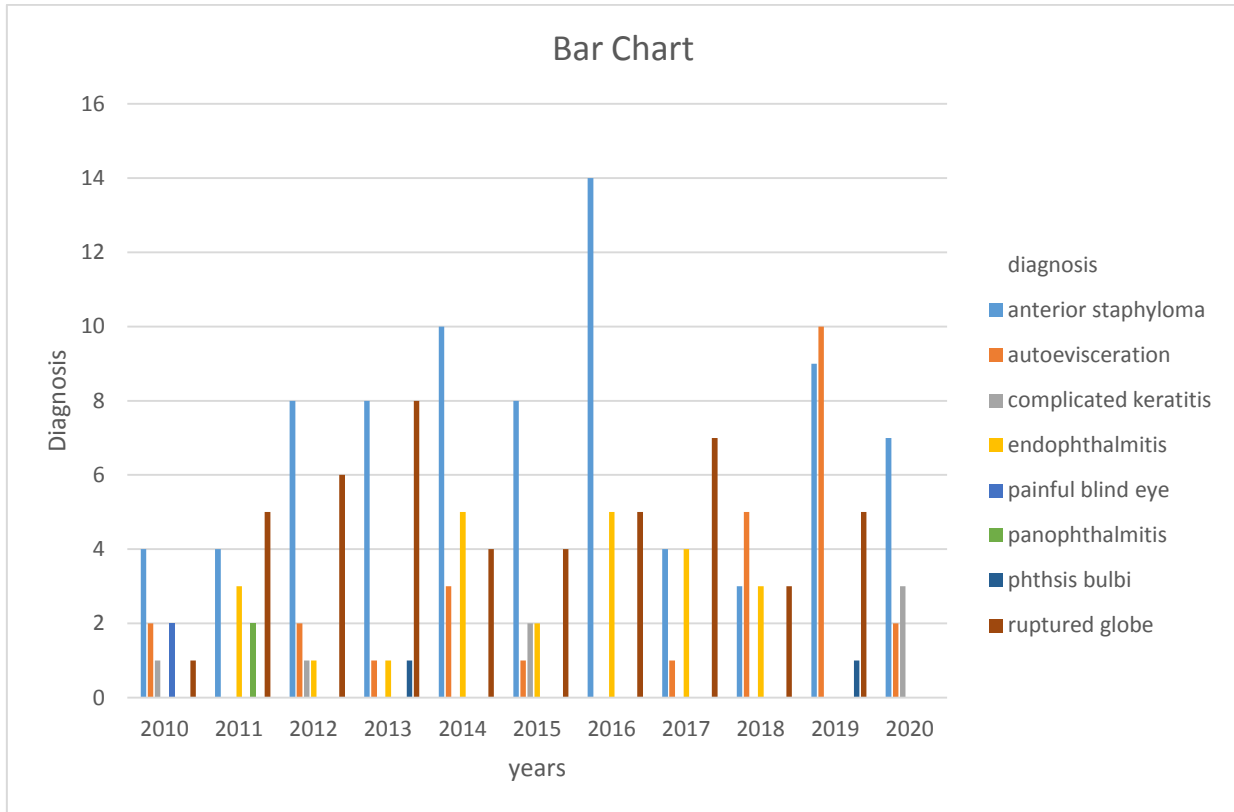


Fig 1: showing yearly distribution of various indication for Evisceration

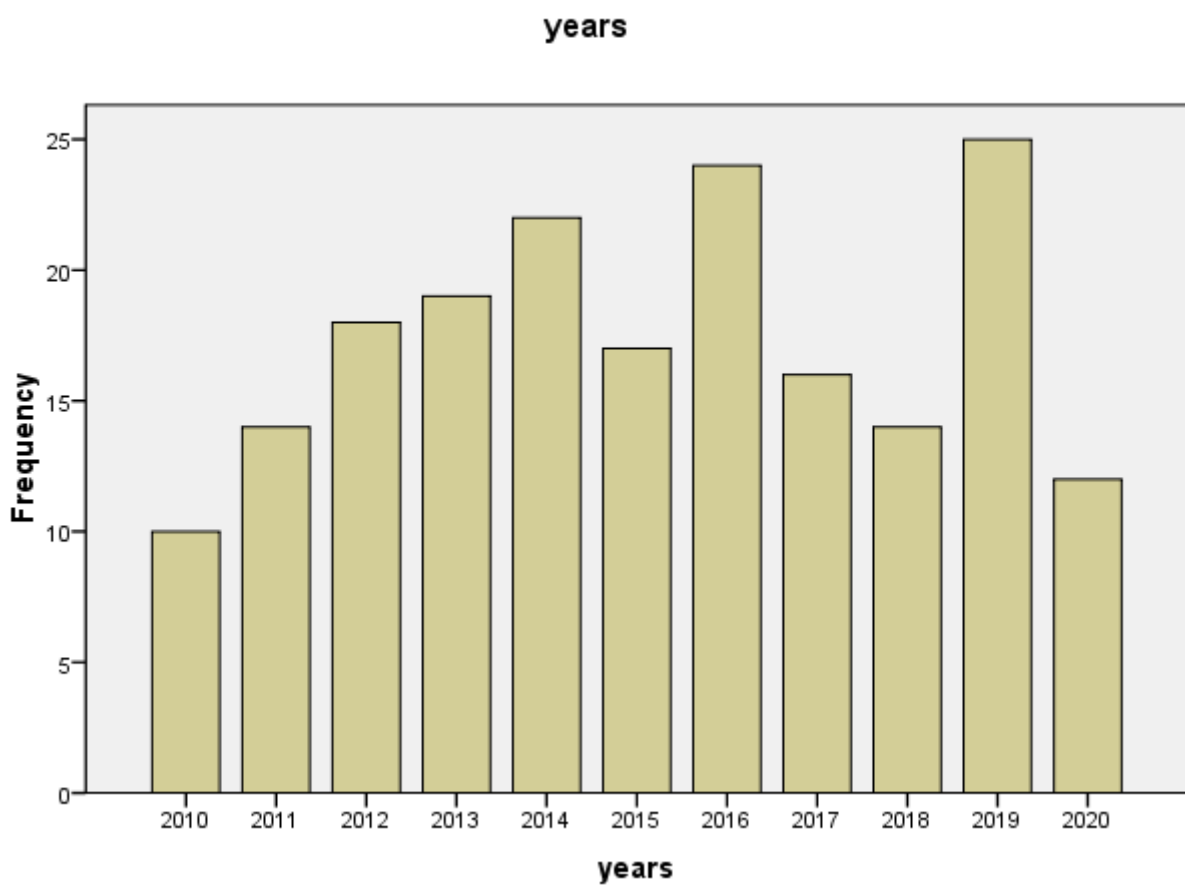


Fig 2 showing number of evisceration annually

### Discussion

Evisceration surgery is done both for children and adults when indicated, as shown from our study, majority of patients that had evisceration were within the age group 1 to 10 years (35.6%). This is similar to observation from developing countries as report from Ghana<sup>11</sup> and Cameroon,<sup>12, 13</sup> where eye removal surgeries is performed mostly in younger ages, whereas in developed countries they are done in older ages as report.<sup>6,7</sup> The mean age in our study was 33.58 years, this is within reported mean age from the literature.<sup>8,9,10,11</sup> Our study observed male preponderance (67.6%) and this is similar to what was reported in other studies.<sup>12-16</sup> This could be explained probably by the outdoor risky activities engaged by male gender. All the patients were blind in the affected eye before evisceration surgery in this study, and this is comparable to findings from other studies.<sup>13-17</sup> Usually, evisceration is performed to save the patient's life and/or to enhance quality of lives but not for vision. It is only offered as a last resort when all conservative approaches fail. Joseph et al<sup>18</sup> reported that more than 4/5<sup>th</sup> of the patients that had destructive eye surgery were satisfied with the procedure and reported good quality of life after one year of follow up despite no vision. In Nigeria, Mpyet et al<sup>5</sup>, Bodunde et al<sup>9</sup>, Musa et al<sup>19</sup> and Nwosu<sup>20</sup> reported trauma as a top indication for evisceration while others, Monsudi et al,<sup>8</sup> Gyasi et al<sup>11</sup>, Affiong et al<sup>15</sup>, Mohammed et al<sup>16</sup>, Ibanga et al<sup>17</sup>, Koylu et al<sup>21</sup> reported intraocular infections as most frequent indication. Worldwide,<sup>21,22,23</sup> indications for evisceration is on the decrease in developed regions however it's still a common procedure indicated for anterior staphyloma, trauma and intra ocular infections (mostly preventable cause) in developing world.

### Conclusion

This study has shown a remarkable increase in corneal disease as an indication for evisceration as well as reported infection and trauma as significant causes, which are largely preventable,

There is need therefore for community eye health education to create awareness, directly within the community and through the media houses. The use of protective eye wears and supervision of children during play are highly advocated so as to reverse this trend.

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