

CAUSES OF ENUCLEATION IN WEST MALAYSIA

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SYNOPSIS

The primary cause of 68 enucleations in the University Hospital, Kuala Lumpur, are reviewed and compared with those from Uganda and Jerusalem. Trauma 25% especially in the 20 - 29 age group was the most important cause, followed by corneal diseases 22% seen largely over the age of 50. Malignant tumours 16% consisting nearly all of retinoblastoma and a very low incidence of malignant melanoma when compared with the Caucasians. Glaucoma 12% was mainly of the narrow angle type. Males predominate nearly all age groups with an overall ratio of 2:1 and a peak of 5:1 in trauma.

INTRODUCTION

Following the two recent reports on the causes of enucleation in Uganda (Davanger, 1970) and in Jerusalem (Batten, 1971) a similar survey was undertaken in Kuala Lumpur, Peninsular Malaysia, to determine the relative frequency of different pathological conditions and the incidences compared.

MATERIAL

The data were collected from the records of the University Hospital for the years 1968 to 1972. The Eye Department has twenty-eight beds. Most of the patients were from the local state while some came from other parts of the country.

RESULTS

The number of enucleations was calculated as a percentage of all outpatients, inpatients and eye operations on inpatients of the Hospital. These figures are compared in Table I with the Uganda and Jerusalem series. The percentage of 0.39 against the outpatients is higher than Uganda 0.21 and Jerusalem 0.29.

The cases are classified into seven groups in order of frequency and sex as shown in Table II, trauma, corneal disease and malignant tumours are the chief causes.

The causes of enucleation as percentages are compared with figures from the other series in Table III. Malignant tumours 16% and glaucoma 12% are significantly higher in the study.

Table IV shows the age and sex distribution of cases of enucleation by diagnosis. This shows 3 peaks, 0-9 age group due to malignant tumours;

20-29 age group due mainly to trauma and the 50-69 age group caused by corneal disease and glaucoma.

DISCUSSION

The percentage of 0.39% against the outpatients is higher than in Uganda 0.21 and Jerusalem 0.29 (Table I). This is partly due to a number of serious cases being referred from various parts of the country. The primary cause, wherever possible and not the complications leading to the enucleation is analysed under seven groups in order of frequency.

1. Trauma

This accounts for 25% of the cases as compared to 50% in Uganda. The ratio of the males to females was 5:1. The serious injuries were mainly sustained in industrial and vehicular accidents most of which could have been prevented by adequate safety measures. Unlike in Uganda, fighting accounted for only two enucleations. Fortunately these patients usually seek attention early, otherwise the figure would have been higher.

2. Corneal Disease

This group of 22% does not significantly differ from the other series. It resulted from complications of ulcers such as perforations, endophthalmitis or staphylococci. A number of them came late for treatment, usually with complications. The two most common organisms cultured from the eviscerated contents were *Pseudomonas Aeruginosa*(4) and *Staphylococcus Aureus*(3). Unlike the other series none of the cases resulted from complications of trachoma.

3. Malignant Tumours

The figure of 16%, verified by histological examination, is higher than reported by Davanger 6.7% and Batten 5%. Retinoblastomas accounted for 10 out of the 11 cases. The incidence of tumour would have been higher but for the fact that three

TABLE I
 CASES OF ENUCLEATION AS PERCENTAGE OF PATIENTS AND
 OPERATIONS COMPARED WITH FIGURES FROM UGANDA AND
 JERUSALEM

Hospital Cases	University Hospital 1968-1972		Uganda 1963-1967	Jerusalem 1965-1969
	Total New Cases	Percentage Enucleated		
Outpatients	17,588	0.39	0.2	0.29
Inpatients	1,963	3.5	5.4	3.2
Eye operation (Inpatients)	1,624	4.2	8.4	4.2

TABLE II
 CAUSES OF ENUCLEATION BY DIAGNOSIS AND SEX IN ORDER
 OF FREQUENCY

Diagnosis	Total		Males		Females		Male/Female Ratio
	No.	%	No.	%	No.	%	
Trauma	17	25	14	21	3	4	5:1
Corneal Disease	15	22	10	15	5	7	2:1
Malignant tumours	11	16	4	6	7	10	0.6:1
Phthisis Bulbi	9	13	6	9	3	4	2:1
Glaucoma	8	12	4	6	4	6	1:1
Painful eye	5	7	3	4	2	3	1.5:1
Panophthalmitis	3	5	2	3	1	2	2:1
TOTAL	68	100	43		25		2:1

TABLE III
CAUSES OF ENUCLEATIONS AS PERCENTAGES COMPARED WITH
FIGURES FROM UGANDA AND JERUSALEM

Diagnosis	Present Series (Peninsular Malaysia) 1968-1972	Uganda 1963-1967	Jerusalem 1965-1969
TRAUMA	25	50.7	18
CORNEAL DISEASE	22	18.4	25
MALIGNANT TUMOURS	16	6.7	5
PHTHISIS BULBI	13	2.9	14
GLAUCOMA	12	5.8	5
PAINFUL EYE	7	9.2	25
PANOPHTHALMITIS	5	6.3	6

TABLE IV
AGE AND SEX DISTRIBUTION OF CAUSES OF ENUCLEATION BY DIAGNOSIS
(MALE AND FEMALE)

Diagnosis	(Years in Age)								
	0-9 No. %	10-19 No. %	20-29 No. %	30-39 No. %	40-49 No. %	50-59 No. %	60-69 No. %	70 + No. %	
Trauma	—	4 6 (4+0)	9 13 (6+3)	—	—	2 4 (2+0)	2 4 (1+1)	—	
Corneal Disease	1 2 (1+0)	2 4 (1+1)	1 2 (1+0)	—	1 2 (1+0)	3 5 (2+1)	5 9 (3+2)	2 4 (1+1)	
Malignant Disease	10 15 (3+7)	—	1 2 (1+0)	—	—	—	—	—	
Phthisis Bulbi	2 4 (0+2)	2 3 (1+1)	5 7 (4+1)	—	—	—	—	—	
Glaucoma	—	—	—	—	—	4 7 (2+2)	4 6 (2+2)	—	
Painful eye	—	—	—	1 2 (1+0)	2 3 (1+1)	—	2 4 (1+1)	—	
Panophthalmitis	—	—	1 2 (1+0)	—	—	—	1 2 (1+0)	1 2 (1+0)	
TOTAL	13 (4+9)	8 (6+2)	17 (13+4)	1 (1+0)	3 (2+1)	9 (6+3)	14 (8+6)	3 (2+1)	
Male/Female Ratio	0.4:1	3:1	3:1	—	2:1	2:1	1.3:1	2:1	

cases (two were bilateral) of clinically diagnosed retinoblastomas refused enucleation and defaulted. Retinoblastoma accounted for 50% of the tumours in Uganda. There was only one case of malignant melanoma of the choroid in a Chinese male aged 20. Davanger did not have a single case of melanoma out of 207 enucleations while Batten had one out of a total of 235. The incidence of malignant melanoma in the three series is very low when compared with the incidence in the Caucasians, thirty-one cases in 8091 operations were encountered in Moorfields Hospital, London, and nine in Sheffield in only 540 operations (Ida Mann).

4. Phthisis Bulbi

Includes 3 cases of congenital microphthalmos while in the other six the cause was not known. All the cases were under the age of 30, removal was for fitting of prosthesis for cosmetic reasons. The figure would have been higher if the older age group sought cosmetic improvement.

5. Glaucoma

Primary glaucomas are included under this group. The secondary glaucomas are included under the primary causes. Seven out of eight cases were of the narrow angle type reflecting the predominance of narrow angle glaucoma in this region (Lim A. S. M.).

6. Painful Blind Eye

Here the eye is often disorganised and the primary cause is unknown.

7. Panophthalmitis

The three cases presented for the first time with the fully developed condition and it was difficult to assess the primary condition.

AGE AND SEX DISTRIBUTION (Table IV)

Retinoblastomas are seen in the very young with a female preponderance. The males predominate in all the other age groups with an overall ratio of 2:1 and a peak of 5:1 in trauma. Of the age groups 20-29 heads the list with 17 cases followed by 60-69, 14 cases and 0-9, 13 cases. Fewer enucleations were seen between 30-39. Corneal diseases and glaucoma were largely seen over the 50's.

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