Table 1: Showing reference values for the sample population and the categorization of the reference values by sex

Analyte	Sex(n)	Mean (mmol/l	1.96SD	Mean±1.96SD	mmol/l
Urea	F M BOTH	240 240 480	4.2 4.7 4.4	1.5 1.4 1.3	2.7-7.7 2.7-6.7 2.6-6.7
Bicarbonate	F M BOTH	240 240 480	25.0 26.0 26.0	3.3 3.4 3.4	22.0-29.0 23.0-30.0 22.0-29.0
Potassium	F M BOTH	240 240 480	4.2 4.2 4.2	0.8 0.7 0.8	3.4-5.0 3.5-4.9 3.4-5.0
Sodium	F M BOTH	240 240 480	140.0 141.0 140.0	4.4 4.2 4.3	136.0-145.0 136.0-145.0 136.0-145.0
* F = Female, M=Male, n= number of reference individuals					

Table 2: Showing the comparison of mean serum values of urea and electrolytes

Analyte	Urea		Bicarbonate		Potassium		Sodium	
Sex	F	M	F	M	F	M	F	M
Number	60	60	60	60	60	60	60	60
Age group (Years)								
16-25	4.1	4.4	24.3	24.4	4.4	4.3	142.0	140.0
26-35	4.2*	4.9	24.0	27.0	4.3	4.3	139.0	140.0
36-45	3.9	4.5	25.0	27.0	4.1	4.0	139.0	139.0
46-55	4.7	4.9	27.0	25.5	4.1	4.0	139.0	139.0
* P < 0.02								

used for the normal distribution plot, frequency distribution of best fit to Gaussian distribution and the calculation of the central 95 percentile. Reference limits were calculated as mean ± 1.96 standard deviation (SD). Student's T-test was used to compare the mean values between two strata and level of significance set at $P<0.05$.

Results

The results of this study are as presented by tables I, II, III. The population reference value was 2.6 – 6.2 mmol/L for serum urea, which is for the entire sample population of 480 reference individuals made up of equal number of males and females. Reference values of 2.7 – 5.7 mmol/L and 2.7 – 6.7 mmol/L for female and male classes respectively were observed. No statistically significant difference was observed from sex stratification. In the 26 – 35 years age group, the means of serum urea for male was higher than that of female ($P<0.02$). However, the ratio of the standard deviations of the males to the female in the 26 – 35 years age category was 1.1. Age stratification presented similar means and (SD) for 26 – 35 years and 36 – 45 years. However, the

Table 3: Calculation of the reference values for the sample

Analyte	(n)	Mean (mmol/l)	1.96(mmol/l)	Mean±1.96SD (mmol/l)
Urea	480	4.4	1.3	2.6-6.2
Bicarbonate	480	26.0	3.4	22.0-29.0
Potassium	480	4.2	0.8	3.4-5.0
Sodium	480	140.0	4.3	136.0-145.0

the oldest age group, 46 – 55 years had higher mean serum urea and SD than all the preceding age groups. The ratios of the SD of the 36 to 45 year age group to 16 – 25 and 26 – 35 years were 2.1 and 1.8 respectively. The oldest age group had higher upper reference limit and reference ranges than all the younger age groups. Stratification by age, and sex did not show any difference of statistical significance for bicarbonate, sodium and potassium.

Discussion

The ideal approach for the task of health-associated reference values demand that each laboratory establishes its reference values locally by sampling healthy individuals from the population it serves[8]. This agrees with the apriori approach of establishing reference values using the existing methods of the laboratory, as recommended for the establishment of health associated reference values by the International Federation of Clinical Chemistry [9]. Although there exist a difference of statistical significance between the mean serum urea for the male and female sub-populations in the 26 – 35 years age group, categorization of the reference values by sex for the age group would not be required as the ratio of their SD approaches unity, which is less than the 1.5 required for separate reference values[3]. In addition, no physiological reason is known to effect differences in the serum urea for the sexes in 26 – 35 years age group. Therefore, the reference values for serum urea for the age groups of 16 – 25, 26 – 35 and 36 – 45 years are similar to and would be the population reference values of 2.6 – 6.2 mmol/L. However, stratification would be required for the serum urea of the age groups below 46 years and the age group

of 46-55 years. This is because there is a difference of statistical significance in the means of the 46-55 years age group and younger age groups, existing physiological difference for serum urea resulting from age difference, and the ratio of sub-group standard deviation exceeding 1.5. Therefore, separate reference values of 2.3 – 7.3 mmol/L for serum urea is appropriate for the age category of 46-55 years. Decreased excretory capacity of the kidney with age [10,11] could explain the high mean and the high upper reference limit of serum urea observed in the 46 – 55 years age category. In addition, the oldest age group, being the business age group bracket in Kano, Nigeria's centre for commerce ingests more protein in the form of roasted meat (suya) and restaurant food, as they are economically better than the younger age groups. Further study to elucidate the lower reference limit of 46 – 55 years age group when compared with that of the sample population is required. Commercial blood donors were treated as outliners as their low serum urea results could have been a source of bad reference values. It is well known that good reference values are hard to find and bad ones hard to change[12], therefore, efforts were made to ensure reliable reference values as unreliable results are worse than non at all [13].

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Surgical Findings At Laparatomy For Uterine Fibroid In University Of Ilorin Teaching Hospital.

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Abstract

A three year review of the surgical findings at Laparotomy for uterine fibroids at the University of Ilorin Teaching Hospital was carried out from 1st January 2001 to 31st December 2003.

Surgical Operation for uterine fibroid represents 21.6% of all major gynaecological operations carried out during the period under review. Fifty percent of the patients were aged 30 – 39 years. The finding of 172 (56.2%) of patients in the low parity group is suggestive that uterine fibroid plays a role in the process of spontaneous conception. A palpable abdominal swelling represents the commonest symptom of uterine fibroid in this study and as was present in sixty nine point nine. Other factors found to be associated with uterine fibroid are the numbers, size, location and associated pelvic inflammatory disease, which are common in low resource countries .

218 (71.2%) of patients with uterine fibroids had associated pathology of either adnexae or surrounding viscera. This finding put additional responsibility on the clinician for thorough counselling during the clinic attendance because these will contribute to possibility of infertility in such patients. In those patients who desire further child bearing discussion must include the possibility of assisted reproductive procedures to complement the result of restorative surgery.

Keywords: Surgical findings, Laparatomy, Uterine, Fibroid.

Introduction

Uterine fibroid or leiomyoma is the commonest tumour found in women. They occur in 20 – 25% of women over the age of 30 years [1 - 4] and accounts for 13.4% of gynaecological admissions in Ilorin [5]. The aetiology is unknown, but genetic factor have been implicated [2,3,5 - 7]. Other incriminated factors are familial, low fertility or infertility, and hormones, particularly oestrogen that is believed to play a synergistic role in their growth [2.5 - 7]. It is commoner among Negroes than Caucasian due to genetic predisposition and environmental factors [1 - 3,5,7].

The clinical features of uterine fibroids are dependent more on their location and therefore the clinical features are variable. Most frequently, the symptoms are related to heavy, painful and or irregular vaginal bleeding. Abdominal swelling, pelvic discomfort or may be associated with infertility [1 - 4.] Pressure symptoms may be present depending on its size and site [2,5,7].

Uterine fibroid may be associated with intrauterine pregnancy, when its presence may lead to abortion, or premature labour either by acting as a space occupying lesion or affecting placentation. Uterine fibroid can also change the course of labour due to its location. However the commonest complication of fibroid in pregnancy is red degeneration [7,8].

Age, parity, demonstrable tubal patency and desire to preserve fertility potential determine the management option [2,5,]

The treatment of uterine fibroid could be, surgical, medical or both. The medical option involve use of drugs such as GnRH (Gonadotrophin releasing Hormone) analogues to induce a pseudo menopausal state to reduce the size of fibroids prior to surgery or treat menorrhagia. The surgical management options available are myomectomy, hysterectomy, Laparoscopic or hysterescopic resection and laser Vaporization or myolysis. Uterine artery embolization and bilateral uterine artery ligations are other options [5 – 12].

At laparotomy the findings may vary and unexpected degenerative changes may be present which will become a technical challenge to the surgeon. It is in the light of these that this study was undertaken. The aim of this study is to review the surgical findings at laparotomy for uterine fibroid as well as the management options in our environment.

Materials And Methods

A retrospective review of surgical records of three hundred and six (306) patients who had abdominal hysterectomy or myomectomy for treatment of uterine fibroids

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at the University of Ilorin Teaching Hospital Ilorin between 1st January 2001 and 31st December 2003 was carried out.

Information was extracted from the records in the operating theatre and the hospital main record office where the case notes were retrieved. A total of three hundred and fifty four (354) patients had abdominal hysterectomy or myomectomy as a result of symptomatic and subsequent diagnosis of uterine fibroids. However, only three hundred and six (306) case notes were available for review.

The following data were retrieved from each case records: Age, Parity, presenting symptoms and physical findings, and main surgical findings at laparotomy. Simple percentage expression was used to describe the result.

Table 1: Age Distribution of patients with uterine Fibroid

Age	No of Patients	Percentage
< 20	15	4.9
20-29	102	26.8
30-39	153	50.1
≥ 40	56	18.2
Total	306	100%

Table 2 : Parity Distribution of Patients with Uterine Fibroids

Parity	No of Patients	Percentage
0	112	36.6
1	60	19.6
2	46	15.0
3	35	11.4
4	43	14.1
≥ 5	10	3.3

Table 3 :Symptomology of Patients with Uterine Fibroids

Symptoms	No of Patients	Percentage
Abdominal swelling	214	69.9
Infertility first degree	112	36.6
Infertility second degree	108	33.3
Menstrual Abnormality	72	23.5
Pain	64	20.1
Incidental findings	26	8.5
Urinary retention	6	1.96
Constipation	4	1.3

Results

A total of one thousand six hundred and thirty six (1,636) major gynaecological operations were conducted during the period under review and three hundred and fifty four (354) patients had surgery for symptomatic uterine fibroids giving a percentage of twenty one point six (21.6%).

Table 4: Surgical findings at Laparatomy for uterine Fibroid

Surgical Findings	No of cases	Percentage
Combined fibroid (subserous, intramural and submucous)	183	59.85
Mild Pelvic Adhesions involving the Uterine and the adnexae	142	46.4
Moderate severe pelvic adhesions involving the intestinal loops and the Omentum	76	24.8
Solitary subserous fibroids	51	16.7
Intramural fibroid only	43	14.1
Sub subserous fibroid pedunculated	16	5.2
Submucous fibroid only	14	4.6

Age distribution of patients with symptomatic uterine fibroids who had either abdominal hysterectomy or myomectomy is shown in Table I. Majority of the patients are in the age bracket 30 – 39 years constituting about 50% of the study group. It is however observed that about 5% of the study populations were teenagers.

Table II describes the parity distribution of the study population. As expected low parity group accounted for 172 (56.2%). Other parity groups also contributed as stated.

The various symptomatology of uterine fibroids Table III shows abdominal swelling as the most prominent feature in this study 214 (69.9%) of patients. Infertility was present in 69.9% of patients either as primary 112 (36.6%) or secondary infertility 108 (33.3%) respectively. Menstrual abnormality in 72 (23.5%) patients and abdominal pain in 64 (20.1%) patients are the other prominent features. Incidental findings like tubal adhesion and occlu-

sion, ovarian cyst, adhesion involving the ovary and the other adnexae structure were also present. Omental and intestine adhesions accounted for 26 (8.5%) of the study population. No report of extrauterine fibroid was found.

Operative findings at laparatomy (Table IV) shows that 183 (59.8) patients had uterine fibroids at subserosal, intramural and submucosal sites. Only 51 (16.7%), 43 (14.1%) and 14 (4.6%) had single solitary subserosal, intramural and submucosal fibroid respectively. 218 (71.2%) of patients had the adnexia or the surrounding viscera involved in the adhesion complex.

Discussion

Uterine fibroid represents an important gynaecological complaint in women of reproductive age [1 - 4] and represents 13.4% of gynaecological admission in this centre [5]. Finding from this study showed that 21.6% of major gynaecological surgery was on account of uterine fibroid and this underscores the clinical importance of uterine fibroid.

The age distribution of patients in this review followed the known prevalence pattern [1,2,5,7]. About half of the cases were seen in the age group 30 – 39 years. It is of note that 8.5% of the study populations were teenagers and this could be a pointer to a high awareness of the condition in this community. The teenagers might have been prompted to attend hospital by the strange feeling of heaviness in the lower abdomen or undue lower abdominal pain.

There is an unsettled relationship between uterine fibroid and infertility [6 – 8,10]. The finding in this study and similar ones of a high incidence of uterine fibroid in low parity women will tend to suggest a role for uterine fibroid in conception process. The observation in this studyamong patients with uterine fibroid, of 36.6% nulliparous and 19.6% of parity one women laid credence to this claim of a role for uterine fibroid, however other factors of infertility were not considered.

The true incidence of uterine fibroid in any community cannot be obtained and most data utilize hospital-based information [2,5 - 7]. In the present study, 8.5% of the study population were asymptomatic and were discovered during routine physical examination unconnected to fibroid complaint. In this study abdominal swelling constitute the commonest presenting symptom. This is in contrast to a recent review in this centre [5] where menstrual disturbance was reported as the leading symptom. It is possible that women now examine themselves following increased awareness of the condition in both the print and electronic media.

Infertility (primary or secondary) also occupy a prominent position in the presenting symptom of uterine fibroid and usually the condition of uterine fibroid are discovered during infertility investigation. The symptomatology of uterine fibroid may be multiple and a patient may have combination of some known clinical symptoms of the disease.

The major aim of patients presenting in the hospital with symptoms of uterine fibroid is relieve of symptoms and or restoration of fertility [2,5,7,11]. Retention of the uterus for the purposes of menses even in those in whom the gross appearance at surgery does not support a possibility of future spontaneous conception posses a great challenge for decision making. Consent for hysterectomy in this environment does not come easy [6 – 9,11,12].

The finding in this study of 71.2% of patients with moderate to severe pelvic adhesion involving the adnexia and or the surrounding viscera in the pathology will dictate that effort should be made during the gynaecological clinic attendance to counsel patient on alternative method of assisted reproduction after the restorative surgery to decrease the waiting time for spontaneous conception and decrease the chance of a regrowth of fibroid.

More than half of the study population (59.8%) had multiple uterine fibroids, which will require multiple incisions or a single large incision for removal with attendant blood loss and need for blood transfusions. Application of tourniquet or rubber shod clamps (Bonney's myomectomy clamp) to compress the uterine and infundibulo pelvic vessels will reduce significantly blood loss and the need for multiple blood transfusions during surgery and will prevent to the minimum associated blood transmitted diseases [11].

Uterine artery embolization and bilateral uterine artery ligation are two surgical procedures that will be of value in this environment when dealing with patients with a giant symptomatic uterine fibroid where consent for hysterectomy is difficult [8,12].

In conclusion, the finding of a high incidence of associated pelvic adhesion and adnexie pathology necessitating further surgical procedures should assist doctors in the care of women with uterine fibroid to include counselling on alternative form of assisted reproductive techniques to complement the surgical treatment to improve the chance of conception and shorten waiting period to reduce the chance of regrowth of the fibroid.

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Ophthalmic Surgical Practice In Ilorin, Nigeria In The 1990s

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Abstract

The treatment of ocular morbidity to restore vision often requires surgery. This study was done to determine the frequency of such surgical interventions and the various types of ophthalmic surgery done at the University of Ilorin Teaching Hospital (UITH), Ilorin, Nigeria. A retrospective review of all ophthalmic surgical procedures done in UITH between January 1990 and December, 2000 was carried out. The records were obtained from the operating theatre's register. Data analysis was with SPSS version 10.

Within the study period, 1398 ocular surgeries were performed. Cataract surgery was the commonest (54.5%) and mostly performed in the 50-69 years age group; repair of corneal laceration was next (6.9%). The third most common surgery was pterygium excision (6.7%), common in the 30- 69 years age group. Trabeculectomy for glaucoma was in the fourth position (6.2%). Destructive surgery (evisceration, enucleation and exenteration) was performed more in the paediatric age group.

Cataract blindness is curable by surgery; the progression of glaucoma could be arrested with surgery. Early surgical intervention in ocular trauma would not only restore anatomical integrity but functional ability of the eye. The cataract surgical output could be improved upon by organizing outreach program and peripheral eye clinics. Use of protective eye shields by susceptible individuals would minimize ocular morbidity from trauma. Prompt referral of children with potential blinding eye injury or treatable ocular tumour would reduce the incidence of destructive surgeries in children.

Keywords: Ophthalmic surgeries, Practice, Ilorin, Nigeria.

Introduction

Restoration of sight and prevention of avoidable blindness often necessitate surgical intervention. Cataract is the most common cause of reversible blindness globally (Nigeria inclusive) and is curable by surgery[1, 2, 3]. With increasing population growth and longevity, the number of blinds and that due to cataract is on the increase. Glaucoma is an irreversible cause of blindness and in West Africa is predominantly open angle glaucoma (OAG) [4]. It is also not unusual in West Africa to see young people between the ages of 30-40years with vision loss due to advanced glaucoma[4]. In spite of its efficacy in arresting the progression of glaucoma, acceptability of trabeculectomy has been found to be poor in West Africa [4, 5] . Trauma is an important cause of monocular loss of vision in developing countries and up to 5% of all blindness result directly from trauma[6]. In ocular trauma, early surgical intervention would not only restore anatomical integrity but also functional ability of the eye.

The objective of this study was to determine the frequency of such intervention and the various types of ophthalmic surgery done during the period between January 1990 and December 2000 at the University of Ilorin Teaching Hospital (UITH) Ilorin, Nigeria.

The department of ophthalmology in UITH was established in 1988 and during the period under review had staff strength of 2 Consultant Ophthalmologists, 4 trainee ophthalmologists (resident doctors) and one theatre session per week. The hospital is a tertiary institution and serves as a referral center for some states (with a combined population of about 14 million people) in the North Central geopolitical zone of Nigeria. The hospital is however not exactly equidistant to these adjoining states. Kwara-state has a population of about 2.3million with Ilorin, the state capital, (where UITH is sited) having a population of about 600,000.

It is hoped that the findings in this study would be a challenge to finding means of improving our surgical output in this environment. We are unaware of a previous communication on this topic from this centre to the best of our knowledge.

Materials and Methods

A retrospective review of the surgical records of patients who had ocular surgery at the University of Ilorin Teaching Hospital (UITH), Ilorin, Nigeria between January 1990 and December 2000 was carried out. The records were obtained from the operating theatre's register. The demographic

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data, the type of surgery done, volume per year and per different age groups were obtained and analyzed using SPSS version 10 statistical package.

Results

A total of 1398 patients were operated on. There were 805 males (57.6%) and 593 females (42.4%) giving a male to female ratio of 1.4:1. Table 1 shows the age distribution of the patients with 38.5% of them between the ages of 50 and 69 years. As shown in Table 2, cataract extraction tops the list of operated cases 762(54.5%), followed by repair of corneal laceration 96(6.9%), pterygium excision 94 (6.7%) and trabeculectomy 87 (6.2%).

The highest number of surgeries recorded was in 1991{213 (15.2%)}, the least was in 1998 {63(4.5%)}. All the years round, cataract surgery was the most common as shown on Table 3. Most of the surgeries - 518 (38.5%), was done for patients within the age group of 50-69years with cataract extraction being responsible for 373 cases (72%) of all surgeries within that age group and 49% of the cataract surgery performed for all the various age groups combined as shown in Table 4. Repair of corneal laceration was more prevalent within the 10-29 years age group representing 53.1% of all such repairs among the various age groups or 82.3% of corneal repair between the 0-29 years age group. Evisceration was performed more (63.6%) in the 0-9 years age group than in any other group and represent 23% of all the surgeries within that same group. Exenteration, evisceration and enucleation combined were responsible for 29.6% of the surgeries in the 0-9 years age group but were 7% of the total surgeries in all the age groups as shown in Tables 2 and 4. Pterygium was more common in the 30-69 years age group representing 78.7% of the surgeries in the group. Only 1 case of pterygium excision was recorded in the 0-9 year's age group. A prevalence of 72.4% was observed for Trabeculectomy within the age group 30-69 years compared to all the groups as shown in Table 4. Only 4 cases of Trabeculectomy were recorded in the 0-9 year's age group. Other surgeries like removal of foreign bodies (FB), chalazion incision and curettage, incision and drainage of lid abscess as well as repair of lid lacerations had a prevalence of 15.5% and were more common within the ages of 0-29 years as shown in Tables 2 and 4.

Discussion

About half of the world's blind population is found between 45-59years of age[1, 2] with cataract as the leading and one of the most important causes of blindness necessitating surgery, especially in the developing world[1]. Cataract, pterygium and corneal laceration (often due to trauma) were the 3 leading indications for surgery found in this study. Even though there was a decline in the volume of cataract surgery done over the years, cataract surgery still led the various surgeries done during the review period. This is in keeping with similar findings in our environment [3, 7, 9]. Although a higher age adjusted odds have been established in females than in males with the former accounting for more than 60% of the world's blind population[6] there is still a slight preponderance of males over the females in accessing medical facilities as evidenced from this study. This may not be unconnected with the poor economic empowerment of the women which places them at a disadvantage in seeking medical assistance, as it has been established that there is an inverse relationship between the prevalence of blindness and the economic status of the region / country / individuals[8]. Corneal blindness is a leading cause of childhood ocular morbidity in this environment and is often due to trauma. In this study, repair of corneal laceration is more prevalent in the 0-29 year old often from ocular injuries sustained at play either at home or at school (in the 0-9 years old) or at work (in the 10-29 years old).

Table 1: Age distribution of Patients

Age group (Years)	Frequency	Percentage
0-9	172	12.3
10-29	244	17.5
30-49	225	16.1
50-69	538	38.5
70-89	213	15.2
≥ 90	6	0.4
Total	1398	100.0

Table 2: Types of Surgery Performed

Types of Surgery	Frequency	Percentage
Cataract Extraction	762	54.5
Corneal laceration repair	96	6.9
Pterygium excision	94	6.7
Trabeculectomy	87	6.2
Evisceration	79	5.7
Enucleation	16	1.2
Exenteration	6	0.4
Excisional biopsy	41	2.9
Other (Chalazion, FB removal etc)	217	15.5
Total	1398	100

Table 3: Yearly Summary of Surgery

Type of Surgery	1990	1991	1992	1993	19994	1995	1996	1997	1998	1999	200	Total
Cataract extraction	119	128	92	55	55	80	72	45	29	52	35	762
Corneal repair	7	13	11	8	5	8	1	6	4	15	18	96
Enucleation	4	0	1	1	2	1	1	1	1	2	2	16
Evisceration	8	16	9	4	2	5	4	10	4	9	8	79
Excisional biopsy	7	4	4	1	0	4	2	3	7	7	3	41
Exenteration	0	0	0	0	0	0	0	0	1	0	5	6
Ptergygium excision	17	3	1	1	1	13	15	0	9	14	20	94
Trabeculectomy	17	11	3	2	4	7	6	16	4	4	13	87
Others	26	38	25	9	15	13	20	47	4	15	5	217
Total	205	213	146	81	84	131	121	128	63	117	109	1398

Table 4: Types of Surgery by age group

Type of Surgery	0-9	10-29	30-49	50-69	70-89	≥ 90	Total
Cataract extraction	42	82	93	373	166	6	762
Corneal repair	28	51	7	7	3	0	96
Enucleation	9	2	1	2	2	0	16
Evisceration	49	7	8	10	3	0	77
Excisional biopsy	12	9	11	7	2	0	41
Exenteration	5	0	0	1	0	0	6
Ptergygium excision	1	11	39	35	8	0	94
Trabeculectomy	4	10	31	32	10	0	87
Others	63	55	31	51	19	0	219
Total	213	227	221	518	213	6	1398

+ This includes repair of lid lacerations, incision and drainage of lid abscess, suture removal, and removal of corneal foreign body (FB), chalazion incision and currettage

The ophthalmic surgical output for all surgeries in this study averages 127 per year and 69 cataract surgeries per year. Though it compares favourably with the results from other centers in Nigeria[3, 9] nevertheless it presents a low output taking into consideration the high prevalence of cataract blindness in Nigeria[3, 9]. A lot of factors could be responsible for this low output, part of which is ignorance about the curability of the problem, fatalistic attitude to blindness as well as poor utilization of available facilities for vision restoration. The cost of surgery and low supply of human and material resources are other barriers to high cataract surgical output. Besides, UITH Ilorin, Nigeria is not immune to the vagaries in clinical services as observed in most institutions in the country brought about by incessant industrial dispute that would easily disrupt clinical activities including elective surgery as shown in Table 3.

All the cataract surgeries were done under local anaesthesia and in most cases using the intracapsular method (ICCE), except in the young paediatric patients where planned extracapsular cataract extraction (ECCE) without intraocular lens (IOL) implantation was done under general anaesthesia. Glaucoma surgery was not as common as cataract surgery in this study in keeping with the findings from other studies that have found low acceptability for glaucoma surgery in our environment [4, 5]. Probable reasons for the low glaucoma surgery in this study could be that most of the patients presented at the end stage of the disease and were not offered surgery or that those who did present early were not convinced about the need for surgery.

To improve the surgical output, a surgical outreach program should be organized to sensitize the people; a peripheral eye clinic could be established not too far away from the main hospital to serve as a referral source. A dedicated ophthalmic operating suite would minimize sharing of operating room with other surgical sub-specialties thereby increasing the surgical output. The cost of cataract surgery should be subsidized by the hospital management if free cataract surgery is not possible. Also surgical consumables if available at subsidized rate would reduce the overall cost of surgery.

Corneal blindness from trauma is preventable and severities minimal if appropriate eye health promotion is done by leaflets and or posters both in the print and electronic media as to the use of protective eye shields at work by susceptible individuals. Children activities should also be monitored at home and school and corporal punishment when necessary should be restricted to below the waist in order to avoid accidental eye injuries.

In conclusion, cataract extraction, pterygium exci-

sion and repair of corneal laceration were the most common surgery performed at UITH during the period of review. Uptake of surgery for glaucoma was low. Concerted efforts at health education among other measures might improve the uptake of surgeries for cataract and glaucoma. Eye health education on the importance and use of protective eye shields at work by susceptible individuals would minimize ocular morbidity from trauma; also, prompt referral of children with potential blinding eye injuries or treatable ocular tumour would reduce the incidence of destructive surgeries performed in that age group. There also has been an increase in the number of ophthalmologists and theatre sessions per week as well as re-training of the ophthalmologists in intraocular microsurgery with IOL implantation since after the study was conducted. We hope that these measures would bring about the desired change in volume, quality and type of eye surgery .

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Traumatic Hyphaema In Ilorin, Nigeria: Implications For Designing Preventive Health Education Messages.

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Abstract

Ophthalmic facilities and ophthalmologists required to manage Traumatic Hyphaema (TH) patients are scarce in most developing countries like Nigeria. Hence it is important to document the pattern of TH with a view to preventing eye injuries that cause them. We aim to document the pattern of TH in Ilorin, Nigeria, and draw out implications for the design of appropriate health education messages that will prevent causative eye injuries and ensure early presentation of patients with TH to the eye clinic.

A retrospective review of the hospital records of all the 23 patients that had TH at the University of Ilorin Teaching Hospital, Ilorin, from May 1999 to May 2005 was made. Sixteen of the 23 patients were males and 7 females (M:F=2.8:1). The age ranged from 6 to 60 years with a mean of 21 years. Seventeen of the patients (74%) were aged 20 years and below. Only 6 patients (26%) presented within the first 24 hours of sustaining eye injury. The activities that patients were engaged in when they sustained their eye injuries included children while at play 6 (26%), children while being disciplined by adults 5 (21.7%), domestic accidents 6 (26%), sports injury 2 (9%), occupational accidents 2 (0.09%), and assault 2 (9%). Eight patients (34.8%) underwent anterior chamber paracentesis due to their persistently elevated intraocular pressure and non-clearing hyphaema. Only a patient had a re-bleed episode.

In conclusion most patients with TH did not present early to the hospital following their eye injury. With appropriate precautionary measures, the various activities that led to their eye injuries could be made safer. The implications of these in fashioning relevant health education messages are explored.

Keywords: Traumatic hyphaema, ocular trauma, health education, Ilorin, Nigeria.

Introduction

Hyphaema is defined as the presence of blood in the anterior chamber of the eye. Presence of blood in the anterior chamber may not only obscure vision but may also block the angle drainage pathway that may lead to complications such as glaucoma and blindness. The general causes of hyphamea include trauma, surgery, neoplasm, vascular anomalies, neovascularization, blood dyscrasias and sudden lowering of intra-ocular pressure in an inflamed eye[1]. Contusion from blunt injury to the eye may cause traumatic hyphaema (TH), which in turn results from damage to the angle structures. Eye injuries are common, but most of them are minor. If not treated quickly and appropriately, these minor injuries can lead to sight–threatening complications. Emphasis should therefore be placed on injury prevention and early presentation by patients to eye facilities for treatment[2]. This is especially crucial in a developing world setting such as Nigeria where there is paucity of ophthalmic facilities and ophthalmologists.

TH consequent on blunt ocular injuries constitutes a significant cause of ocular morbidity in Nigeria[3], other parts of Africa[4,5] and elsewhere[6,7]. There is continued dearth of literature on hyphaema from Africa as was noted earlier[3]. This has informed our aim to not only document the pattern of TH in Ilorin, Nigeria, but also to draw out implications for the design of appropriate health education messages that will prevent causative eye injuries and ensure early presentation of patients with TH to the eye clinic.

Material And Methods

This is a retrospective study of hospital records of patients that were diagnosed with traumatic hyphaema (TH) from non-penetrating blunt ocular trauma at the University of Ilorin Teaching Hospital, Ilorin, between May 1999 and May 2005. This hospital is the main referral centre for patients from Kwara state and parts of Kogi, Osun, Oyo, and Niger states of Nigeria.

Data extracted from the records include age, sex, occupation, the laterality of the involved eye, and activity at the moment of injury, size (grade) of hyphaema, initial and final visual acuity, associated ocular damages, and duration of admission for those managed as inpatients. Other data extracted include intraocular pressure (IOP) measurements, the genotype, record of any episode of re-bleed of hyphema (secondary haemorrhage), medical and surgical interventions

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offered and the duration of follow up care.

Results

A total of 23 patients presented at the eye clinic of the University of Ilorin Teaching Hospital with traumatic hyphaema (TH) due to blunt injury during the period 6-year period (May 1999 to May 2005).

Age and sex distribution: The patients' ages ranged from 6 to 60 years with a mean of 21years (Table 1). Seventeen (73.9%) of the patients were aged 20 years and below. Male accounted for 16 (69%) of the 23 patients giving a male to female ratio of 2.8:1.*Occupation*: Eighteen (78%) of the patients were pupils or students at various levels of schooling. The remaining 5 others include, a carpenter, a trader, a medical practitioner, and two commercial drivers.

Time of presentation at the clinic: The interval between the injury and presentation at the eye clinic ranged from 2hrs to 2week with an average of 4 days (Table 2). Only 6 patients (26%) presented within the first 24hrs of the injury consisting of 4 males and 2 females.

Laterality of the involved eyes: The right eyes of nine patients (39%) and left eyes of the remaining 14 patients (61%) were involved in the trauma. *Activities that led to eye injuries*: Among children, the use of belts, sticks, and canes while being disciplined, and throwing of stones and sticks among themselves while at play accounted for 17 (73%) of the causes of the trauma. Domestic injury from belts and sticks, throwing of stones and sticks during play, and injury at school from a cane while being disciplined, accounted for 8 (34%), 6 (26%), and 3 (13%) of the cases respectively.

Among adults, the activities that led to TH included work-related injury (2), sports (2), and assault (2) (Table 3).

Grade of hyphaema: Using the relative volume of space occupied by hyphaema in the anterior chamber of the eye for grading, 11 (47%) presented with grade I (less than 1/3), 3 (13%) with grade II (1/3-1/2), while the remaining 9 (39%) patients had grade III (more than 1/2).

Initial and final visual acuity: The initial visual acuity at presentation ranged from perception of light (PL) to 6/60 while the final visual acuity ranged from NPL to 6/6.

Genotype results: Five results of haemoglobin electrophoresis were available, 2 of which were AS, 2 were AA, and one was AC genotype.

Associated complications: Two patients (8%) had vitreous hemorrhage; 1 (4%) had retinal detachment, 2 (8%) commotio retinae, and 1 (4%) macular hole. Thirteen (56%) had elevated intraocular pressure that ranged from 24mmhg to 54mmhg. While 3 others (13%) had ocular hypotony.

Management offered: Though all the 23 patients were offered admission into the hospital wards for inpatient care, only fifteen of them (65%) actually got admitted. Tthe duration of admission ranged from 5 to 16 days with a mean of 6.2 days. All the patients had a standard medical therapy that included the use of cyclopegic drops, steroid eye drops, and bed rest with or without patching of the eyes. Additionally intraocular pressure (IOP) lowering agents consisting of diamox tablets and timolol maleate eye drops were used for those with raised IOP.

Surgical intervention in form of anterior chamber paracentecis was performed on eight (34%) who had persistently elevated IOP and non-clearing hyphaema.

Only a patient (4%) had a re-bleed of hypheama on the 3rd day of admission. Other hyphaema-related complications included five patients that had corneal staining and six that developed cataracts subsequently.

Follow up duration: Only19 patients reported for follow-up care. The duration ranged from 2 weeks to 2 years and 3 months.

Discussion

The role of health education in preventing blindness from eye injuries is to promote awareness amongst the public about how to protect their eyes, and what to do in case of injuy[8]. It is in this regard that the discussion of the findings from this study is presented

The result shows that traumatic hyphaema (TH) from blunt injury is largely a problem of the younger age group (20 years and below) in Ilorin. In this study 17 (73.9%) of the subject were aged 20years and below with a male preponderance which is in agreement with previous studies[2,3].

Injuries sustained by children while at play and those sustained by them while being disciplined by teachers and by parents, are avoidable causes. Indeed a recent study[9] in South Africa revealed that most children (66%) who sustained penetrating eye injuries in their study did so while at play, while 85% of all injuries occurred in the absence of a caregiver. Effective education of both the parents and teachers (the major caregivers) on the need to adequately supervise children while at play and also make sure that potentially injurious items such as sharp ended toys are not made available to children will go a long way to minimize injuries from these causes. Parents and teachers also need to be educated on the need to use minimal force and to avoid sensitive areas of the body such as the face while applying corporal punishment on children if at all they must.

Among adults, work related injuries (2) and sports injuries (2) are also avoidable in the sense that wearing of appropriate protective devices might have prevented these injuries.

It may be too much to expect the already overburdened Nigerian ophthalmologists to directly carry out the various health educational messages outlined above. Resort should be made to utilize the services of community health workers as they had been found to be effective in training farm workers in eye health and safety[10].

Assault -related injuries will be more difficult to avoid, but then the effort of the collective society in ensuring adequate education and employment for her youths will decrease incidence of such misdemeanor in the society.

The importance of adequate monitoring of intraocular pressure in patients with TH cannot be over emphasized. All the 4 patients with cornea staining whose intraocular pressure (IOP) records were available had elevated IOPs (30–54mmHg). Also 4 out of 5 patients who had paracentesis had elevated IOPs (26-40mmHg).

Late presentation of affected individuals to the eye clinic was rife among subjects in this study, and also in an earlier study in Kaduna, Nigeria[2]. Early presentation of the patients at the eye clinic, coupled with a timely institution of appropriate treatment measures could go a long way in improving the outcome of TH. Factors that contribute to lateness in presenting include ignorance; poverty and lack of easy access to eye care facilities, which are mostly located in urban areas[2]. Mal-distribution of eye care personnel could also be a contributory factor.

Though all the patients had conventional medical therapy without the usage of amino-caproic acid due to non- availability, only one had an episode of re-bleed. This further corroborates findings from other studies, which disputed the usefulness of amino-caproic acid in preventing re-bleeds in TH patients[1,4,5].

In conclusion**,** most patients with TH did not present early to the hospital following their eye injury. With appropriate pre-cautionary measures, the various activities that led to their eye injuries could be made safer. The implications of these in fashioning relevant health education messages are as explored.

Table 1: Age and Sex distribution of patients with traumatic hyphaema

Age (Years)	Male	Female	Total	Percentage
0-10	3	2	5	21.7
11-20	8	4	12	52.2
21-30	1	1	2	8.7
31-40	1	-	1	4.3
41-50	2	-	2	8.7
51-60	1	-	1	4.3
Total	16	7	23	100

Table 2: Interval between time of injury and presentation of patients to eye clinic

Time elapsed before presentation	No of patients	Percentage
Within 24 hours	6	26
1-3 days	7	30.4
4-7 days	7	30.4
8-14	3	13.0
Total	23	100

Table 3: Patients activities that led to causative eye injury

Activities	Frequency
Children being disciplined	5
Children at play	6
Domestic accidents	6
Sports injury	2
Assault	2
Occupational accident	2
Total	23

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