

# A REVIEW OF OCULAR SURGERIES OVER A TEN-YEAR PERIOD IN THE UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL, RIVERS STATE, NIGERIA

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## SUMMARY

**Background:** This is a ten-year review of the ocular surgeries carried out in the ophthalmology department of the University of Port Harcourt teaching hospital, Port Harcourt, Rivers State between 1994 and 2004.

**Aim:** To find out the pattern of ocular surgeries carried out at the Eye Clinic of the University of Port Harcourt, with a view to planning for the future based on the frequency of uptake of the various surgeries. The data will also serve as an indirect indicator of the pattern of ocular conditions in the area served by the hospital.

**Results:** A total of 758 surgeries were carried out within the period under review. An average of 68.9 surgeries was carried out per year. The most frequently performed surgery was cataract extraction (46.8%) (number of eyes(n)=355).

The least performed surgeries were squint surgery, dacryocystorhinostomy, exenteration and socket repair. Only 81 cornea repairs and 25 trabeculectomies were carried out over the period under review.

**Conclusion:** There was a 40% overall increase in ophthalmic surgeries over the period under review but there was over 400% increase in cataract surgeries. This further emphasizes the public health importance of cataract and subtle changes in the management of glaucoma from offering immediate surgery to medical therapy.

**Key words:** ocular surgery, cataract, trabeculectomy, Nigeria

## INTRODUCTION

The eye clinic of the University of Port Harcourt Teaching Hospital, was established in 1978 as part of the former general hospital, Hospital Road, Port Harcourt. In 2002, it was moved to its permanent site at Choba where ultramodern facilities had been put in place to enable it serve the public better. The eye clinic has been given accreditation to enable it train residents taking the

examinations of the West African and National Postgraduate Colleges of Surgery. Consultant staff strength has been increased to ease the workload and boost the cataract surgical rate and surgical output of the department. Clinics are held four days a week and patients attend from the from four neighbouring states.

In the 10 years which this study covers, the hospital suffered no less than 20 strike actions (in some years up to 3 incidents). During this time, no surgical work was carried out. This has directly affected the cataract surgical rates over the years.

Increasing the surgical productivity of the existing ophthalmologists will help to reduce the backlog of cataract surgeries in the country.<sup>1</sup>

It has been observed that, in the last 10 years, output has fallen far below what is expected with only two surgeons at the most operating at any one time. This study reviews the number and pattern of eye surgeries carried out at University of Port Harcourt Teaching Hospital with a view to improving surgical output and as a possible guide for equipping the centre.

## METHODOLOGY

Details of all surgical operations carried out between the years 1994 and 2004 were retrieved from the records entered in the operation register at the ophthalmic theatre of the University of Port Harcourt Teaching Hospital, Port Harcourt, noting the different types, their relative frequencies and the period they were carried out. The data was analysed manually to show the total number of surgeries done over the period, the year(s) that the most or least surgeries were performed, and the most common and the least common surgery carried out. Their relative proportions were also calculated. For comparison, the booking diaries in the clinic were also examined to determine the total number of patients who were booked for surgery within the period.

## RESULTS

A total of 758 surgeries were carried out over the ten-year period under review. An average of 68.9 surgeries was done per year with a peak number in the year

1997(number of eyes (n) = 117) and the least in the year 1999 (n=22).

The most frequently performed surgery was cataract extraction, both intracapsular cataract extraction (ICCE) and extra capsular cataract extraction and posterior chamber intraocular lens insertion (ECCE+PCIOL) (n=355) which constitute 46.8% of total surgery performed. The least performed surgeries were squint surgeries, dacryocystorhinostomy (DCR-only one was done), exenteration and socket repair all of which were done less than 5 times within the 10-year period. A total of 82 destructive surgeries (0.11%) were done.

Initially the theatre was used for all surgeries including pterygium, but later, by the year 2000, it was restricted to complicated recurrent cases only and simple excisions were carried out in the outpatient section. Ninety-seven (n=97) pterygia excisions were carried out in the main theatre, aside of those done in the outpatient department (0.13% of all surgeries done). Proper records of those carried out in the outpatient section were not kept, therefore the total number done could not be estimated accurately.

A total of 355 cataract surgeries were done with 201 of them ECCEs which is 56.6% of total cataracts done. Only 25 trabeculectomies were performed over the 10 years under review (0.033% of all surgeries done). Eighty-one (n=81) corneal repairs (0.11%) and fifty two (n=52) lid surgeries (0.07%) were carried out.

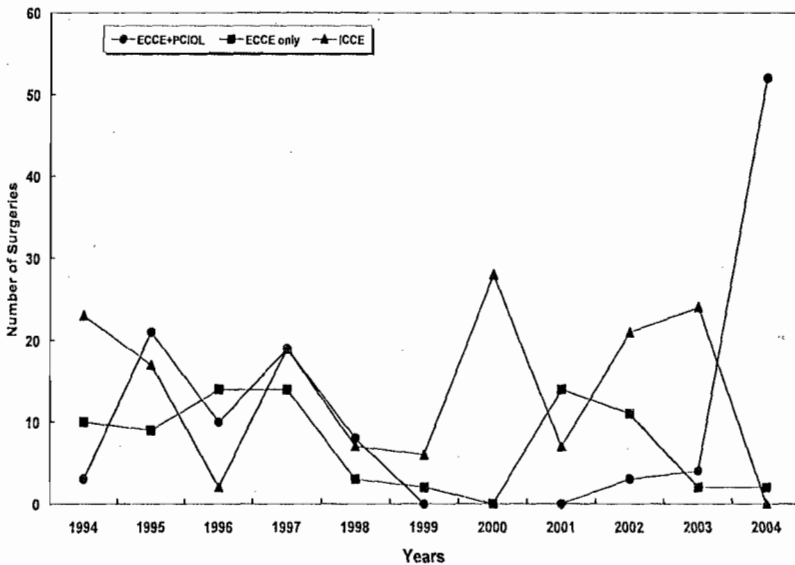


Figure 1. Chart showing trend of cataract extractions between the year 1994 and 2004.

**DISCUSSION**

Cataract remains the world’s leading cause of blindness<sup>2,3</sup> with about 16 million affected worldwide.<sup>4</sup> Many eye clinics provide cataract surgery for only a small proportion of those who need it, due to low demand, and partly due to deficiencies in the supply of services.

The department has a twin theatre complex (separate from the main theatre for other surgical disciplines) with 2 operating tables and 3 functional operating microscopes. Most times, only one table is in use, the other is shared with the ENT department. There are 2 operating days per week. Plans have reached an advanced level to upgrade the theatre to hold two operating tables to enable the supervising surgeon to oversee the resident when he/she is operating.

A total of 355 surgeries were carried out to extract cataracts over the period under review. Of these, 154 were ECCE+PCIOL, 81 were ECCE only while 120 eyes had IOLs inserted into the posterior chamber, making only about a third (33.8%) of the total number of cataract surgeries done. Most of the paediatric cataract surgeries were done after the babies were a month old, partly due to late presentation but also to reduce the risk of aphakic glaucoma which occurs more frequently in neonates.<sup>5</sup> Long-term (one year) follow up however showed a low incidence of bullous keratopathy and ocular hypotony, which was experienced in a study by Alhassan.<sup>6</sup> Biometry was not employed during the period under evaluation, instead standard powers of intraocular lens generally between 19D and 22D, as made available by management, were inserted per time with an over refraction offered after postoperative recovery. Retinoscopic auto refraction carried out during the operation, after the cataract has been removed, has

however been known to affect the visual outcome positively in terms of enabling us to know which power of IOL to insert at the time of surgery instead of inserting one blindly.<sup>7</sup>

In developing countries, the recommended first line of treatment for glaucoma tends to be surgery particularly for moderately advanced glaucoma rather than medical treatment due to the following reasons:

1. High default rate
2. High cost of drugs
3. Presence of fake drugs

This is in contrast to the developed world where drugs are the first line of treatment<sup>8</sup> due to the widespread availability of safe and effective drugs.

Even though most people affected by glaucoma live in the developing world,<sup>9</sup> the rate of surgery uptake in this study was low; just 25 eyes were operated in the period under review. This is in contrast to a report from East Africa in which 157 patients had glaucoma surgery in 2001 alone.<sup>10</sup> This may be attributed to poor patient satisfaction and lack of expertise. This situation is rapidly being reversed as further training is in progress.

**Table 1.** Types of surgeries carried out between the period of 1994 to 2004 at the eye theatre of the University of Port Harcourt Teaching Hospital, Rivers State

Type of Surgery	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TOTAL
ECCE+PCIOL	3	21	10	19	8	—	—	—	3	4	52	120
ECCE only	10	9	14	14	3	2	—	14	11	2	2	81
ICCE	23	17	2	19	7	6	28	7	21	24	—	154
Trabeculectomy	—	4	6	2	—	—	—	—	5	3	5	25
Combined	—	—	—	1	—	—	—	1	—	—	—	2
Pterygium	8	29	7	20	13	3	13	1	1	1	1	97
Enucleation	4	1	—	1	—	1	1	—	3	3	1	15
Evisceration	3	3	7	5	10	3	9	6	3	4	10	63
Corneal Repair	3	8	4	8	6	5	7	7	5	13	15	81
Vitrectomy	—	—	—	1	—	—	—	—	—	—	1	2
DCR	—	—	—	1	—	—	—	—	—	—	—	1
Excision of cyst	2	1	—	2	8	—	1	1	—	4	1	20
EUA	—	—	—	2	1	—	2	1	1	2	4	13
Paracentesis	1	—	—	3	1	—	2	3	—	1	—	11
Exenteration	—	—	1	1	1	—	—	1	—	—	—	4
Lid surgery	2	1	3	13	9	2	10	2	3	1	6	52
Squint	—	3	1	1	—	—	—	—	—	—	—	5
FB removal	—	2	2	3	1	—	1	1	—	—	—	10
Socket repair	—	—	1	1	—	—	—	—	—	—	—	2
<b>TOTAL</b>	<b>59</b>	<b>99</b>	<b>58</b>	<b>117</b>	<b>68</b>	<b>22</b>	<b>74</b>	<b>45</b>	<b>56</b>	<b>62</b>	<b>98</b>	<b>758</b>

*Key:* ECCE+PCIOL - extracapsular cataract extraction with intraocular lens, ECCE only - extracapsular cataract extraction only, ICCE - intracapsular cataract extraction, DCR-dacryocystorhinostomy, EUA-examination under anaesthesia, FB removal - foreign body removal

Only 2 cases of combined cataract and glaucoma surgery were done probably due to the low success rate.<sup>11,12</sup> It was however observed that only a few patients had significant cataract in association with glaucoma to justify the procedure. Intraoperative antimetabolic agents, particularly 5 fluorouracil, was used in 60% of glaucoma cases as against less than 40% usage reported by some researchers.<sup>9,10</sup>

After pterygium, the most frequently performed surgeries were evisceration and enucleation from cases of ocular trauma or infective conditions of the eye which are unresponsive to therapy. This was probably due to late presentation at the eye clinic or drug abuse from over-the-counter medication, leading to delay in instituting proper treatment. This is a common occurrence in Nigeria, however, even though these surgeries, particularly enucleation are an acceptable therapeutic modality used for end stage ocular diseases unresponsive to all other treatment,<sup>13</sup> the number of patients who had this procedure was low, probably due to the stigmata attached to losing an eye. DCRs, squint

surgery and socket reconstruction were also very few as the number of people who needed these services and presented at our clinic was low.

The number of surgeries during the period under review was not as high as it could have been. As many as 3000 surgeries could have been done within this ten year period instead of the 758 done, if an average of 25 eyes were operated upon per month going by the rate of booking. A minimum of 24 to 30 cases per month were booked for surgery, however, only one out of 4 cases actually turned up for surgery. This gives a 25.3% uptake of surgeries in the centre.

This situation in University of Port Harcourt Teaching Hospital is probably due to one, or a combination of the following reasons:

1. Long period of waiting by patients between obtaining cards and actually seeing the doctor (teaching hospital bureaucracy)<sup>14</sup>
2. Repeated visits while patients wait for results of investigations before they are started on treatment.

3. Different doctors are seen at each visit, leading to poor bonding and possible dissatisfaction.
4. Repeated union strikes which disrupt or delay treatment, thereby causing uncertainty.
5. Poor maintenance of instruments due to non availability of instrument engineers.
6. Poor supply of electricity and water.
7. Close competition from neighbouring eye centres with possibly better funding.
8. High cost of services in the teaching hospital.

The basic minimum cataract surgery accepted in developing countries according to well-documented reports<sup>15</sup> is extracapsular cataract extraction with posterior chamber intraocular lens (ECCE+PCIOL) and that is what now obtains at the institution under review, though it was not initially offered to patients. As this was the most common surgery needed by patients, every effort must be made to ensure that it is easily accessible in order to prevent avoidable blindness. At the time of this study, modern equipment needed (such as wet laboratories for training, biometry, a wide range of power of intraocular lens, etc.) to further enhance surgical outcome were not in place. Training programmes to upgrade the skills of the surgeons were also not easily accessible. Steps are being taken to upgrade the services in the centre to meet international standards in the form of better staffing, more stable electricity supply and the imminent introduction of small incision cataract surgery (SICS) which should improve outcome without necessarily increasing costs.<sup>2</sup> Non-retrobulbar anaesthesia, which improves surgery uptake as demonstrated in glaucoma surgery<sup>16</sup> and encourages adult surgery,<sup>17</sup> is not yet practiced here. A five year review of ophthalmic surgery in Ireland revealed a 24% increase in total number of surgeries with an increase in cataract surgery and a relative reduction in trabeculectomies.<sup>18</sup> Here in our series, there was a 40% increase in ophthalmic surgery over the ten-year period under review. There was however, over 400% increase in cataract surgery but the incidence of trabeculectomies remained the same over the period.

Further studies are needed to analyse the reasons for the relatively poor uptake of ophthalmic surgery in the area so that adequate steps can be taken to address the situation and reduce the cataract burden in the country.

### CONCLUSION

The data in this review confirms the findings in earlier studies that cataract extraction remains one of the world's most performed ocular surgery. Therefore, all the necessary facilities must be put in place to ensure that cataract operations can be carried out efficiently and consistently, so that the cataract burden in the locality is quickly alleviated. The new antiglaucoma drugs that are

approved by NAFDAC (National Agency for Food and Drug Administration and Control) will probably help to further reduce the number of patients that will need trabeculectomies due to their effective and tight IOP control.

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