OPHTHALMOLOGY

Initial Experience With Posterior Chamber Intraocular Lens Implant

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ABSTRACT

The results of extracapsular cataract extraction with posterior chamber intraocular lens implant at the Jos University Teaching Hospital are reviewed. The results suggest that despite lack of facilities to calculate the lens power for emmetropia, the use of a standard lens of about 19.0D will provide a good number of our patients with good functional vision and a quick return to independent life *(Nig J Surg Res 2000; 2:135-138)*

KEY WORDS: Posterior chamber, lens implant

Introduction

Present estimates show that there are about 3.5 million-cataract blind Africans[1] with about 600,00 becoming blind every year from cataract. [2] There are about 100-500 cataract operations performed per a million of the African population, each ophthalmologist performing less than 300 operations a year. [2] The world population is ageing and there is an increasing unacceptably high prevalence of operable cataract blindness in the developing world. [3] Various reasons have been provided for the low number of operations being performed. These include cost, lack of human and material resources, patient isolation, ignorance and poverty. Patient motivation, however seems to be the greatest barrier to cataract surgery. [1] There are a large number of aphakic blind patients. [3-7,10] These patients live with the impression that their vision cannot be improved as the spectacle is often not available. The other problem of aphakic spectacle correction is the functional visual acuity as against snellen visual acuity. It has been shown that for corrected aphakes to function as much as pseudophakes with 6/18 vision, they must be corrected to a visual acuity of 6/6. [8] There is therefore a need to improve on the functional visual outcome of cataract patients undergoing surgery so as to motivate more patients to accept cataract surgery. Intraocular lenses produce high quality vision without demands on the patient. This has been shown to serve as a stimulus for the increase in the rate of cataract surgery in the developed world. [9]

This is a report of the experience with the posterior chamber intraocular lens, with particular reference to the visual outcome and postoperative complications, where there are no facilities for preoperative calculation of intraocular lens power from biometry.

Materials and Methods

A retrospective study of all patients that had extracapsular cataract extraction with posterior chamber intraocular lens between June 1998

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and December 1999 at the Jos University Teaching Hospital, Jos was performed. Patients were identified from the theatre register. The case notes of these patients were analysed for personal data (age and sex), eye operated, preoperative visual acuity and intraocular pressure, intraocular lens power used, postoperative visual acuity, intraocular pressure, complications and the duration of follow-up.

Surgeries were performed by one surgeon (CDM) under both local and general anaesthesia. All patients received 500mg acetazolamide tablets in the morning of surgery even though patients with high intraocular pressures (above 21mmHg) had this controlled before admission for surgery. Surgery was by standard extracapsular cataract extraction (ECCE) with nuclear expression and cortical irrigation/aspiration with the simcoe canula. Where a viscoelastic was used, this was usually irrigated as much as possible after the limbal section had been sutured. Various types of posterior chamber intraocular lenses were used. The choice of lens power to be inserted was based on availability. Where patients' previous refractive errors were known, myopic patients received lower powers as against higher power for hyperopes. Lens insertion was under air, hydroxymethylcellulose or sodium hyaluronate depending on availability. Postoperatively, patients were placed on mydriatic, antibiotics and steroids, which were withdrawn over a five-week period. Snellen visual acuity was recorded from the first postoperative visit at one week. Patients were refracted from six weeks after surgery. Patients were on admission for a period of 3-6 days.

Results

A total of 65 extracapsular cataract extractions with posterior chamber intraocular lens implants were performed at this centre during the study period. Sixty case notes were suitable for analysis of which 36 were males and 24 females (ratio 3:2). Thirty-one surgeries were performed on the right eye while 29 were performed on the left eye. The age range was 11- 80 years with a distribution as shown in table 1.

Table 2, shows the pre and postoperative visual acuities. Most patients were legally blind before surgery was performed. Only two eyes had surgery done at visual acuity of 6/24 because of excessive glare and inability to read. Intraocular lens power ranged between 18.0 and 23.0 Diopters. Postoperatively, all 60 patients were seen at least one week after surgery. Out of these, 13 patients had a visual acuity of 6/12 or better, while 10 (16.7%) had a visual acuity of 6/60 or worse.

Fifty-one (85%) patients were available for refraction after six weeks of discharge from hospital. Forty two had their visual acuity corrected to 6/12 or better; 4 had visual acuity of 6/6 or better without correction and all had 19.0D lenses implanted. Twelve other patients needed spectacles to see 6/6, of which 2 were corrected with –6.0 DS. One of these patients had a 23.OD lens implant while the other had a 22.OD lens implanted. Table 3 shows the pre- and postoperative visual acuities of the patients that were lost to follow-up.

Postoperative complications (Table 4) included excessive pigment deposits on the intraocular lens in 8 patients. Striate keratopathy was seen in 4 patients, which cleared without visual consequences. Posterior capsule opacification was seen in 2 patients with visual acuities of 6/36. Five patients had raised intraocular pressure (above 22mmHg) on the first postoperative day. These patients were treated with oral acetazolamide 250mg bd for 3 days. All of these patients had hydroxymethylcellulose used in their eyes at surgery. Other complications included hyphaemas, uveitis, conjunctivitis and uveal prolapse. These were treated accordingly.

Duration of follow-up was 1 - 28 weeks (mean 11.4 weeks). Pre-existing ocular diseases accounting for low visual outcome included glaucoma 2, diabetic retinopathy 1 and age related macular degeneration 1.

Table 1: Age distribution of patients undergoing ECCE + PCIOL

Age range (years)	No.
11-20	1
12-30	3
31-40	5
41-50	10
51-60	14
61-70	9
71-80	18
Total	60

ECCE = Extracapsular cataract extraction
PCIOL = Posterior chamber intraocular lens

Table 2a: Pre and Postoperative Visual Acuities of Patients Having ECCE + PCIOL

Visual acuity	No. (%)		
	Pre-op	Post-op	Corrected at 6wks.
6/12 or better	-	13 (21.7)	42 (82.4)
6/18 – 6/36	2 (3.3)	37 (61.7)	9 (17.6)
6/60 – cf	28 (46.7)	10 (16.7)	-
H.M or worse	30 (50.0)	-	-
Total	60	60	51

Table 2b: Pre and Postoperative Visual Acuities of Patients Having ECCE + PCIOL and Lost To Follow-Up

Visual acuity	No.	
	Pre-op	Post-op
6/12 or better	-	-
6/18 – 6/36	-	5
6/60 – 3/60	2	4
<3/60	7	-
Total	9	9

Table 3: Postoperative complications of ECCE + PCIOL in 32 patients

Complication	No. (%) N = 60
Pigment on lens	8 (13.3)
Raised intraocular pressure	5 (8.3)
Striate keratopathy	4 (6.7)
Posterior capsule opacification	2 (3.3)
Hyphaema	3 (5.0)
Uveitis	4 (6.7)
Macula oedema	1 (1.7)
Conjuctivitis	1 (1.7)
Uveal prolapse	2 (3.3)

Discussion

In this study, 21.7% of patients followed up had a visual acuity of 6/12 without correction while up to 50 patients (83.3%) had a visual acuity of 6/36 or better. This offers good functional vision for a majority of our patients who are farmers. This will not be possible with the use of traditional aphakic spectacles, as it can be cumbersome performing manual work with them. There were no adverse complications. Only two patients had posterior capsule opacification requiring posterior capsulotomy. The short duration of follow-up could be responsible for this low number. Many more patients may have capsule opacification if followed up for a longer period of time. The results compare favourably with other reports.[11,12]

Better results are with facilities to accurately calculate intraocular lens power. This study however suggests that the standard lens power for emmetropia should be about 19.0D. Nine patients were lost to follow-up. None of them had a visual acuity less than what they presented with. It will be difficult to speculate the reasons for their early default.

It is concluded that despite constraints, routine ECCE with posterior chamber intraocular lens implantation will provide a good number of cataract patients with good functional vision and a quick return to

independent life. However, for the long-term effects of this to be sustained, there is a need for a Yag laser to circumvent the problems of posterior capsule opacification.

References

1. Yorston D. Are intraocular lenses the solution to cataract blindness in Africa (Commentary). Br J Ophthalmol 1998; 82: 469-471.
2. Forster A. Who will operate on Africa's 3million curably blind people? Lancet 1991; 337:1269.
3. Bucher PJ, Ijsselmuiden CB. Prevalence and causes of blindness in the Northern Transvaal. Br J Ophthalmol 1988; 72: 721-726.
4. Hogeweg M, Sapkota YD, Forster A. Acceptability of aphakic correction. Results from Karnali eye camp in Nepal. Acta Ophthalmol 1992; 70:407-12.
5. Cook CD, Stulting AA. Impact of a sight-saver clinic on the prevalence of blindness in Northern Kwazulu. S Afr Med J 1995; 85: 28-29.
6. Cook CD, Stulting AA. Prevalence and incidence of blindness due to age-related cataract in the rural areas of South Africa. S Afr Med J 1995; 85: 26-7.
7. Arnold J. Global cataract blindness: the unmet challenge (editorial) Br J Ophthalmol 1998; 82: 593-4.
8. Fletcher AE, Ellwein LB, Selvaraj S. et al. Measurement of vision function and quality of life in patients with cataracts in southern India. Arch Ophthalmol 1997; 115: 767-74.
9. Fagadau WR, Maumenee AE, Stark WJ Jr., Datiles M. Posterior chamber intraocular lenses at the wilmer institute: a comparative analysis of complications and visual results. Br J Opthalmol 1984; 68: 13-18.
10. Ellwein LB, Kupter C. Strategic issues in preventing cataract blindness in developing countries. Bull W H O 1995; 73: 681-90.
11. Cook NJ. Evaluation of high volume extracapsular cataract extraction with posterior chamber lens implantation in Sierra Leone, West Africa Br J Ophthalmol 1996; 80: 698-701.
12. Adejor GO. Early experience with posterior chamber intraocular lens (PC-IOL) implantation in National eye Centre, Kaduna, Nigeria. Nig J Ophthalmol 1997; 5: 6-12.