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Outcome of Paediatric Cataract Surgery in Jos: Central Nigeria

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Abstract

Background: This study was carried out to assess the visual outcome of children who had cataract surgery in Jos University Teaching Hospital between January 2001 to December 2005.

Patients and methods: The case notes of all the children who had cataract surgery during the study period were retrieved. Information on history, examination, investigations and type of surgery done were noted. Visual acuities before and after surgery were also recorded.

Results: There were 43(69.4%) males and 19(30.6%) females giving a ratio of 2.3:1. Extracapsular cataract extraction was done in 75(92.6%) eyes, while lens washout was done in 6(7.4%) eyes. Eight (9.9%)) eyes had visual acuity between 6/6-6/18 while 47(58.0%) eyes had visual acuity less than 6/60.

Conclusion: The poor visual outcome in this study is attributed to many factors such as delay in presentation, absence of other ocular pathology, inadequate instruments for paediatric assessment and surgery and failure to turn up for follow-up.

Key words: Cataract, surgery, visual outcome

Introduction

There are estimated 1.5 million blind children in the world, around 90% of them live in developing countries in Asia and Africa[1,2].

Childhood cataract still accounts for about 10% of blindness in children worldwide[3]. There are many conditions that are associated with cataract in childhood, one of which is rubella infection[4]. As many as 50,000 children are born every year with cataracts due to congenital rubella syndrome which could be prevented by a programme of immunization[5]. Other conditions are cytomegalovirus, syphilis, ingestion of steroids by the mother, maternal diabetes and hereditary[4], which accounts for about 25% of cases[6]. Congenital cataract maybe combined with systemic abnormalities such as trisomy 21 and Turners syndrome. Mental retardation is commonly associated with bilateral congenital cataracts, and there are many inherited syndromes with this combination linked with other abnormalities such as craniofacial or skeletal deformities, myopathy, spasticity or other neurological disturbances[7]. Studies done in Western India[8] showed that trauma from blunt and penetrating injuries were the major causes of cataract in children. In developing countries, particularly in the rural areas a child with cataract often stays at home as the parents are unaware that the child is suffering from a treatable condition[9]. This can lead to the development of amblyopia especially if the lens is very dense and occurred early in life before the age of 2 months[7]. Managing cataracts in children remains a challenge; treatment is often difficult and tedious[2]. Lensectomy combined with posterior capsulotomy and vitrectomy should be carried out by a paediatric-oriented ophthalmologist with the necessary skills and commitment to supervise the child's visual development[1,2]. Intraocular lens implantation is generally considered to be a safe surgical technique for the correction of paediatric aphakia[10], but a lack of instruments in the developing world operating room setting, such as handheld keratometer and the A-scan ultrasound creates difficulty in selecting the appropriate intraocular lens power to use for paediatric cataract surgery[2]. We conduct a retrospective study to assess visual outcome after cataract surgery.

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Patients and Methods

This was a retrospective case series of children who underwent cataract surgery in Jos University Teaching Hospital. The case notes of patients aged 0 to 18 years diagnosed with cataracts between January 2001 to December 2005 were retrieved. Information on name, age and sex were noted in a prepared proforma. The history of presenting complaints and the cause of cataract were recorded. Other information in the history such as antenatal, perinatal and postnatal histories for those with congenital cataract was noted. Ocular and general examination carried out on the patients was also noted. Information on type of surgery done, visual rehabilitation, outcome and complications was

Table 1: Age and Sex Distribution

Age (Years)	Males	Females	Total	Percentage
0 - 1	2	5	7	11.29
2 - 5	10	3	13	20.97
6 - 10	15	7	22	35.48
11 - 15	10	4	14	22.58
16 - 18	6	0	6	9.68
Total	43	19	62	100

Table 2: Aetiology of Cataracts in 81 Eyes

Aetiology	Males	Females	Total	Percentage
Developmental Cataracts	23	11	34	14.98
Trauma	24	8	32	39.51
Congenital Cataracts	6	9	15	18.52
Total	53	28	18	100

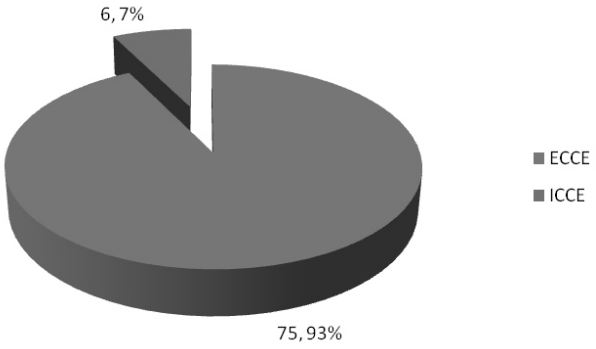
Table 3: Pre - and Post Operative Visual Acuities

Visual Acuity	Preoperative	Postoperative
6/6 - 6/18	0	8
6/24 6/60	5	13
<6/60	64	47
Follow Light	12	-
Not Recorded	-	13
Total	81	81

Table 4: Complications during and after Surgery

Complications	Number
No complications	40
Posterior capsular opacity	16
Iris prolapse	7
Vitreous loss/updrawn pupil	4
Corneal opacity/adherent leucoma	3
Inadvertent iris dialysis	1
Posterior synechiae	1
Retinal oedema	1
Keratopathy	1
Dislocated PCIOL in AC from trauma	1
Macular hole	1
Iris pigments on anterior lens surface	1
Pannus	1
Postoperative ptosis	1

Figure 1: Number of Extracapsular and Lens washout



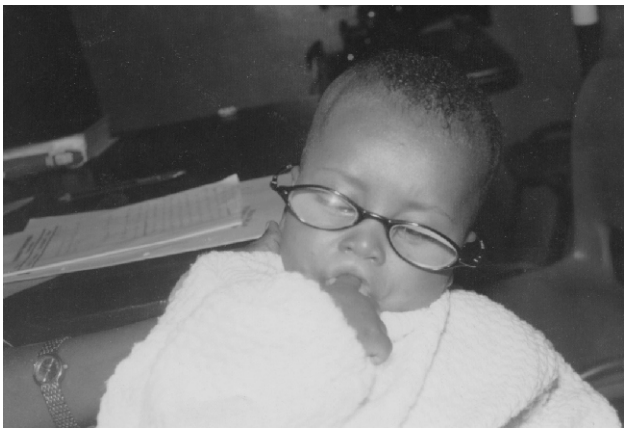


Figure 2: Corrective spectacles after cataract extraction in a child.

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recorded. In all there were 62 patients seen with the disease affecting 81 eyes.

Results

The case notes of the 62 patients showed that 19 patients were affected in both eyes giving a total of 81 eyes. There was a male preponderance as shown on table 1. There were 43(69.4%) males and 19(30.6%) females giving a ratio of 2.3:1. The age groups mainly affected were those between 6-10 years in both sexes.

Table 2 shows developmental cataract occurring in 34(42.0%) eyes, while traumatic cataract was seen in 32(39.5%) eyes and congenital cataract was noted in 15(18.5%) eyes.

Visual acuities were recorded before and after surgery. The preoperative visual acuity seen on table 3 showed that 64(79.0%) eyes had worse than 6/60, while 5(6.2%) eyes had a vision of 6/24 to 6/60. The vision of 12(14.8%) eyes was not recorded. The postoperative visual acuity showed 8(9.9%) eyes had 6/6-6/18, 13(16.1%) had 6/24-6/60, while 47(58.0%) were worse than 6/60. The vision of 13(16.1%) were not recorded.

Table 4 showed the type of complications seen during and after surgery. Some eyes had more than one complication. Posterior capsular opacity occurred in 16(19.8%) eyes, iris prolapse in 7(8.6%) eyes, vitreous loss resulting in updrawn pupil in 4(4.9%) and corneal opacity from trauma in 4(4.9%) eyes.

The 2 types of surgery done in both eyes are shown in figure I. Extracapsular cataract extraction was done in 75(92.6%) eyes. Of these 60 eyes had posterior chamber intraocular lens implants. Six (7.4%) eyes had lens washout, with anterior chamber implants in 3 eyes.

Discussion

Cataract surgery is much more difficult in children and very few clinical trials have been undertaken to explore the optimum management[1,2]. Sixty-two patients seen in this study showed a male preponderance. This difference can be attributed to the fact that trauma accounted for 39.5% in this study and boys are known to be more exposed to trauma than girls as seen in other studies[7,11].

Cataract in children may present at birth, few weeks or months after birth and this is known as congenital cataract, or the first few years of life, known as developmental cataract[9] or maybe acquired through trauma[8]. Based on this classification, 34(42.0%) eyes were diagnosed as developmental cataract, 32(39.5%) eyes as traumatic and 15(18.5%) as congenital. All the patients diagnosed with congenital cataracts were further assessed by the paediatricians to rule out any congenital systemic diseases and fitness for general anaesthesia. None of the patients with congenital cataract was tested for antibodies for rubella, cytomegalovirus or syphilis even when there was strong indication from the history. Studies in Western India[8] showed 4.6% of congenital cataracts are due to rubella infection.

Visual acuity is the ability to distinguish separate elements of a target and identify it as a whole[6]. Preferential looking tests consisting of teller acuity cards and Cardiff acuity cards are used for infants, while children 2 years of age are presented with the Kay pictures[6], or other familiar pictures in their environment. Most children at 3 years will be able to undertake the matching single-letter optotypes in the Sheridan Gardner test while those from 4 years and above will be able to perform the linear Snellen acuity test[6], and the illiterate 'E' chart. The preoperative visual acuity taken in the very young children here was by show of light to see if the could follow it. Others were by the illiterate 'E' chart for those who were not in school and the Snellen's chart for those who could read. Five(6.%) eyes had 6/24, 6/60 vision, 64 (79.0%) had less than 6/60, while 12 eyes were said to follow light.

Good visual outcome depends on doing the surgery as early as possible within the period of onset of visual disabling cataract[1], though an ideal time for early surgical intervention which may result in a few

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complications and maximum visual outcome has not been identified with certainty[12]. Cataract surgery is

c) Trauma has been found to be a major cause of cataract. Both parents and children should be educated on the need to take care of their eyes especially while playing.
d) Hospitals should be well equipped with instruments such as handheld keratometer and A-scan ultrasound for biometry to determine the proper intraocular lens power.
e) All children who have had cataract surgery must be refracted after one month.
f) Patience should be exercised when doing a visual acuity and refraction on children.
g) Parents must be educated on the importance of follow up after surgery.

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