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Study Of Cataracts in Adolescent Age Patients.

KEYWORDS: Adolescent cataract, Trauma, Amblyopia.

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ABSTRACT *Treatment decisions of Adolescent cataracts and results have lifelong implications. The outcome of pediatric cataract surgery in developing countries remains poor as a result of late detection, inadequate surgical facilities and expertise for children, lack of pediatric anaesthesia and inadequate follow-up.*

Methods: This was a prospective institutional study to review the patients of Cataracts in 10-18 yrs age presenting to OPD of a rural tertiary Government Hospital from Jun 15 to Aug 16 The patients were examined for Visual Acuity, Slit lamp examination and Fundus exam to note Vision, type of cataract, cause of cataract and any associated ocular/ systemic condition. They were operated and final visual outcome noted.

Results—52 adolescent cataracts were studied. 40 were traumatic in origin and 12 of developmental type. 10 (19.23%) cases showed Visual acuity <6/60. 42 (80.67%) cases improved to a best corrected Visual acuity > 6/18.

Conclusion- Traumatic cataracts showed good results, Few Developmental cataracts had amblyopia.

Introduction-

Cataract remains the most common cause of major visual disability among any other forms of treatable blindness in children.Visually significant unoperated cataracts, or complications of cataract surgery lead to a compromised quality of life and a socioeconomic burden to the child, the family and the society.Successful management of such cataracts in children is often difficult, requiring awareness, early diagnosis, surgical expertise with experienced anaesthesiologists and refractionists.

Juvenile cataracts are those with an onset in childhood,after infancy,irrespective of underlying aetiology. They present as mostly Cortical or Lamellar cataracts.

No detectable cause is found in 85% of adolescent cataracts. Approximately 50% childhood cataracts are caused by gene mutation and are dominantly inherited, others are autosomal recessive or X- linked. Certain Metabolic disorders can cause cataracts.Trauma is the major cause of acquired cataract in children.Traumatic cataracts are most common in boys,and can be a result of penetrating or blunt injuries to the eye.Secondary Cataracts are seen in uveitis due to inflammation or long term steroid use as in JRA.Cataracts also common After Radiotherapy treatment of Intraocular Tumors.Cataracts occur in Chronic Retinal Detachment, Stickler Syndrome,Lasers for Retinopathy Of Prematurity also result in Cataract.Cataracts in Rubella and Maternal infection also present late.

Material and Methods-

This was a prospective institutional study to review the patients of Cataracts in 10-18 yrs age presenting to OPD of a tertiary Government Hospital in a rural tribal setup of Dhule from Jun 2015- Aug 2016. Detailed History, developmental milestones, health problems in siblings and parents(inherited cataracts)were noted.

The patients were examined for Visual Acuity, Slit lamp examination and Fundus exam after mydriasis to note the Vision at Presentation,nystagmus, type of cataract, cause of cataract and any associated ocular/ systemic condition. USG B scan was done where fundus was not visible. A Scan and Keratometry were done to calculate IOL power. Paediatrician checkup to rule out any associated systemic anomaly.

CBC,Urine, BSL, TORCH,VDRL,Blood test for Ca, Ph, Glucose,Galactokinase levels.

Anaesthetic fitness was evaluated.

They were operated upon and the final visual outcome noted. The surgical procedures included Small incision cataract surgery with, in the bag posterior chamber intraocular lens implantation. Posterior capsulorrhexis (PPC)and anterior vitrectomy(AV) were done in all cases till 8 years of age. Scleral Fixation of PC IOL was done where required. These were done under general or standby anaesthesia.Older co-operative kids were given Peribulbar Block with IV sedation.Any additional surgery if required like strabismus was carried out at a second stage.

Postop Local steroid antibiotic eye drops given. Cyclopent eye drops instilled where required. Systemic antibiotics and anti-inflammatory were given.

Postop slitlamp examination done. Vision testing and refraction was done at 40 days and Final visual outcome noted.

Followup schedule at 3rd day, and every week for 6 weeks. Every month for 6 mths, every 6 months to 2 yrs. And as required.

Complications were noted as Fibrin reaction, PC Opacifications, Secondary cataract, Secondary Glaucoma and Amblyopia and treated accordingly.

Observations-

52 patients of adolescent cataract were studied.
40 were in the age group of 10-14 yrs.
12 were in age group of 14-18 yrs.

Table.1 Age distribution

10-12yrs	24
12-14yrs	16
14-16 yrs	8
16-18 yrs	4
Total	52

40 were males and 12 were females.

Table 2. Diagnosis Age

Before 5 yrs	8
5-10 yrs	32
After 12 yrs.	12

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1 child had associated Squint, (RE)Exotropia 20 degrees.

Table 3 . Cause of Cataract

Trauma	40
Congenital Cataract	9
Rubella	1
JRA	1
Secondary Cataract	1

Maximum kids had Total cataracts.

Table 4. Type of Cataract

Total Cataract	23
Zonular	6
Nuclear	0
post. Subcapsular	0
Polar cataract	1
Membranous	22
Sutural cataract	0
Blue Dot cataract	0

Table 5. Type of Surgery

SICS with PPC with AV with PCIOLI	29
Membranectomy with PCIOLI	22
Cat. Extraction with Primary SFIOL	1
Cat.Extraction with Secondary PCIOLI	0

Postop complications are shown in Table 6.

Table 6.Postoperative Complications

Uveitis (fibrin reaction)	4
PCO	2
Pupil Capture	2
Secondary Glaucoma	0
Amblyopia	4

10 (19.23%) cases showed Visual acuity <6/60. 42 (80.67%) cases improved to a best corrected Visual acuity > 6/18.

Table 7. Postoperative Vision Improvement

PL-FC 3mt	2
6/60-6/24	8
6/18-6/12	38
6/9-6/6	4

Discussion:
Adolescent cataracts remain a challenge, Special surgical skills are needed, more postop inflammation care required, amblyopia needs to be addressed.

General anaesthesia was required in younger patients, though this didn't alter the visual outcome but became an additional requirement at the surgical setup.

In our study we came across -Trauma-as the major cause of Cataract in adolescent age group. (40=76.92%) and were operated upon meticulously.

1 child had Cataract associated with Rubella . Giving General anaesthesia to these patients posed problems. Hence we tried local anesthesia with Glycopyrullate. (Propofol) There being microophthalmos and Microcornea, complications like poor vision, ensued.

Maximum studies have studied congenital cataracts and their surgical outcomes. Hence we wanted to study only Adolescent cataracts.

Comparison of studies was done and found that our results were much better.

All patients improved over their Preop.visual acuity.
Visual acuity < 6/60 was seen in 10 (19.23%)
Visual acuity >6/60 was seen in 50 (96.15 %)
Visual acuity >6/18 was achieved in 42 (80.76%).

A study from East Africa showed, 44% had a latest corrected vision of 6/18 or better and 91.2% had a latest corrected vision of 6/60 or better.[15]

Other such studies have shown 40- 47 % improvement.[1,2]

A similar study from Central India showed the visual outcome of 39.5% having postop visual acuity >6/18 [9].

These results are also comparable to results from Nepal [11] and India[13].

The outcome was poorer in congenital cataracts especially those operated after > 1 yr of age.[3]

Amblyopia most common cause being Visual Deprivation. Blurred or distorted images in the first few months of life causes the brain to setup abnormal visual connections leading to amblyopia. Amblyopia less in Developmental Cataract. The later the child is operated upon after presentation in congenital cataracts, the more the amblyopia.

Meticulous Follow up must for preventing Amblyopia. Therefore there is a need to determine the reasons for failure to attend follow-up and improve future attendance.

The most common early postop complication was presence of fibrin reaction (13.3 %)[13]. Similar findings (30.5%) reported in another study[15] .

For children, IOLs important, ensure more freedom to pursue normal childhood activities without the spects. Complications related to IOL implantation were few, possibly due to use of good IOLs and in the bag implantation in most cases.

Scleral fixation of posterior chamber IOL was done in one case of subluxated cataract primarily and showed very good results.

PCO ranging from 50% to 100 % was reported ,if pc was intact.[13,15] We believed PPC with anterior vitrectomy is mandatory in all children till 10 yrs and was done,hence only 2 cases showed pco.

Results
52 patients with cataract in adolescent age were studied. Of these 40 were of traumatic origin and 12 of developmental type.

Young patients were prone for trauma while playing, road traffic accidents and work related trauma. Traumatic cataracts showed good results, Few Developmental cataracts had amblyopia. Better vision with older age at surgery and normal interocular axial length difference. Amblyopia was the major coz of residual visual deficit.

Conclusion-
Early detection and surgery, optical rehabilitation, and close follow up are essential for good outcome. Teacher training in schools for early diagnosis and regular follow-up will help.

Fig.1. Zonular Cataract

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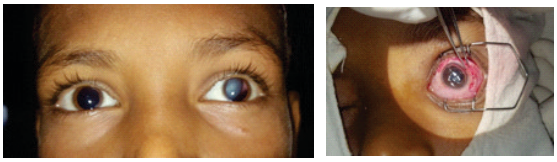

Fig.2. Subluxated cataract with Scleral fixation of PCIOLI

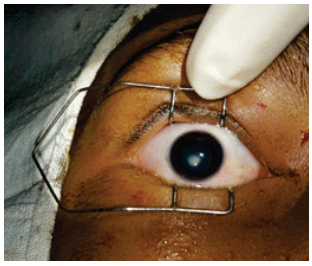

Fig.3. Anterior Polar Cataract.

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