INTRAOPERATIVE, POSTOPERATIVE COMPLICATIONS AND VISUAL OUTCOME IN CASES OF POST UVEITIC CATARACTS

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ABSTRACT

BACKGROUND

Cataract surgery in a patient with uveitis is more complex than senile cataract extraction. In this study, we are trying to assess intraoperative and postoperative complications encountered during surgery for uveitic cataract and to assess the factors which affect the visual outcome

MATERIALS AND METHODS

The study was done in Regional institute of ophthalmology Government Ophthalmic hospital, Egmore, Chennai from August 2005 to Oct. 2007. The patients who attended the outpatient and uvea clinic were included for the study. A total of 60 patients were taken up for the study.

RESULTS

The intra operative complications that were encountered were dense posterior synechiae, excessive conjunctival bleeding. The immediate post op complications that were noted were anterior chamber reaction and pigment dispersion. The immediate post op visual acuity ranged from 6/9 to 6/24 in 14 patients, 6/24 to 6/60 in 22 patients, 5/60 to 2/60 in 20 patients, less than 2/60 in 4 patients.

CONCLUSION

Cataract associated with uveitis usually develops at early age, affecting children and young adults. A higher incidence of sub capsular cataract leads to glare and near vision difficulties. Preoperative anti-inflammatory regimen must be carefully planned for each individual patient.

KEYWORDS

Complicated Cataract, Uveitis, Pupillary Membrane, Posterior Synechiae, Macular Edema.

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BACKGROUND

Cataracta complicata refers to cataract that results from a disturbance of the nutrition of the lens due to inflammatory or degenerative disease of other parts of the eye.[1] Cataract surgery in a patient with uveitis is more complex than senile cataract extraction, because it involves[2] multiple considerations related to the cause of uveitis, prospects of visual rehabilitation, appropriate surgical timing, and technique, the type and material of intra ocular lens used.

Establishing the diagnosis, thorough ocular examination, careful patient selection and meticulous control of perioperative inflammation are key elements to a successful visual outcome.[3] Indications of cataract surgery in uveitic patients are- visual rehabilitation, enhancing visualization of posterior segment, removal of protein leaking lens in patients with phacogenic uveitis. Cataract surgery has immense benefit in the visual rehabilitation of patients with uveitis and cataract.[4] Cataract surgery with PCIOL implantation has been established as a safe modality of treatment.

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Aims and Objectives

1. To assess intraoperative and postoperative complications encountered during surgery for uveitic cataract.
2. To assess the factors which affect the visual outcome.

MATERIALS AND METHODS

The study was done in Regional institute of ophthalmology Government Ophthalmic Hospital, Egmore, Chennai from August 2005 to Oct. 2007. The patients who attended the

outpatient and uvea clinic were included for the study. A total of 60 patients were taken up for the study. A detailed history and a complete ophthalmic examination was done.

Inclusion Criteria

1. Patients with chronic uveitis and complicated cataract were taken up.
2. A quite eye (without inflammation) for at least 3 months.

Exclusion Criteria

1. Complicated cataracts due to causes other than uveitis were excluded.
2. Patients with posterior segment pathology were excluded (by B scan)

Ocular Examination

A complete ophthalmic examination was done for all patients, which included detailed slit lamp examination, fundus examination by direct and indirect ophthalmoscopy, visual acuity, colour vision, IOP measurement, B scan.

Investigations

- Routine blood investigations – TC, DC, ESR.
- Mx, chest x- ray.
- Blood sugar.

To rule out any associated systemic disorders, opinions from other department's like- rheumatology, gynaecology, dental, dermatology were obtained.

Pre-op Medications

All patients were started on topical antibiotic steroids 1 week before the surgery. Strong mydriatics like 1% atropine eye ointment or 2% homatropine were used for full pupillary dilatation.

Surgery

- Peribulbar block was given to adults, General anaesthesia for children.
- Out of 60 patients, 52 patients underwent SICS with PCIOL implantation, 6 patients underwent ECCE with PCIOL and for 2 patient phacoemulsification with PCIOL implantation was done.
- First a conjunctival flap was made superiorly, tenon's capsule was separated completely, bipolar cautery was done to the bleeding vessels.
- Anterior chamber was entered either through the limbal wound or the scleral tunnel. Viscoelastics were used to maintain the anterior chamber.
- Capsulotomy was done by continuous curvilinear capsulorhexis in small incision cases and by can opener technique in ECCE. Nucleus delivery was done, and a thorough cortex wash was done. In the bag PCIOL was implanted. For ECCE surgery, limbal wound was closed by interrupted sutures with 10-0 Ethicon. Injection of 0.5 ml subconjunctival betamethasone was given to all patients.

Postoperative Treatment

All patients were put on topical antibiotic steroids, 5 times a day. In addition, patients who had anterior chamber reaction received injection of periocular steroids.

Follow up

Slit lamp examination was done for all patients, for first 3 post op days. Patients were asked to review every week for the first 4 weeks.

During the follow up, thorough examination was done to look for improvement in vision, any anterior chamber reaction, position of the IOL, fundus picture.

RESULTS

Sex	Incidence
Male	40
Female	20

Table 1. Sex Distribution

In our study, the incidence of post uveitic complicated cataract was more in males (66%)

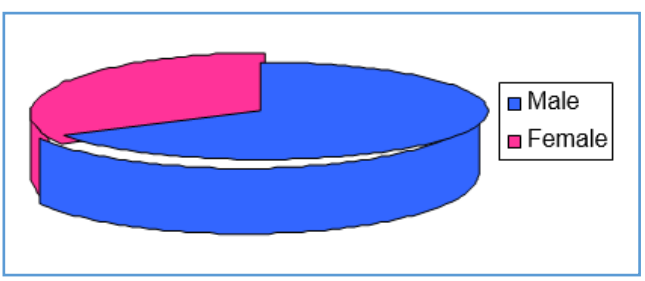


Figure 1. Sex Distribution

Age Group	Incidence	Percentage
1-10	-	
11-20	08	13.3
21- 30	10	16.6
31-40	18	30.0
41-50	08	13.3
51-60	14	23.3
61-70	06	10.0

Table 2. Age Distribution

20-60 yrs. were the commonly affected age group.

Type of Cataract	Incidence	Percentage
Posterior Subcapsular Cataract	20	33.3
Posterior Subcapsular with Cortical Involvement	34	56.6
Mature Cataract	06	10.0

Table 3. Types of Cataract

In this posterior subcapsular cataract with cortical involvement was the commonest variety of the complicated cataract, followed by pure posterior subcapsular type.

Surgery	No. of Patients	Percentage
SICS with PCIOL	52	86.6
Ecce with PCIOL	06	10
Phacoemulsification with PCIOL	02	3.33

Table 4. Types of Cataract Surgery

Of the 60 patients 52 patients underwent small incision cataract surgery, 6 patients had extra capsular cataract extraction and 2 patients had phaco-emulsification with posterior chamber intra ocular lens implantation.

Complications	Incidence	Percentage
Conjunctival Bleeding	24	40.0
Posterior Synechiae	36	60.0
Iris Bleeding	06	10.0
Posterior Capsule Rent	04	06.6
Iris pigment Dispersion	16	26.6
Zonular Dialysis	04	06.6

Table 5. Intra Operative Complications

The most common intra operative complication encountered was dense posterior synechiae and excessive conjunctival bleeding.

36/60 patients had dense posterior synechiae and poor pupillary dilatation, which was managed by synechiolysis, and viscodilatation. 4 patients required sphincterotomy.

Excessive bleeding from the conjunctiva was the next common intra operative complication and this was effectively managed by bipolar cautery.

The other complications that were encountered were pigment dispersion, iris bleeding, zonular dialysis, etc. 4/60 patients had posterior capsular rent, which occurred during nuclear rotation, due to dense posterior synechia.

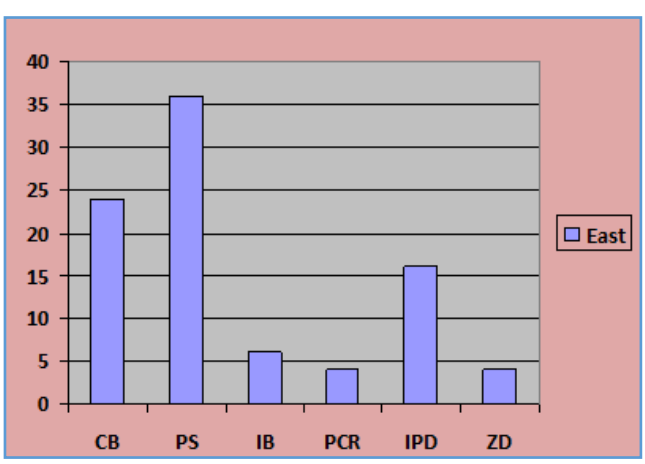


Figure 2. Intra Operative Complications

Complication	Incidence	Percentage
AC Reaction	22	36.6
Striate Keratitis	18	30.0
Hyphaema	04	06.6
Pigment over Lens	20	33.3
Pupillary Capture	04	06.6
Macular Oedema	16	26.6

Table 6. Early Post-Op Complications

Anterior chamber reaction ranging from mild iritis to severe uveitis was the most common early post op complication. This result was comparable to the study done by Harari and Sangwan Virender done at the L V Prasad eye institute, Hyderabad. In their study 23.9 % of patients had persistent uveitis in the post op period. The other early post op complications that were noted were pigment dispersion in 20 patients, striate keratitis in 18 patients and macular oedema in 16 patients.

Complication	Incidence	Percentage
PCO	20	33.3
CME	14	23.3
Pupillary Capture	04	06.6
Pupillary Membrane	06	10.0

Table 7. Late Post-Op Complications

The common complications that were noted 6 wks. post op were posterior capsular opacification and cystoid macular oedema. 20/60 patients had posterior capsular opacification, this result was comparable to the study done by Dana MR et al at the Massachusetts eye and ear infirmary, Boston. In their study 54 % of patients had visually significant posterior capsular opacification.

In another study done by Rahman and N P Jones –Royal eye hospital, Manchester UK, 96% of patients had visually significant posterior capsular opacification.

Patients with uveitis because of their underlying pathology and possibly due to younger age are at a higher risk of capsular opacification. Nd YAG laser capsulotomy is an effective method of treatment. Nd YAG laser capsulotomy is associated with vision threatening complications like cystoid macular oedema, retinal detachment, damage to intraocular lens and raised intra ocular pressure.

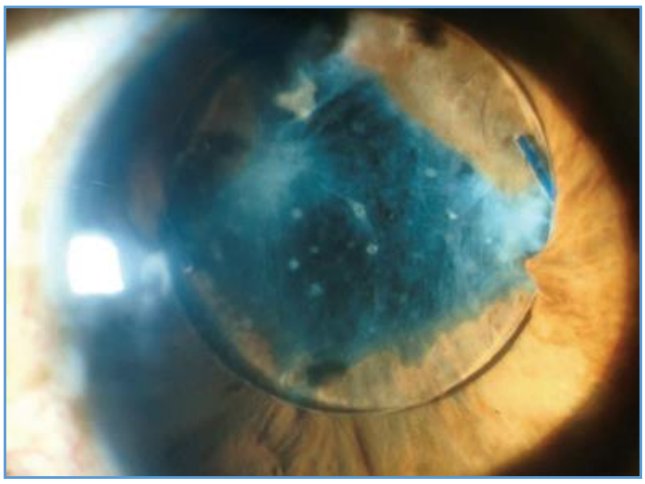
14/60 patients had persistent cystoid macular oedema. This was less compared to the study done by Ronald E Smith & Nicholas Kakaris who reported macular oedema in 7/10 patients.

In another study done by Harari, Sangwan Virender 20.9% patients had Cystoid macular oedema.

Macular oedema is usually a sequel of chronic intra ocular inflammation. Pars-plana vitrectomy has recently been utilized as a possible effective treatment modality for macular oedema. The possible mechanism of regression of macular oedema after pars-plana vitrectomy may be because of removal of inflammatory mediators from the vitreous gel.

The other late post op complications that were noted were pupillary capture of IOL that was seen in 04 patients, membrane in pupillary area in 06 patients.

Foster CS and Stavrou in their study have shown that for cases with cyclitic membrane or chronic low-grade inflammation not responding to treatment, removal of IOL has led to decrease in inflammation and improvement in vision in 14/19 eyes.



Picture 1. Pupillary Capture

Visual Acuity	Incidence	Percentage
6/36- 6/24	06	10.0
1/60-6/60	22	36.6
CFCF	02	3.33
HM	20	33.3
PL	10	16.6

Table 8. Preoperative Visual Acuity

The preoperative visual acuity ranged from 6/24-6/36 in 6 patients, 22 patients had visual acuity between 6/60 – 1/60, 20 patients had perception of hand movements, 10 patients had perception of light.

Vision	No. of Patients	Percentage
6/9-6/12	02	3.33
6/18-6/24	12	20.0
6/36-6/60	22	36.6
2/60-5/60	20	33.3
<2/60	04	06.6

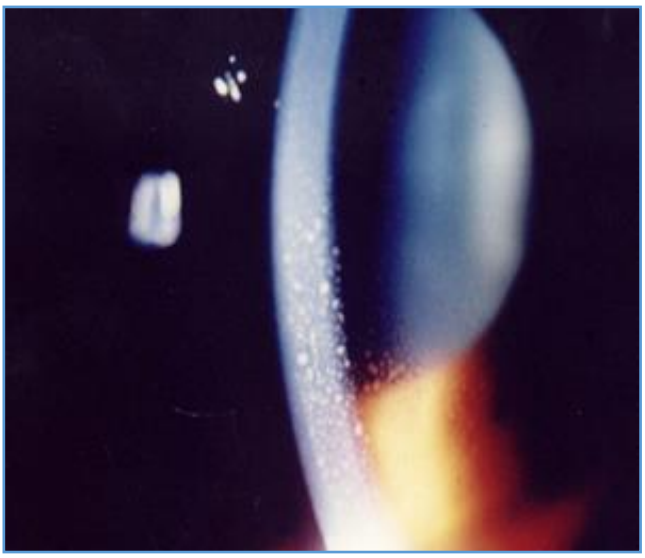
Table 9. Immediate Post Op Visual Acuity

In our study the immediate post op visual acuity recorded after 2 days, using the Snellen's chart, the vision ranged from 6/9 to 6/24 in 14 patients, 6/24 to 6/60 in 22 patients, 5/60 to 2/60 in 20 patients, less than 2/60 in 4 patients. The most common cause of decrease in vision in immediate post op period were anterior chamber reaction and pigment dispersion over the IOL.

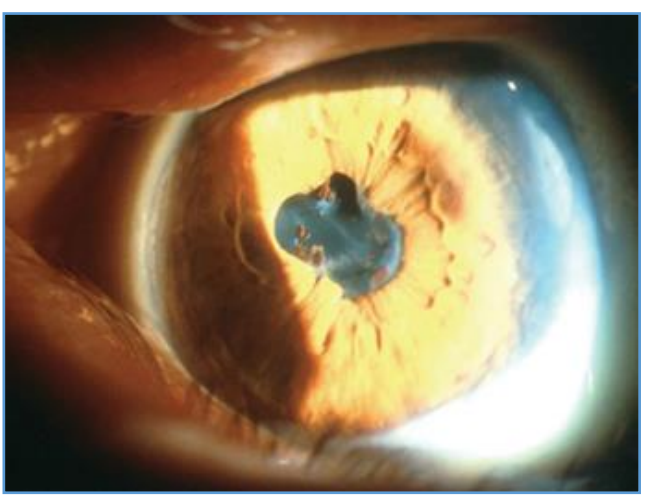
Vision	No. of Patients	Percentage
6/6-6/9	22	36.6
6/12- 6/18	12	20.0
6/24-6/36	18	30.0
6/60	08	13.3

Table 10. Visual Acuity at the End of 6 Wks.

The vision recorded at the end of 6 wks. ranged from 6/6 to 6/18 in 34 patients, 6/24 to 6/60 in 26 patients. The significant improvement in the visual acuity was due to aggressive management of post op inflammation. Those patients who had vision less than 6/24 had significant PCO and were treated with Nd YAG capsulotomy. This result was comparable to the study done by Dana MR et al who reported visually significant. PCO in 54 % of patients.



Picture 2. Keratic Precipitates



Picture 3. Festooned Pupil

DISCUSSION

A total of 60 patients were taken up for the study**.** In that, the incidence of uveitic complicated cataract was found to be more in Males. The commonly affected age group was between 20-60 yrs. 52 patients under went SICS with PCIOL, 6 patients had ECCE with PCIOL and 2 patients had phaco with PCIOL.

The intra operative complications that were encountered were dense posterior synechiae in 36 patients, excessive conjunctival bleeding in 24 patients. The immediate post op complications that were noted were anterior chamber reaction and pigment dispersion.

The most common late post op complications that were noted were posterior capsular opacification and cystoid macular oedema. The immediate post op visual acuity ranged from 6/9 to 6/24 in 14 patients, 6/24 to 6/60 in 22 patients, 5/60 to 2/60 in 20 patients, less than 2/60 in 4 patients.

The visual acuity after 6 wks. ranged from 6/6 to 6/18 in 17 patients 6/24 to 6/60 in 13 patients. The most common cause for decrease vision was posterior capsular opacification.

In our study, uveitis was well controlled at least 3 months prior to the surgery. After surgery 58/60 patients had an improvement in the visual acuity[5] Posterior synechiae was the most common intra op complication and persistent uveitis was the common cause for decrease in vision in the immediate post op period. This is similar to the study of Okhravi et al.[6] The post op inflammation was effectively managed by topical and periocular steroids. PCO was the commonest cause for decrease in visual acuity noted after 6 wks. This is comparable to the incidence reported by other authors.

SICS with PCIOL is a safe procedure in properly selected cases of uveitic cataract and can give a predictably good visual result.[7] Phaco with PCIOL is also safe and may be associated with less severe post op inflammation.[8] In all cases strict preoperative control for inflammation for a substantial period is essential to have a safe and quite post op period.

CONCLUSION

Cataract development is a very common occurrence in any form of anterior and intermediate uveitis, because of chronic intraocular inflammation, frequent relapses and long-term use of corticosteroids. The reported incidence of cataract in uveitic patients is about 50% in juvenile rheumatoid arthritis and upto 75% in chronic anterior uveitis.

The facts concerning these cataracts that make the therapeutic / surgical approach different from other forms of cataract are-

1. Cataract associated with uveitis usually develops at an early age, affecting children and young adults.
2. A higher incidence of sub capsular cataract leads to glare and near vision difficulties.
3. Preoperative anti-inflammatory regimen must be carefully planned for each individual patient.

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