



OUTCOME OF CATARACT SURGERY IN FUCHS HETEROCHROMIC UVEITIS

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ABSTRACT

Purpose- Fuchs heterochromic uveitis is a less common but important cause of complicated cataract in the younger population. Though cataract surgery carries good visual outcomes, almost similar to other cataracts, a thorough pre-operative evaluation is important to understand and manage some of the rare and specific intra and post-operative complications. We present a series of 27 patients of Fuchs heterochromic uveitis who presented with complicated cataract and were managed with small incision cataract surgery with posterior chamber intra ocular lens implantation.

Methods- A total of 27 patients were included in our study. All patients had a comprehensive ophthalmic evaluation and a diagnosis of Fuchs heterochromic uveitis was confirmed. After thorough pre-operative investigations all the patients underwent small incision cataract surgery with posterior chamber intra ocular lens implantation. The patients were followed up on day one, at one week and six weeks post operatively.

Results- In our study, 63% patients belonged to the age group of 21-30years. The classical intraoperative sign of Amsler was seen in 22%. Though 40% patients had some type of post-operative complication, the final visual acuity was better than 20/40 in 81.48% with adequate medical management.

Conclusion- Proper preoperative evaluation, a well executed cataract surgery and regular post-operative follow ups with early management of any post-operative complication improves the outcome of cataract surgery in patients of Fuchs heterochromic uveitis.

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INTRODUCTION

Fuchs' heterochromic iridocyclitis (FHI) or Fuchs' heterochromic uveitis is a chronic unilateral iridocyclitis (rarely bilateral), first described by world-renowned Austrian ophthalmologist Ernst Fuch in 1906. It manifests as a triad of 1) Heterochromia of iris 2) Increased risk of cataract and glaucoma 3) Keratic precipitates over corneal endothelium. Patients are often asymptomatic and disease is often discovered through investigation of the cause of the heterochromia. FHI can progress to chronic uveitis, cellular infiltration in the vitreous cavity and rarely retinal vasculitis. It contributes to about 1.2% to 4.5% of all uveitis. Pathogenesis is still under investigation, though vascular, infections like toxoplasma and herpes, immunological factors are supposed to play a role.

Clinical features include low grade anterior uveitis affecting young adults, 85% cases are unilateral. Iris heterochromia is characteristic with involved eye being lighter. Except in blue eyed people where involved eye is darker (Reverse Heterochromia), iris stromal atrophy, moth eaten appearance with transillumination of patchy segments, fine white, stellate keratic precipitates seen diffusely distributed over endothelium and mild to moderate vitritis. Gonioscopy can show fine new vessels bridging the angle. Absence of posterior synechiae, posterior uveitis, CME help in the diagnosis. Patients may present with diminished vision due to development of complicated cataract or with floaters due to mild vitritis.

Secondary cataract – due to low grade inflammation and is seen in about 80% of cases. Secondary glaucoma is the most sight threatening and challenging complication of FHI with prevalence ranging from 9- 59%. Cataract is most important cause of diminished vision in these patients.

Aim was to study the outcome of cataract surgery in patients with Fuchs heterochromic iridocyclitis with complicated cataract, figure iii. The main objective was to carefully pick up this rare entity which causes early cataract in the young and middle aged population, causing a significant social and financial burden in them. If these cases are properly evaluated and adequate care is taken, with a thorough knowledge about the uncommon complications seen in this group, the postoperative outcomes can be significantly improved. The low incidence, which warrants a careful evaluation to look for the subtle clinical signs; younger population of patients and significantly good visual outcomes with minimum need for costly investigations makes our study very significant in this era when cataract surgeries are being performed day in and day out at a high rate.

MATERIALS AND METHODS

This was a prospective case study carried out between November 2016 to June 2018 at a medical college hospital. Institute ethics committee approval was obtained before commencement of the study. Cataracts of unknown etiology

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and etiology other than FHI were excluded. Prior informed consent was taken from every patient. The sample size was 27(n) patients. All patients underwent comprehensive ophthalmic examination which included visual acuity by Snellens chart, slit lamp examination to confirm the diagnosis, fundus examination, applanation tonometry, gonioscopy and B-scan where required. Preoperative evaluation included lacrimal syringing, keratometry, A-scan biometry and systemic evaluation. Iol power was calculated using the SRK-T formula.

Manual small incision cataract surgery (SICS) with posterior chamber intraocular implantation (PCIOL) under local peribulbar anesthesia was performed in all the patients by the same experienced surgeon and the operative conditions remained same to enable better comparison. All the cases were managed postoperatively with the same regimen of topical medications which included steroids six times a day (Predforte eye drops, 1%predacetate suspension, Allergan), antibiotics qid (Vigamox eye drops, 0.3% moxifloxacin, Alcon) and mydriatics bid (Tropic eye drops, 0.5% tropicamide, Ophtho remedies). Steroids were continued for a period of six weeks during which they were gradually tapered before complete stoppage.

Follow up was done on first postoperative day, one week and six weeks wherein best corrected visual acuity (BCVA), slit lamp examination, fundus examination and complications if any, were noted. Postoperative complications which were observed during follow up, were managed accordingly. Intraocular pressure was monitored at every visit to look for any rise in it. Frequency of steroid eye drops was increased in cases with corneal oedema and flare up of uveitis. Oral acetazolamide 250mg bid was added for cases with raised intraocular pressure and cystoid macular oedema was managed with topical nepafenac 0.3% eye drops.

The WHO prevention of blindness program guidelines was used to grade postoperative visual acuity as good ($\geq 20/50$), borderline (20/200 to 20/50) and poor ($< 20/200$). Appropriate statistical tests were used to analyse the results.

Statistical analysis: A proforma was made to document pre, intra and postoperative findings. Mean calculations, percentage calculation, necessary bar and pie diagrams for easy understanding were made as and where required.

RESULTS

A total of twenty seven (n=27) patients were recruited for the study. The mean age of the study population was 27.4years, of which 56% (n=15) were males and 44% (n=12) were females. Majority of the cases were in the age group of 21 to 30 years (n=17, 63%). In our study, visual deterioration was found to be the presenting complaint in all the cases (n=27, 100%).

Bilateral involvement of FHI was found in 7.4% (n=2) whereas rest all had only unilateral manifestation. Pre-operative evaluation highlighted other associated findings like vitreous opacities in 40.7% (n= 11) and posterior vitreous detachment (PVD) in 22.2% (n=6) which were picked up on B-scan. Gonioscopy revealed presence of angle anomaly in 14.8% (n=4).

The classical sign of Amsler, that is intraoperative hyphema was noticed during paracentesis in 22% (n=6) patients while the rest did not have any intraoperative complication. The postoperative period from day one to six weeks was uneventful in the majority i.e, 60% cases. The rest 40% had either of the

following complications as depicted by the following pie diagram, figure i. All the postoperative complications were adequately managed by medical treatment and none required any surgical intervention.

In our study, by the end of six weeks 81.48% (n=22) patients had a postoperative BCVA of $\geq 20/50$ which was classified as a good visual outcome. Only one patient had BCVA of $< 20/200$, which could be contributed to a central corneal opacity, as a result of resolved corneal oedema. Whereas four patients had a borderline BCVA of 20/200 to 20/50. Visual prognosis during the six weeks follow up gave the following picture (figure ii)

DISCUSSION

1. Age at presentation

- ✓ In our study on FHI, 63% of the cases were in the age group of 21-30yrs.
- ✓ In a clinical study by Sangwan VS, Murthy S, Tejwani S done at LVPEI³ the mean age group was 31.36yrs
- ✓ In a study done at Iran²² the mean age at presentation was 35yrs.

2. Gender distribution

- ✓ We observed that the incidence of FHI was 56% in males in our study.
- ✓ The incidence was 51% in the study done at LVPEI³ by Sangwan VS and Co.
- ✓ In another study done at Iran²² the incidence was found to be 60% in males.

3. Presenting complaint

- ✓ In a case study at University of Leicester, England¹² visual deterioration was the most common presenting complaint accounting for 96.1% cases while in our study it was the presenting complaint in all the cases (100%).
- ✓ Similar observation was made by a case study done in 26 FHI cases at Spain⁶.

4. Incidence of bilaterality

- ✓ 15.6% of the cases had bilateral involvement in the clinical study at England¹² by Fearnley IR and Rosenthal AR.
- ✓ In our study incidence of bilaterality was 7.4%.

Preoperative findings

- ✓ Preoperative evaluation showed vitreal disorders in 40.7% of the patients in our study.
- ✓ In a study done at Amiens¹⁹, vitreal disorders were noted in 45.5% of the cases.
- ✓ Our study showed the presence of PVD in 22.2% of the patients.
- ✓ 14.8% of cases had angle anomalies on preoperative gonioscopic evaluation.
- ✓ Presence of preoperative raised iop was not seen in any case in our study while it was seen in 4.9% of the patients in the study by Sangwan VS³.

Intra operative complications

Intra operative hyphema at the time of paracentesis also known as Amslers sign was seen in 22% of the patients in our study. Though the mechanism is not clearly understood it can be attributed to be due the sudden decompression which occurs with paracentesis and makes the fragile new vessels to bleed.

In a study done at Germany¹⁴, the incidence of intra operative hyphema was 25%. This complication had a value of n=4 in a clinical study by Ram J, Jain S, Pandav SS at PGI, Chandigarh¹¹.

In our study, none of the cases had PC rupture compared to a study done at Greece²⁸ in which this complication occurred in 12.5% of the cases.

Postoperative complications

- ✓ In our study, CME occurred in one case which resolved by one week. Similar observation was made in the clinical study at PGI11 and the study at Iran22.
- ✓ Postoperative raised iop was seen in 11% of the patients in our study, which was managed with oral antiglaucoma medication.
- ✓ In a study at Greece²⁸ 29% of the patients had raised iop post operatively.
- ✓ In the study done at LVPEI³, this complication occurred in 2.9% of the patients.
- ✓ In our study there was no significant increase in the amount of KP's post operatively as observed by the study by a group of foreign ophthalmologists²³.
- ✓ Flare up of uveitis was noticed in 11% of cases in our study. In the study done at Iran²² this complication was observed in 10%.

Visual outcome

The table below gives a comparison in the visual outcome of cataract surgery in FHI cases in different case studies.

Various studies	% of patients with BCVA≥20/40
Our study	81.48%
PGI,Chandigarh ¹¹	82.8%
Sangwan VS&Co,LVPEI ³	91.5%
France ¹⁸	76.6%
Germany ¹⁴	90.5%
Amiens ⁹	81.6%

CONCLUSION

Based on our study we would like to conclude that cataract surgery in patients with FHI is only slightly more difficult than in patients with senile cataract. However efforts should be made to minimise postoperative uveitis. Visual outcome is often slightly compromised due to persistent vitreous opacities. Iol implantation does not appear to be associated with increased risk and should be considered in all patients with FHI.

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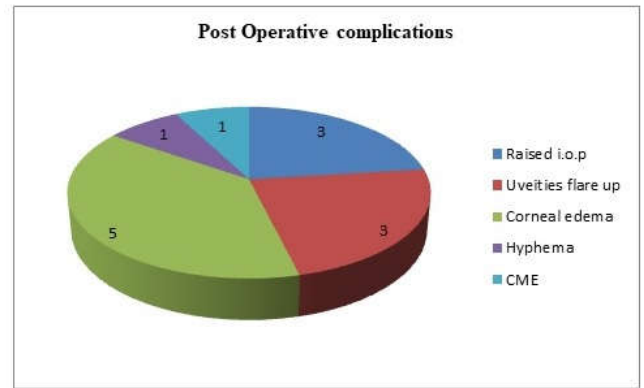


Figure I

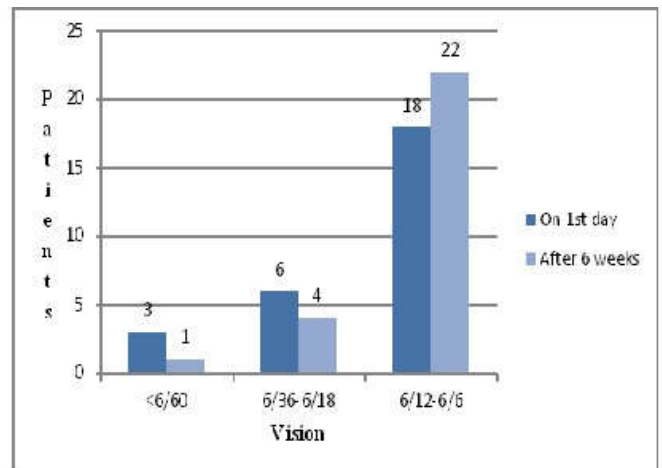
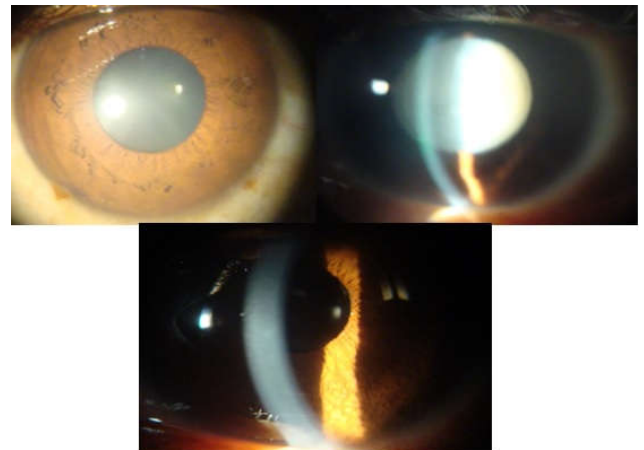


Figure II



LEFT EYE POST-OP

Figure III

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