A COMPARATIVE STUDY OF VISUAL OUTCOME AND COMPLICATIONS OF IN-THE-BAG INTRAOCULAR LENS AND IN-THE-SULCUS INTRAOCULAR LENS

Rasikpriya Sandhu¹, Daya Chand Gupta²

¹Resident, Department of Ophthalmology, Mahatma Gandhi Medical College & Hospital, Jaipur.
²Professor, Department of Ophthalmology, Mahatma Gandhi Medical College & Hospital, Jaipur.

ABSTRACT

BACKGROUND
The aim of this study is to compare the effect of site of implantation of posterior chamber intraocular lens (PC IOL), i.e., in-the-bag IOL and in-the-sulcus IOL on the basis of visual outcome and complications.

MATERIALS AND METHODS
This was a prospective comparative study of 100 patients who underwent SICS with IOL implantation. Patients were randomised by chit box method and divided into 2 groups according to placement of IOL, i.e., Group A (IOL In-the-bag) and Group B (IOL In-the-sulcus). Post-operative examination of the patients was done on 1st day, 7th day, 1st month, 3rd month and 6th months with regard to Visual acuity, Anterior segment evaluation on slit lamp and Posterior segment examination.

RESULTS
In both groups, majority of patients were in the age group of 50-60 years. The male female ratio was 54:46 in both groups. Pre-operatively, in Group A, 76% patients had vision 6/24-6/60. Whereas, in Group B, 56% patients had vision 6/24-6/60. In Group A, at 6 months followup, 76% patients had best corrected visual acuity (BCVA) 6/6. No patients had flare, 20% had pigments and 96% had no corneal oedema. In Group B, at 6 months followup, 56% patients had BCVA 6/6. None of the patients had flare, 36% had pigments and 98% had no corneal oedema. However, 2% patients had moderate corneal oedema.

CONCLUSION
The current study shows that a higher number of patients achieved a BCVA of 6/6 with in-the-bag IOL. The incidence of post-operative complications is more with in-the-sulcus IOL implantation as compared to in-the-bag IOL.

KEYWORDS
Small Incision Cataract Surgery, In-the-bag, In-the-sulcus.


BACKGROUND
Charles Kelman introduced the world to small incision cataract surgery.¹

The first innovative idea to advance the safety of phacoemulsification was to develop a new technique of capsulotomy. The technique of continuous curvilinear capsulorhexis (CCC) allows placement of IOL in the natural anatomical position.² This technique produces a strong capsular rim that resists tearing even when stretched during lens material removal or lens implantation.

Early results of posterior chamber intraocular lens (PC IOL) implantation in the ciliary sulcus appeared better in comparison to iris supported and anterior chamber (AC) lenses. However, the long-term followup complications began to appear mainly because of contact between the posterior surface of the iris and the ciliary body, e.g., corneal oedema, pupillary capture, decentration, iris chaffing, posterior synechiae and posterior capsular opacification (PCO).³

However, in beginner’s hand during surgical complications like positive vitreous pressure or posterior capsule rent (PCR), IOL can be easily implanted in-the-sulcus.

Aims and Objectives
To compare the post-operative visual outcome and complications after SICS surgery between the two groups-
A) 10L in-the-bag
B) IOL in-the-sulcus.

MATERIALS AND METHODS
This study was conducted at Department of Ophthalmology, Mahatma Gandhi Medical College and Hospital, Jaipur. It is an observational comparative prospective study on 100 eyes of 100 patients aged 50 years or above with senile cataract who underwent manual small incision cataract surgery (SICS) with Intra-ocular lens (IOL) implantation.

Inclusion Criteria were patients undergoing manual SICS with a PC10L implantation, age group between 50 to 70 years and patients with senile cataract up to Grade 3 nuclear scleros.

Exclusion criteria were hard brown cataract, cataracts other than senile cataract, patients with intraoperative and...
post-operative complications, systemic diseases and corneal pathology.

Patients were randomly divided into two groups by chit box method (simple randomisation) according to placement of IOL, i.e, Group A: IOL In-the-bag and Group B: IOL In-the-sulcus. Post-operative examination of the patients was done on 1st day, 7th day, 1st month, 3rd month and 6th months with regard to Visual acuity, Anterior segment evaluation on slit lamp and Posterior segment examination.

Statistical analysis was performed using SPSS software (version 23.0). Difference between the two groups were evaluated using chi-square test.

RESULTS
In both groups, majority of patients were in the age group of 50-60 years. The male female ratio was 54:46 in both groups.

Pre-operatively, in Group A, 76% patients had vision 6/24-6/60; whereas, in Group B, 56% patients had vision 6/24-6/60 (Table 1). In Group A, at 6 months followup, 76% patients had best corrected visual acuity (BCVA) 6/6 (Table 2). No patients had flare (Table 3), 20% had pigments (Table 4) and 96% had no corneal oedema (Table 5). In Group B, at 6 months followup, 56% patients had BCVA 6/6 (Table 2). None of the patients had flare (Table 3), 36% had pigments (Table 4) and 98% had no corneal oedema (Table 5). However, 2% patients had moderate corneal oedema (Table 5).

At 6 months followup, for vision 6/6 chi-square value was 1.471 and p value is 0.0348 (Significant).

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Table 3. Distribution of Cases According to Post-Operative Pigments

POD = Post-operative day.
POM = Post-operative Month.
All the above-mentioned factors influence the final post-operative VA and the account for the associated complications of in-the-sulcus IOL.

CONCLUSION
The current study shows that a higher number of patients achieved a BCVA of 6/6 with in-the-bag IOL. The incidence of post-operative complications is more with in-the-sulcus IOL implantation as compared to in-the-bag IOL.

REFERENCES
