

## Original Research

### Manual small incision cataract surgery in cataract patients- A clinical study

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#### ABSTRACT:

**Background:** Cataract surgery audit is recommended for assessing the quality of cataract services. Visual acuity (VA) following surgery is one of the key indicators for evaluating the quality of surgery. The present study was conducted to assess outcome of MSICS in adults. **Materials & Methods:** 104 patients of cataract of both genders were included. Best-corrected visual acuity (BCVA), and ocular examination details were recorded. **Results:** Out of 104 patients, males were 50 and females were 54. Intraoperative complications were hyphema in 2, iris prolapse in 1, and intraoperative miosis in 4 and iridodialysis in 3 cases. The post-operative complications were corneal edema in 1, retained cortical method in 2, uveitis in 4 and hypotony in 1 case. The difference was significant ( $P < 0.05$ ). **Conclusion:** Manual small incision cataract surgery for patients of cataract exhibited less complications and improved life quality.

**Key words:** Blind, Manual small incision cataract surgery, Outcome

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#### CASE REPORT

Cataract remains a major cause of preventable blindness, and the World Health Organization report estimates that approximately 20 million people are bilaterally blind from senile cataract.<sup>1</sup> Manual small incision cataract surgery (MSICS) has emerged as the cost-effective technique for cataract surgery when compared with extracapsular cataract extraction (ECCE) and phacoemulsification. There have been many studies on various aspects of MSICS, but most of them are dedicated to surgically induced astigmatism (SIA) and visual outcome.<sup>2</sup>

Cataract surgery audit is recommended for assessing the quality of cataract services. Visual acuity (VA) following surgery is one of the key indicators for evaluating the quality of surgery. At least 85% of the operated eyes should have VA  $\geq 6/18$  after cataract surgery and less than 5% should have BCVA.<sup>3</sup>

The assumption behind medical interventions for non-life-threatening conditions, such as cataract surgery, is that it brings improvements to the quality of life (QoL)

of the patient.<sup>4</sup> However, the degree to which this occurs is not captured by clinical measures that are typically used to assess outcome from interventions such as cataract surgery. Patient reported outcome measures, such as health related quality of life (HRQoL) instruments can be used alongside clinical evaluation to provide a more comprehensive outcome assessment.<sup>5</sup> The present study was conducted to assess outcome of MSICS in adults.

#### MATERIALS & METHODS

The present study was conducted among 104 patients of cataract of both genders in the department of Ophthalmology. All were well informed regarding the study and written consent was obtained. Ethical approval was obtained before starting the study.

Data such as name, age, gender etc. was recorded. Best-corrected visual acuity (BCVA), and ocular examination details were recorded. Nucleus grading was done based on the scattering of light seen on slit lamp as Grade 1: pale yellow; Grade 2: yellow; Grade

3: amber; Grade 4: brown-black. Cataract surgery was done in routine steps. External tunnel incision varied from 6 to 7.5 mm, depending on the surgeon's preference and the grade of nucleus. Routine follow-up time was performed in all cases. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

**RESULTS**

Table I, graph I shows that out of 104 patients, males were 50 and females were 54. Table II, graph II shows that intraoperative complications were hyphema in 2, iris prolapse in 1, intraoperative miosis in 4 and iridodialysis in 3 cases. The difference was significant (P< 0.05). Table III shows that post-operative complications were corneal oedema in 1, retained cortical matter in 2, uveitis in 4 and hypotony in 1 case. The difference was significant (P< 0.05).

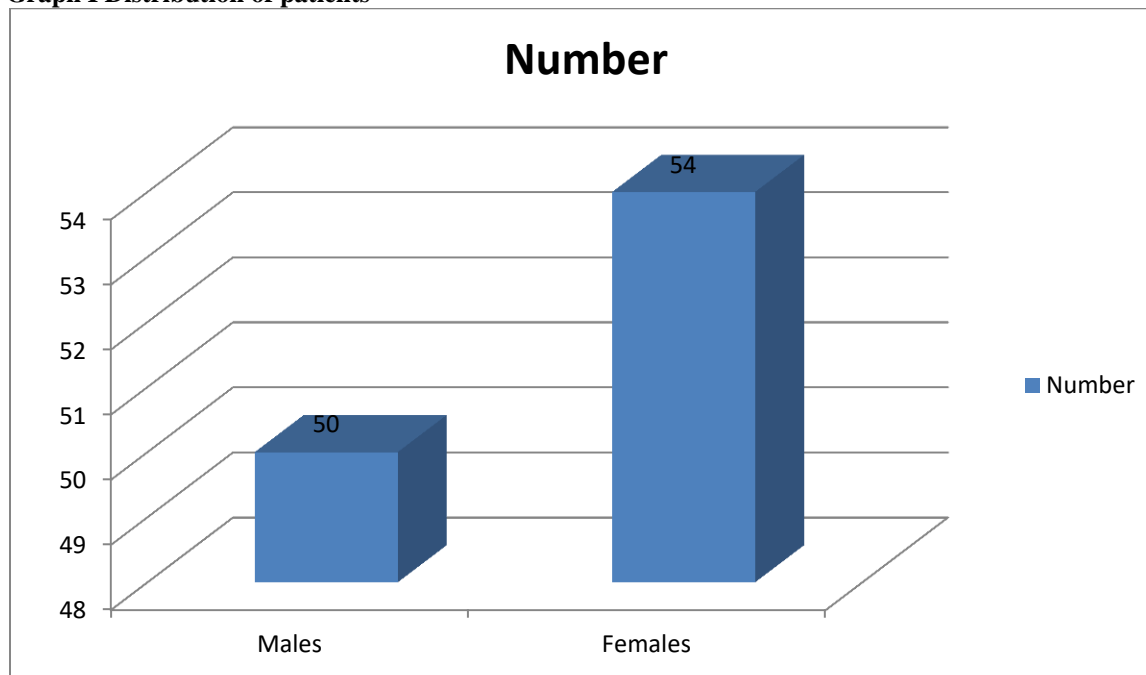
**DISCUSSION**

Different factors may influence the impact cataract surgery has on the patient including post-operative VA, unilateral or bilateral surgery and sociodemographic characteristics.<sup>6</sup> Identifying these may help guide policy decisions about where and how to allocate limited resources to improve services. This has been relatively unexplored in the poorest parts of the world where the populations most commonly affected by blindness from cataract reside.<sup>7</sup>

**Table I Distribution of patients**

Total- 104		
Gender	Males	Females
Number	50	54

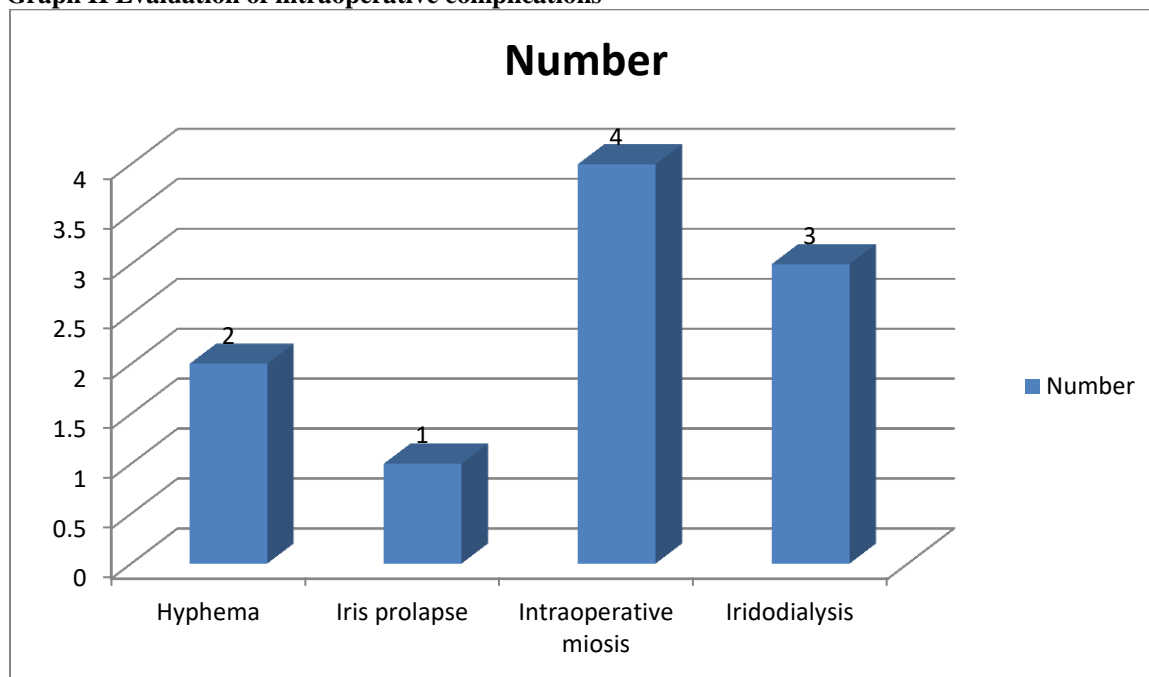
**Graph I Distribution of patients**



**Table II Evaluation of intraoperative complications**

Intraoperative complications	Number	P value
Hyphema	2	0.031
Iris prolapse	1	
Intraoperative miosis	4	
Iridodialysis	3	

**Graph II Evaluation of intraoperative complications**



**Table III Evaluation of post-operative complications**

Post-operative complications	Number	P value
Corneal oedema	1	0.041
Retained cortical matter	2	
Uveitis	4	
Hypotony	1	

In the last few decades, small incision cataract surgeries (SICS) have improved the quality of cataract service and reduced the cost. By adopting such modern techniques, one can reduce the size of the incision, reduce intraocular manipulation, and avoid sutures, thus reducing the insult to the ocular tissue. Patients recover quickly and the risk of late complications is lower.<sup>8</sup> Systematic review has shown benefits of SICS and phacoemulsification procedures. Due to easy procedures and fast recovery, patients often become less stringent in abiding with follow-up schedules (1 day, 1 week, and 6 weeks). As the surgical wound is healed and the refractive status is stabilized, spectacles for distant and near work are prescribed at 6-week follow-up.<sup>9</sup> The present study was conducted to assess outcome of MSICS in adults.

In present study, out of 104 patients, males were 50 and females were 54. Sharma et al<sup>10</sup> evaluated various methods of nucleus delivery in manual small incision cataract surgery. 5 groups of 40 cases each were constituted, with reference to nucleus delivery technique: (a) phacosandwich, (b) fishhook, (c) irrigating vectis, (d) viscoexpression, and (e) anterior

chamber maintainer (ACM). Visual outcome, intraoperative, and postoperative complications were evaluated. Follow-up was done on first and seventh postoperative days (PODs) and then at fourth and eighth postoperative weeks. The most common intraoperative complication was intraoperative miosis, followed by intraoperative hyphema, seen more in phacosandwich and irrigating vectis groups. The most common postoperative complication was striate keratopathy followed by transient postoperative corneal edema and AC inflammatory response, seen more in phacosandwich and fishhook groups. With reference to visual acuity, on the first POD 95% cases of ACM group achieved visual acuity >+0.5 logMAR unit. The difference in the visual outcome among groups was statistically significant. On fourth and eighth postoperative weeks, best-corrected visual acuity among various groups was comparable.

We found that intraoperative complications were hyphema in 2, iris prolapse in 1, intraoperative miosis in 4 and iridodialysis in 3 cases. Khandekar et al<sup>11</sup> in their study the BCVA before and 1 day and 6 weeks after surgery were noted. Factors associated with BCVA at 1-day and 6-week follow-up were identified.

Six weeks after surgery, 12,522 (87%) and 1473 (10.2%) patients had BCVA  $\geq 6/18$  and  $6/24-6/60$ , respectively. Vision improved between 2 follow-ups in 6695 eyes, remained the same in 7117 eyes (49.4%), and deteriorated in 544 (3.8%) eyes. BCVA at 6 weeks was negatively associated with blindness (VA).

Polack et al<sup>12</sup> found that the response rate for MSICS at follow up was 84% for operated cases and 80% for controls. At baseline, cases had significantly poorer VRQoL scores, were more likely to report problems with the EuroQol 5D five descriptive (EQ-5D) domains (mobility, daily activities, self-care, pain, depression/anxiety) and had significantly poorer self-rated health compared to controls. At follow up VRQoL scores of operated cases improved significantly to approximately equal those of controls. Effect sizes were large ( $> 0.8$ ) regardless of pre-operative VA. Poor outcome from surgery (VA  $< 6/60$ ) was associated with smaller VRQoL gains. Among operated cases frequency of reported problems with all the EQ-5D reduced significantly and in mobility, daily activities and self-care. Self-rated health scores increased significantly in each country. HRQoL of controls remained stable from baseline to follow up.

The shortcoming of the study is small sample size.

## CONCLUSION

Author found that manual small incision cataract surgery for patients of cataract exhibited less complications and improved life quality.

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