

Original Research Article

## Evaluation of Intra Operative Complications of Manual Small Incision Cataract Surgery in Residents of Mysore

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### ABSTRACT

**Background:** Small incision cataract surgery is the most commonly performed surgery for cataract in developing countries like India. It's a safe and effective to increase the output of cataract surgical services, at the same time affordable.

**Objectives:** To study the intra operative complications of manual small incision cataract surgery in residents.

**Materials and methods:** After obtaining ethical clearance, a total of 200 subjects who consented to participate in the study were enrolled from December 2008-May 2010. Intra operative complications of small incision cataract surgery were studied in these subjects.

**Results:** Intra operative complications were posterior capsule rent in 5 (2.5%), iris prolapsed/dialysis 5 (2.5%), Incision and tunnel related complications 2 (1%), zonular dialysis 3 (1.5%), Descemet's detachment 2 (1%), capsule related complications 4 (2%), other 2 (1%) of cases.

**Conclusions:** This study showed that overall complication of small incision cataract surgery is less and the procedure is well suited for our country, where there is large number of backlog of cases and also it is cost effective.

**Key words:** Small incision cataract surgery, intra operative complications

### INTRODUCTION

The lens is an important contributor to the refractive power of the eye cornea being the first. The most important disease affecting the lens is cataract and its definitive treatment is surgery. Cataract extraction is the most frequently performed surgery in patients over 65 years of age. Advances in operative equipment and micro surgical instruments have made surgery very

safe and effective in restoring vision. [1]

Despite 10 – 12 million cataract surgeries performed globally every year, there is significant backlog of cataract cases. An estimated 4 million people become blind because of cataract every day, which is added to a backlog of 10 million operable cataracts in India, whereas only 5 million cataract surgeries are performed annually in the country. [2,3] An effective method

undertaken to increase the output of cataract surgical services in developing countries, making cataract surgery affordable to all people is the manual small incision cataract surgery. Though surgery is now safe and successful in the large majority of patients it is not without problems and potential complications. Thus there is a need of this study to evaluate the intra operative complications of manual small incision cataract in residents.

## MATERIALS AND METHODS

**Ethical statement:** Ethical clearance was obtained prior to the study.

**Study center:** Department of Ophthalmology, K.R Hospital Mysore.

**Study period:** December 2008 – May 2010

**Study subjects:**

**Inclusion criteria:** Patients with visually significant cataract requiring surgery

**Exclusion criteria:**

Pediatric cataract, traumatic cataract, complicated cataracts and cataract co existing with other ocular disease were excluded from the study.

**Methods:**

On the day of admission thorough pre operative evaluation was done. Slit lamp biomicroscopy (Zeiss) of anterior segment with emphasis on type of cataract and grading of nucleus was done using Lens Opacity Classification systems (LOCS). A standard pre operative investigation of tonometry, fundus examination after papillary dilatation performed. Dense cataract preventing fundus examination B-Scan was done.

On the previous day of surgery patient was advised antibiotic drops. Cataract surgery was done under peribulbar anaesthesia. Surgery was done under operating microscope TAKAGI OM 10 ZOOM and TAKAGI OM10.

## RESULTS

Out of 200 cases, patients in the 61 to 70 years age group were maximum accounting for 78 cases. 39 patients were above 70 years. Males constituted the majority, 111 (55.5%) as compared to females.

In study subjects, posterior subcapsular cataract was the common type of cataract associated with 85 persons (42.5%).

Out of the 200 eyes intra operative complications were seen in 23 cases. The most common complication was PC tear with vitreous loss in 5 (2.5%) case and iris prolapse/iridodialysis in 5 (2.5%) cases. Capsule related complications was seen in 4 (2%) cases.

Hypermature and nuclear cataracts were associated with higher rate of intraoperative complications which were statistically significant.

The present study, cataract was posterior subcapsular type in 85 (42.5%), mature cataract 46 (23%), cortical 43 (21.5%), nuclear cataract 15 (7.5%), hypermature in 10 (5%), posterior polar 1 (0.5%) of cases.

Table 1: Age distribution among cases

Age group (years)	Male	Female	Total
40 - 50	15	12	27
51 - 60	28	28	56
61 - 70	42	36	78
>70	26	13	39

Table 2: Type of cataract

Type of cataract	Number	Percentages (%)
Mature	46	23
Hyper mature	10	5
PSC	85	42.5
Cortical	43	21.5
Nuclear	15	7.5
Posterior polar	1	0.5

Table 3: Intra operative complications

Intra operative complications	Number	Percentages (%)
PC tear	5	2.5
Iris prolapsed	5	2.5
Capsule related	4	2
Zonular dialysis	3	1.5
Tunnel complications	2	1
Descemet's detachment	2	1
Others	2	1.5
Total	23	11.5

Table 4: Association of type of cataract and intra operative complications

Cataract	Complications						
	PC tear	Iris prolapse	Zonular	Tunnel	Capsule related	Descemet's detachment	Others
Mature	0	0	0	0	3	0	0
Hyper mature	3	0	3	0	1	0	0
PSC	1	1	0	1	0	2	0
Cortical	0	0	0	1	0	0	0
Nuclear	1	4	0	0	0	0	2
Posterior polar	0	0	0	0	0	0	0

## DISCUSSION

In this study, 200 cases of small incision cataract surgery were studied for intra operative complications. Out of 200 cases, most of the patients were in the age group 61-70 years. Males constituted the majority, 111 (55.5%) as compared to females. In our study, cataract was posterior subcapsular type in 85 (42.5%), mature cataract 46 (23%), cortical 43 (21.5%), nuclear cataract 15 (7.5%), hypermature in 10 (5%), posterior polar 1 (0.5%) of cases.

Intra operative complications were posterior capsule rent in 5 (2.5%), iris prolapsed/dialysis 5 (2.5%), Incision and tunnel related complications 2 (1%), zonular dialysis 3 (1.5%), Descemet's detachment 2 (1%), capsule related complications 4 (2%), other 2 (1%) of cases.

In this study intra operative complications occurred in 11.5% cases, which is in concordance with Chirambo M C et al, Yorston D et al. [4,5]

Posterior capsule rent was seen in 5 (2.5%) cases. Posterior capsule rupture occurred most commonly due to extension of rhexis or during irrigation aspiration. This study is in agreement with Gogate PM. [6] who had reported increased incidence of PC rent in hypermature and hard cataract.

Iris prolapse occurred mostly during delivery of the nucleus and was seen in 5 (2.5%) of cases. Balmer A [7] reported iris prolapse in 0.5% of cases; Shroeder B [8] reported iris dialysis in 0.7% of cases. Kongsap P [9] in his study reported that iris prolapse was the most common intra operative complication, seen in 7.37% of cases.

Zonular dialysis was seen in 3 (1.5%) cases. All three cases of Zonular dialysis occurred in hypermature type of cataract. This was in agreement with Lumme P et al [10] who found 6.6% of zonular dialysis.

Tunnel related complication occurred in 2 (1%) cases. This was supported by Schroeder et al who reported tunnel complications in 1.5% of cases. [8]

Descemet's detachment was seen in 2 (1%) cases in the present study. Schroeder reported Descemet's detachment in 0.7% of cases. Capsule related complications were seen in 4 (2%) cases, 3 cases had rhexis runoff and one had small rhexis. Kongsap P [9] reported capsule related complications in 2.11% cases. Our study matches well with the above study.

Other complication included hyphaema which was seen in 2 (1%) cases in our study. Lumme P [10] reported hyphaema in 8.6%, Kongsap P [9] reported hyphaema in 2.11%. Hyphaema was seen after extension of wound for delivery of hard nucleus.

## CONCLUSION

Despite the modern technology has done to advance the treatment of cataracts, the greatest challenge in our field continues to be large and increasing backlog of cataract blindness in developing countries. Manual small incision cataract surgery with its low complication rate has now come to be established surgical procedure for cataract surgery.

Although Manual Small Incision Cataract Surgery demands skill and practice

from the cataract surgeon, it is a safe, effective, and economical alternative to competing techniques. Prospective standardized monitoring of cataract surgical outcomes with regular analysis of the causes of poor outcome is an important tool, which individual ophthalmic surgical teams can use to improve the results of their cataract surgery. The emphasis should be on continuous internal audit over time in order to improve results, rather than on inappropriate comparison of results between centers or surgeons.

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