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Evaluation of Complications and Postoperative Visual Outcomes of Cataract Surgery: An Institutional Based Study

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ABSTRACT

Background: Most cataracts arise because of ageing of the crystalline lens. Surgery is currently the only treatment option once the lens has opacified and vision is decreasing. Hence; the present study was conducted for evaluating complications and postoperative visual outcomes of cataract surgery.

Materials & Methods: A total of 100 patients scheduled to undergo cataract surgery were enrolled. Complete demographic and clinical details of all the patients were obtained. The etiology of the cataract, whether it was primary or secondary due to factors such as trauma or steroid use, was documented. All ocular comorbidities were meticulously noted. Additionally, systemic comorbidities, including systemic hypertension, diabetes mellitus, and respiratory conditions, were also recorded. The duration of the surgical procedure was analyzed independently. Postoperative complications were systematically documented. Best corrected visual acuity was assessed by hospital optometrists at 12 weeks following the surgery and the results were recorded.

Results: Mean age of the patients was 40.8 years. 55 percent of the patients were males. Positive history of past ocular surgery was seen in 11 percent of the patients. Right eye was operated in 54 percent of the patients. Photo emulsification, Extracapsular cataract extraction (ECCE) and Intracapsular cataract extraction (ICCE) were done in 63 percent, 33 percent and 4 percent of the patients respectively. Complications were seen in 13 percent of the patients

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which comprised of corneal edema, wound dehiscence and raised intraocular pressure. Visual outcome was good in 69 percent of the patients.

Conclusion: Cataract surgery has progressed from the technique of intracapsular cataract extraction (ICCE) to extracapsular cataract extraction (ECCE) and has now advanced to the method of phacoemulsification. Good outcome with fewer complications were seen.

Key words: Cataract, Visual, Surgery.

INTRODUCTION

Most cataracts arise because of ageing of the crystalline lens. As new lens fibres continue to be laid down in the crystalline lens, and existing ones are not replaced, the lens is unusual in being one of the few structures of the body that continues to grow during life. The transparency of the lens is maintained by many interdependent factors that are responsible for its optical homogeneity, including its microscopic structure and chemical constituents. With ageing, there is a gradual accumulation of yellow-brown pigment within the lens, which reduces light transmission. There are also structural changes to the lens fibres, which result in disruption of the regular architecture and arrangement of the fibres that are necessary to maintain optical clarity.[1-3] The effectiveness of cataract surgery is significantly influenced by two clinical factors: the quality of vision achieved and the timing of rehabilitation. Recent advancements in surgical methodologies, tools, and pharmacological treatments have transformed this area of medicine, rendering cataract surgery nearly devoid of risk. Among the most notable developments in the 20th century is the introduction of phacoemulsification, a technique pioneered by Kelman in 1967.[4,5] Surgery is currently the only treatment option once the lens has opacified and vision is decreasing. The indication for surgery is based on whether the patient's reduced visual function interferes with their quality of life.[6] Hence; the present study was conducted for evaluating complications and postoperative visual outcomes of cataract surgery

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MATERIALS & METHODS The present study was conducted for evaluating complications and postoperative visual outcomes of cataract surgery. A total of 100 patients scheduled to undergo cataract surgery were enrolled. Complete demographic and clinical details of all the patients were obtained. The etiology of the cataract, whether it was primary or secondary due to factors such as trauma or steroid use, was documented. All ocular comorbidities were meticulously noted. Additionally, systemic comorbidities, including systemic hypertension, diabetes mellitus, and respiratory conditions, were also recorded. The duration of the surgical procedure was analyzed independently. Postoperative complications were systematically documented. Best corrected visual acuity was assessed by hospital optometrists at 12 weeks following the surgery and the results were recorded. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software.

Table 1: Demographic and clinical data

Variable		**Number**	**Percentage**
Mean age	40.8 years		
Gender	**Males**	55	55
	Females	45	45
History of past ocular surgery	**Yes**	11	11
	No	89	89
Ocular comorbidity	**Yes**	9	9
	No	91	91
Systemic comorbidity	**Yes**	22	22
	No	78	78
Cause of cataract	**Primary**	97	97
	Secondary	3	3
Operated eye	**Left**	54	54
	Right	46	46

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Table 2: Cataract surgery

Variable		Number	Percentage
Type of surgery	Photoemulsification	63	63
	ECCE	33	33
	ICCE	4	4
Duration of surgery (mins)	Less than 30	33	33
	30 to 60	47	47
	More than 60	20	20

Table 3: Incidence of postoperative complications

Complications	Number	Percentage
Corneal edema	6	6
Wound dehiscence	5	5
Raised intraocular pressure	2	2
None	87	87
Total	100	100

Table 4: Visual outcome

Visual outcome	Number	Percentage
Good	69	69
Impaired	12	12
Poor	19	19
Total	100	100

RESULTS

The mean age of the patients was 40.8 years. 55 percent of the patients were males. Positive history of past ocular surgery was seen in 11 percent of the

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patients.Right eye was operated in 54 percent of the patients. Photo emulsification, Extracapsular cataract extraction (ECCE) and Intracapsular cataract extraction (ICCE) was done in 63 percent, 33 percent and 4 percent of the patients respectively. Complications were seen in 13 percent of the patients which comprised of corneal edema, wound dehiscence and raised intraocular pressure. Visual outcome was good in 69 percent of the patients.

DISCUSSION

Cataract is a major cause of global blindness, accounting for 50% to 80% in developing countries. The number of people blind from cataract is expected to rise due to the increase in life expectancy. Aging causes changes in the lens protein leading to opacification of the lens. These changes are often bilateral although maybe asymmetric. Symptoms from cataracts include glare, blurred vision, progressive decrease in visual function and blindness.[6- 8] The safety and effectiveness of cataract surgery are generally well established. About 90% of eyes achieve a visual acuity of 6/12 or better after cataract surgery. In eyes with no pre-existing comorbidity, more than 95% can be expected to achieve this outcome. Many other studies have documented substantial improvement not only in visual acuity but also in quality of life after cataract surgery.[9,10] Although age-related cataract seems to increase the risk of death, the relationship of different cataract subtypes and mortality remains unclear. It is important for clinicians and ophthalmologists to understand the associations between different cataract subtypes and mortality as the pathophysiology, treatment and impact on visual functioning of the 3 subtypes are different. A clearer understanding of the relationship between cataract subtypes and mortality may provide further insights into the pathogenesis of these conditions.[11]

The mean age of the patients was 40.8 years. 55 percent of the patients were males. Positive history of past ocular surgery was seen in 11 percent of the patients. Right eye was operated in 54 percent of the patients. Photoemulsification, Extracapsular cataract extraction (ECCE) and Intracapsular cataract extraction (ICCE) was done in 63 percent, 33 percent and 4 percent of the patients respectively. Complications were seen in 13 percent of the patients which comprised of corneal edema, wound dehiscence and raised intraocular

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pressure. Visual outcome was good in 69 percent of the patients. Day et al described the outcomes of cataract surgery. Median age at first eye surgery was 77.1 years, 36.9% cases had ocular co-pathology and 41.0% patients underwent cataract surgery on both eyes. Preoperative visual acuity was 0.30 logMAR or better in 32.0% first eyes and 47.7% second eyes. Postoperative best-measured visual acuity was 0.00 and 0.30 logMAR or better in 50.8 and 94.6% eyes without ocular co-pathology, and 32.5 and 79.9% in eyes with copathology. For eyes without co-pathology, postoperative uncorrected distance visual acuity was 0.00 and 0.30 logMAR or better in 27.3 and 80.9% eyes. Posterior capsule rupture or vitreous loss or both occurred in 1.95% cases and was associated with a 42 times higher risk of retinal detachment surgery within 3 months and an eight times higher risk of endophthalmitis. These results provided updated data for the benchmarking of cataract surgery. Visual outcomes, and the rate of posterior capsule rupture or vitreous loss or both appear stable over the past decade.[12] Matta S et al evaluated cataract surgery visual outcomes and associated risk factors in rural secondary level eye care centers. Mean age was 61.8 years and 1,133 (55.3%) surgeries were performed on female patients. Pre-existing ocular co-morbidity was present in 165 patients (8.1%). The most common procedure was small incision cataract surgery (SICS) with intraocular lens (IOL) implantation (91.8%). Intraoperative complications were seen in 29 eyes (1.4%). At the 4–11 weeks follow-up visit, based on presenting visual acuity (PVA), 61.8% had a good outcome and based on best-corrected visual acuity (BCVA), 91.7% had a good outcome. Based on PVA and BCVA, those with less than 6/60 were only 2.9% and 1.6% respectively. Using multivariable analysis, poor visual outcomes were significantly higher in patients aged ≥70, in females, those with preoperative comorbidities, with intraoperative complications, eyes that underwent no IOL or anterior chamber-IOL and those undergoing extracapsular cataract extraction. The study demonstrated that quality cataract surgeries can be achieved at rural centre.[13]

CONCLUSION

Cataract surgery has progressed from the technique of intracapsular cataract extraction (ICCE) to extracapsular cataract extraction (ECCE) and has now

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advanced to the method of phacoemulsification. Good outcome with fewer complications were seen.

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ISSN: 0975-3583,0976-2833 VOL 16, ISSUE 5, 2025

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