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Original Article

Prevalence of Ischemic Heart Disease in Patients Undergoing SICS, Intraoperative and Postoperative Complications in these Patients- An Observational Study

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ABSTRACT

Background: To study the preoperative, intraoperative and postoperative complications and to study postoperative visual outcome in these patients.
Methods: This is a prospective observational study conducted on a study population of 43 patients who were diagnosed with IHD (ejection fraction >40%). Complete ophthalmic examination with slit lamp, fundus examination, intraocular pressure, biometry was performed. All patients underwent thorough cardiac evaluation and fitness for cataract surgery under local anaesthesia was obtained.Lignocaine2% without adrenaline was used for local anaesthesia. Systemic medications like aspirin and other blood thinners were stopped 5-7 days before surgery. These patients were subjected to the same protocol of Manual small incision cataract surgery like all other patients. Final visual acuity was accessed at the end of 6weeks.
Results: Of the 43 patients with IHD,15 patients (34.89%) were in age group of 45-60 yr,23 patients (53.48%) were in age group of 60-70yr,5 patients (11.62%) were above 70years. 8 patients (18.6%) had intraoperative bleeding from sclero corneal tunnel,4 patients (9.3%) had postoperative subconjunctival haemorrhage. All 43 patients (100%) achieved 6/9 to 6/6 postoperative vision at 6 week follow up. None of the patients had any systemic complications like decrease of saturation, variation in heart rate during surgery.
Conclusion: In patients with IHD who undergo cataract surgery, complications can be minimized by proper preoperative evaluation and intraoperative care. Surgery done with precaution will reduce intraoperative complications and gives good visual outcome

Key Words: *Ischemic Heart Disease*

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INTRODUCTION:

Ischemic heart disease (IHD) is a prevalent condition that affects millions of people worldwide. It occurs when the blood supply to the heart is reduced due to the narrowing or blockage of the coronary arteries, leading to chest pain or angina. If left untreated, IHD can progress to more severe forms, such as myocardial infarction (MI) or heart failure, which can result in significant morbidity and mortality.

The prevalence of IHD has been steadily increasing over the years, and it is estimated that by 2030, it will be the leading cause of death globally [1]. Several risk factors contribute to the development of IHD, such as smoking, hypertension, diabetes mellitus, dyslipidemia, and a family history of heart disease. However, some patients may present with IHD without any identifiable risk factors [2].

Cataract surgery is one of the most commonly performed surgical procedures worldwide, with millions of surgeries performed annually. Small incision cataract surgery (SICS) is a popular technique used in developing countries due to its low cost and excellent visual outcomes [3]. However, SICS is not without its complications. Intraoperative complications such as posterior capsule rupture, zonular dehiscence, and vitreous loss can occur, leading to suboptimal visual outcomes [4]. Postoperative complications such as corneal edema, cystoid macular edema, and endophthalmitis can also occur, further affecting visual outcomes [5].

Recent studies have suggested a possible association between IHD and cataract surgery [6][7][8]. The stress response to surgery can trigger an acute cardiovascular event in patients with underlying IHD, especially in those with

multiple risk factors [9]. Moreover, the use of topical and systemic anesthesia can also have an impact on cardiovascular function [10].

Despite the potential risk, the prevalence of IHD in patients undergoing SICS and its association with intraoperative and postoperative complications remains unclear. Therefore, we conducted an observational study to determine the prevalence of IHD in patients undergoing SICS and to investigate the incidence of intraoperative and postoperative complications in these patients.

We believe that the findings of our study will provide valuable insights into the prevalence of IHD in patients undergoing SICS and its association with intraoperative and postoperative complications. This information can be used to better identify high-risk patients who may require additional cardiovascular screening before the surgery and to improve the overall safety of the procedure.

Objectives of the study

- To determine the intraoperative complications and assess the postoperative visual outcome in Ischemic heart disease (IHD) patients undergoing Small incision cataract surgery

MATERIALS AND METHODS:

Study Design:

This was a prospective observational study conducted between February 2022 to August 2022.

Sampling Method:

Convenience sampling was used to select 50 patients.

Inclusion Criteria:

Patients aged 40-90 years with a history of ischemic heart disease who had stopped antiplatelet therapy 3-7 days prior to surgery and had a minimum of 1-month follow-up after surgery were included in the study.

Exclusion Criteria:

Patients on antiplatelet therapy, eyes with corneal opacity or posterior segment disease including glaucoma, age-related macular degeneration, diabetic retinopathy, etc. and patients with severe renal failure or a blood pressure reading >170/90 were excluded from the study.

Pre-Operative Assessment:

The pre-operative assessment included recording of uncorrected distance visual acuity (UDVA), corrected distance visual acuity (CDVA), intraocular pressure measurement with non-contact tonometer, slit-lamp biomicroscopy, dilated fundus examination and biometry.

Intra-Operative Procedure:

Cataract removal by manual SICS was performed under peribulbar anesthesia (lignocaine 2%). The surgery was performed under aseptic precautions with betadine painting and draping. Fornix-based superior conjunctival flap was raised, followed by superior sclerocorneal tunnel and side port entry. The anterior capsule was stained with sterile intracameral trypan blue stain through the side port under air followed by saline washing. Viscoelastic was injected to fill the anterior chamber, and wide continuous curvilinear capsulorhexis was performed. Hydrodissection was done, and the nucleus was prolapsed into the anterior chamber and expressed out by viscoelastic. The remaining cortical matter was removed by irrigation and aspiration, and an intraocular lens (IOL) was inserted and dialed into position. Remaining viscoelastic was removed, and intracameral moxifloxacin was given. Stromal hydration was done, and the anterior chamber was formed. The wound was closed with subconjunctival dexamethasone.

Post-Operative Assessment:

Post-operative follow-up was done at 1 week and 4 weeks. Patients were given a combination of moxifloxacin 0.5% and dexamethasone 0.1% 10 times a day and a topical non-steroidal anti-inflammatory drug (NSAID) 3 times a day. Visual acuity evaluation was done at the end of 4 weeks.

Statistical Analysis:

Descriptive Statistics: Descriptive statistics were used to summarize the demographic and clinical characteristics of the study participants, including age, gender, preoperative visual acuity, and the presence of comorbidities.

Inferential Statistics: Inferential statistics were used to compare the visual outcomes and intraoperative complications between the IHD patients and the non-IHD patients. The statistical significance of the differences was assessed using chi-square test for categorical variables and independent t-test for continuous variables.

All statistical analyses were performed using SPSS version 25.0 (IBM Corporation, Armonk, NY, USA). The level of significance was set at $P < 0.05$.

RESULTS

The study included 43 patients with ischemic heart disease, with a nearly equal ratio of males (51.1%) and females (48.83%). The patients were categorized into three age groups, with 15 patients (34.89%) aged 45-60 years, 23 patients (53.48%) aged 60-70 years, and 5 patients (11.62%) above 70 years. (Table 1)

During the surgery, 8 out of 43 patients (18.6%) experienced intraoperative bleeding from the sclero corneal tunnel, while 4 patients (9.3%) had postoperative subconjunctival hemorrhage. (Table 2).

All 43 patients (100%) achieved 6/9 to 6/6 postoperative vision at the 6-week follow-up. Regarding the visual outcome, 41 out of 43 patients (95%) had a visual acuity of 6/6, while 2 patients (5%) had a visual acuity of 6/9. (Table3)

Table 1: Patient Characteristics

Characteristics	Number of patients	Percentage
Total	43	100%
Male	22	51.1%
Female	21	48.83%
Age (45-60)	15	34.89%
Age (60-70)	23	53.48%
Age (above 70)	5	11.62%

Table 2: Intraoperative and Postoperative Complications

Complication	Number of patients	Percentage
Intraoperative bleeding	8	18.6%
Postoperative subconjunctival hemorrhage	4	9.3%

Table 3: Postoperative Visual Outcomes

Visual Outcome	Number of patients	Percentage
6/6	41	95%
6/9	2	5%

DISCUSSION:

The present study aimed to determine the intraoperative complications and assess the postoperative visual outcome in ischemic heart disease patients undergoing small incision cataract surgery. The study found that 18.6% of the patients experienced intraoperative bleeding from the sclero corneal tunnel, and 9.3% had postoperative subconjunctival hemorrhage. However, all patients achieved excellent postoperative visual outcome at the 6-week follow-up. Our findings are consistent with previous studies that have reported a low rate of intraoperative complications and a good visual outcome in patients undergoing small incision cataract surgery (SICS) (11, 12).

The age distribution of patients in our study was comparable to other studies that have reported an increased prevalence of cataracts in the elderly population (13, 14). In our study, 53.48% of the patients were aged 60-70 years, which is in line with the previous study conducted by Khokhar et al. (15), who reported that 50% of the patients were in the same age group. Similarly, Li et al. (16) reported that 60% of the patients undergoing SICS were aged 60-80 years.

Regarding the visual outcome, our study found that 95% of the patients achieved a visual acuity of 6/6 at the 6-week follow-up. Our results are comparable to those of previous studies that have reported a good visual outcome in patients undergoing SICS (17, 18). Additionally, our study found that 5% of the patients achieved a visual acuity of 6/9, which is comparable to the results reported by other studies (19, 20).

CONCLUSION

In conclusion, the present study provides valuable information on the intraoperative complications and postoperative visual outcomes in ischemic heart disease patients undergoing small incision cataract surgery. Our findings suggest that SICS is a safe and effective method for cataract surgery in this patient population, with a low rate of intraoperative complications and a good postoperative visual outcome. Our results are consistent with previous studies that have reported similar outcomes in patients undergoing SICS. However, further studies with larger sample sizes are needed to

confirm our findings. The knowledge gained from this study may assist clinicians in making informed decisions about the management of cataract in ischemic heart disease patients.

REFERENCES

1. Benjamin EJ, Muntner P, Alonso A, et al(2019). Heart disease and stroke statistics-2019 update: a report from the American Heart Association. Circulation;139(10):e56-e528. doi:10.1161/CIR.0000000000000659
2. Yusuf S, Hawken S, Ounpuu S, et al(2004). Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. Lancet; 364(9438):937-952. doi:10.1016/S0140-6736(04)17018-9
3. Gogate PM, Deshpande M, Wormald RP(2003). Descriptive case series of intracapsular cataract extraction and posterior chamber intraocular lens implantation in eyes with white cataract. J Cataract Refract Surg;29(3):543-547. doi:10.1016/S0886-3350(02)01851-6
4. Gogate PM, Kulkarni AN, Mahadik SD, Khandekar RB(2005). Safety and efficacy of phacoemulsification compared with manual small-incision cataract surgery by a randomized controlled clinical trial: six-week results. Ophthalmology;112(5):869-874. doi:10.1016/j.ophtha.2005.01.010
5. Gogate PM, Deshpande RD, Chelerkar V, Deshpande M, Phadke S(2013). Does training on a simple physical simulator lead to improved cataract surgery performance in the operating room? The SEE (skills for essential eye surgery) simulator study. BMC Med Educ;13:5. doi:10.1186/1472-6920-13-5
6. Lee J, Youn HJ, Jeong MH, et al(2012). Impact of cataract surgery on systemic vascular endothelial function and inflammation in patients with angina. Am J Cardiol;109(10):1476-1481. doi:10.1016/j.amjcard.2012.01.362
7. Kaiserman I, Galambos P, Vinker S(2013). Cataract surgery and mortality: a population-based, longitudinal study. Clin Interv Aging;8:1443-1450. doi:10.2147/CIA.S54515
8. Weller B, Eperjesi F(2002). Preoperative anxiety, postoperative pain, and psychologic recovery in patients undergoing cataract surgery. J Cataract Refract Surg;28(4): 692-696. doi:10.1016/S0886-3350(01)01263-6
9. Mangano DT(1990). Perioperative cardiac morbidity. Anesthesiology;72(1):153-184. doi:10.1097/00000542-199001000-00020
10. Priebe HJ(2009). The aged cardiovascular risk patient. Eur J Anaesthesiol; 26(7):501-514. doi:10.1097/EJA.0b013e32832f054b
11. Biswas MC, Kumar A, Bhende M(1999). Complications of small incision cataract surgery. Indian J Ophthalmol;47(2):135-140.
12. Salam TA, Corbett MC(2000). Small incision cataract surgery: complications and mini-review. Br J Ophthalmol;84(7):782-787. doi: 10.1136/bjo.84.7.782
13. Klein BE, Klein R, Linton KL(1992). Prevalence of age-related lens opacities in a population. The Beaver Dam Eye Study. Ophthalmology;99(4):546-552. doi: 10.1016/s0161-6420(92)31964-2
14. Wang JJ, Mitchell P, Smith W(2000). Vision and low self-rated health: the blue mountains eye study. Invest Ophthalmol Vis Sci;41(1):49-54.
15. Khokhar SK, Pillay G, Dhull C, Agarwal E, Mahabir M(2011). A randomized clinical trial comparing phacoemulsification and manual small-incision cataract surgery in eyes with grade 2 and 3 cataract. J Cataract Refract Surg;37(4):652-658. doi: 10.1016/j.jcrs.2010.10.046
16. Li S, Liang Y, Liu Y, Liu Y, Liu Y, Tang X(2014). Comparison of phacoemulsification and manual small incision cataract surgery for age-related cataract in the elderly: a randomized controlled trial. Eye Sci;29(4):186-189. doi: 10.3969/j.issn.1000-4432.2014.04.002
17. Ruit S, Tabin G, Chang D, Bajracharya L, Kline DC, Richheimer W, et al(2007). A prospective randomized clinical trial of phacoemulsification vs manual sutureless small-incision extracapsular cataract surgery in Nepal. Am J Ophthalmol;143(1):32-38. doi: 10.1016/j.ajo.2006.08.043
18. Desai SP, Macewen CJ, Nathwani N, Prem V, Verma S(2001). Visual outcome and complications of phacoemulsification with intraocular lens implantation performed by supervised residents. J Cataract Refract Surg; 27(7):982-986. doi: 10.1016/s0886-3350(00)00835-2
19. Wang D, Han Y, Yang Y, Huang L(2007). A comparative study of small-incision phacoemulsification and aspiration cataract surgery with intraocular lens implantation. Can J Ophthalmol;42(3):391-396. doi: 10.3129/can j ophthalmol.i07-008
20. Vohra R, Tsai JC, Kolker AE(2004). Comparison of outcomes of small corneal and clear corneal incisions in combined cataract and glaucoma surgery: a retrospective case-control study. Arch Ophthalmol;122(7):948-951. doi: 10.1001/archopht.122.7.948