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Research Paper

To stop or to continue aspirin prior to manual small incision cataract surgery and pterygium excision. A descriptive observational study from tertiary care centre of Karnataka

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Abstract
*Introduction: Patients receiving long-term antiplatelet therapy face a significant clinical challenge when they need a cataract and pterygium surgery. If antiplatelet therapy is suspended, there is a risk for vascular events; however, continuation of aspirin treatment may be closely associated with serious perioperative bleeding complications.Hence, there is an issue of whether the risk of thromboembolic events associated with temporarily ceasing antiplatelet treatment before surgery outweighs the advantages of fewer haemorrhagic events.**Objective:** To ascertain whether to stop or continue aspirin prior to manual small incision cataract surgery and pterygium excision.**Methodology:** The present descriptive observational study was carried out at Department of ophthalmology at NMCH Raichur including total number of 30 cases of manual small incision cataract surgeryand 20 patients of pterygium excision with limbal conjunctivalblood autograft examined intraoperatively and postoperatively.Data was collected by using a structure proforma. Data thus was entered in MS excel sheet and analysed by using SPSS 24.0 version IBM USA.**Results:**Out of these 50 cases, majority i.e. 42% were from 51-60 years age group followed by 26% from 41-50 years with mean age 58.6±8.36 years.*
Immediate post op result showed incidence of Sub conjunctival haemorrhage in SICS was 3.3% as compared to pterygium excision as 20% with statistically significant difference ($p<0.05$).
Immediate post op result showed incidence of Peribulbar haemorrhage in SICS was 6.7% as compared to pterygium excision as 10% with statistically no significant difference ($p>0.05$). Immediate post op result showed incidence of graft rejection in pterygium excision as 10% with statistically significant difference ($p<0.05$).
Subsequent follow up at 1st week of post op result showed incidence of Sub conjunctival haemorrhage in SICS was 3.3% as compared to pterygium excision as 15% with statistically significant difference ($p<0.05$). Incidence of graft rejection pterygium excision as 10% with statistically significant difference ($p<0.05$).
Subsequent follow up at 4th week of post op result showed incidence of Sub conjunctival haemorrhage in SICS was 0% as compared to pterygium excision as 5% with statistically no significant difference ($p>0.05$). Incidence of graft rejection in pterygium excision was 0%.
Conclusion:Aspirin can be continued prior to manual cataract surgeryas bleeding complications are not significant and preferably stopped before pterygium excision in view of severe complications like subconjunctival haemorrhages, post operative graft retraction in our study.*

Key words:** **Aspirin, manual cataract surgery, pterygium excision with LCAG

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I. Introduction

Cataracts are one of the most common causes of reversible blindness worldwide, and cataract surgery is one of the most common ocular surgeries performed globally for visual rehabilitation. Vision-related quality of life and visual rehabilitation are essential parameters to determine the success of cataract surgery.[1]

Cataract surgery has evolved over the years, and due to advances in surgical technique, instrumentation, and availability of newer drugs, the surgical procedure involves less risk and excellent outcomes.[2] As per the report by WHO, nearly 20 million people are bilaterally blind worldwide.[3]

Surgical techniques for the management of pterygium vary. The aim of the pterygium surgery is to excise the pterygium and prevent its recurrence. The surgical techniques have evolved from the simple bare

sclera procedure to more complex approaches, such as amniotic membrane transplantation, lamellar keratoplasty, conjunctival autograft, with or without a limbal stem-cell transplant, conjunctival rotation surgery, and the use of fibrin glue.

Pterygium excision with limbal-conjunctival autograft[4]has been reported to be more effective with low recurrence but it may compromise the corneal stem-cell population. The adjunctive use of the amniotic membrane graft results in a low recurrence rate but it is costly.

Aspirin has been the cornerstone of preventing thromboembolic complications in patients with cerebrovascular, coronary artery, and peripheral vascular diseases. It is a weak anticoagulant and acts chiefly through the passivation of platelet cyclooxygenase 1 and suppression of thromboxane A2 production. This regimen has significantly reduced risks for morbidity and mortality due to vascular events. The potential benefit of aspirin and the low rate of adverse effects have made aspirin intaking fashionable in the elderly population.[5-10]

Cataract surgery is one of the most common surgeries performed in elderly patients. [11] It is estimated that more than 20% of patients routinely took aspirin before cataract surgery. [12,13]Patients receiving long-term antiplatelet therapy face a significant clinical challenge when they need a cataract surgery. If antiplatelet therapy is suspended, there is a risk for vascular events; however, continuation of aspirin treatment may be closely associated with serious perioperative bleeding complications. [14,15] Hence, there is an issue of whether the risk of thromboembolic events associated with temporarily ceasing antiplatelet treatment before surgery outweighs the advantages of fewer haemorrhagic events.[16-19]However, at present, there is no clear consistent recommendation in these cases before cataract surgery.

Objective: To ascertain whether to stop or continue aspirin prior to manual small incision cataract surgery and pterygium excision.

Materials and methods

Study setting: Department of ophthalmology at NMCH Raichur

Study duration: FromMarch 2024 toAugust 2024

Study design: Descriptive observational study

Sample size: A total number of 30 cases of manual small incision cataract surgeryand 20 cases of pterygium excisionwith limbal conjunctival blood autograft were examined intraoperatively and postoperatively.

Inclusion criteria:

- Diagnosed cases of cataract willing to participate in our study
- Diagnosed cases of pterygium willing to participate in our study

Exclusion criteria: Patients were excluded if they had a history of myocardial infarction within the past 3 months or general anaesthesia was planned,complicated cataract, lens induced glaucoma, hard cataract with small pupil,double headed pterygium, recurrent pterygium.

Methods of data collection:

Information on pre-existing medical conditions and usual medication use were obtained. History and physical examination were done by a physician at the time he/she cleared the patient for surgery. Whether aspirin has to be stopped before surgery was decided by the Physician himself based on the cardiac risk. Intra-operative and post-operative outcomes were recorded. Written Informed consent was taken. Ethical committee clearance accorded.

Statistical analysis and methods-

Data was collected by using a structure proforma. Data thus was entered in MS excel sheet and analysed by using SPSS 24.0 version IBM USA.Qualitative data was expressed in terms of percentages and proportions.Association between two qualitative variables was seen by using Fischer's exact test.

A p value of <0.05 was considered as statistically significant whereas p value <0.001 was considered as highly significant.

II. Results

Table 1: Distribution of the study population according to age group

		Number	Percent
Age group	<30	1	2.0
	31-40	9	18.0
	41-50	13	26.0

	51-60	21	42.0
	>60	6	12.0
	Total	50	100.0

We included total 50 cases of manual small incision cataract surgeryexcision and pterygium excision. Out of these 50 cases, majority i.e. 42% were from 51-60 years age group followed by 26% from 41-50 years, 18% from 31-40 years, 12% from above 60 years and 2% from less than 30 years age group. Mean age of the study population was found to be 58.6±8.36 years in our study.

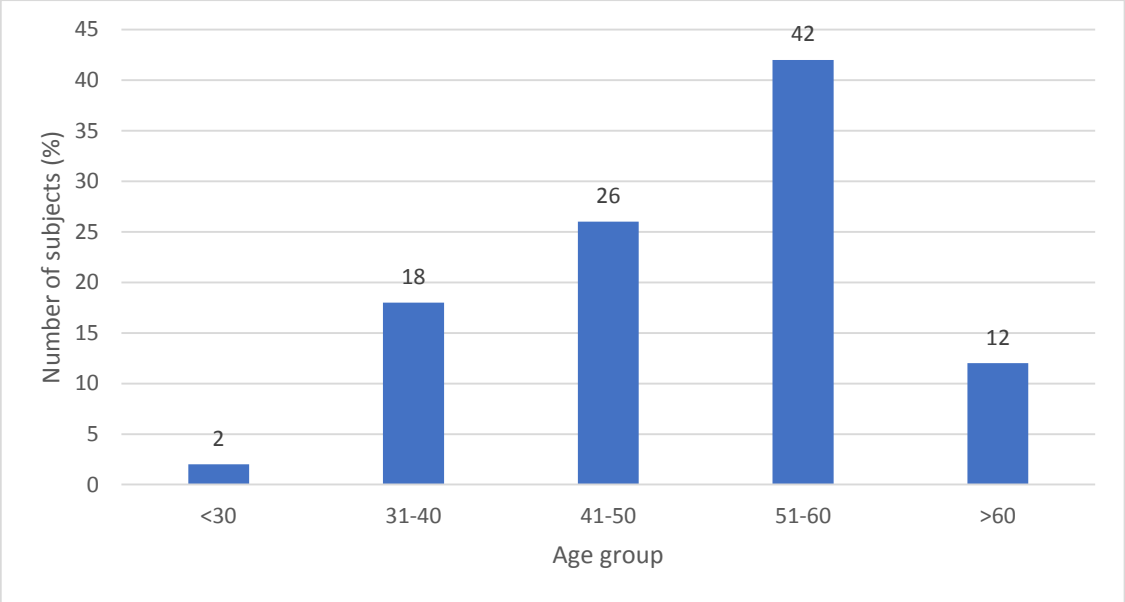

Table 2: Distribution of the study population according to gender

		Number	Percent
Gender	Male	29	58.0
	Female	21	42.0
	Total	50	100.0

58% were males and remaining 42% were females in our study.

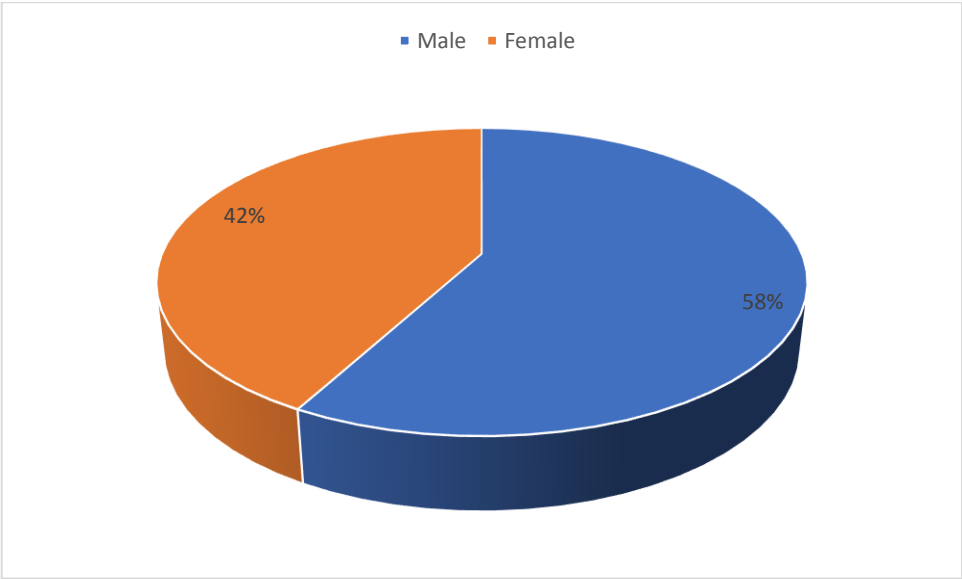

Table 3: Distribution of the study population according to ocular complications

		SICS		Pterygium excision		p
		Number	Percent	Number	Percent	
Immediate	Sub conjunctival haemorrhage	1	3.3	4	20.0	0.04
	Peribulbar haemorrhage	2	6.7	2	10.0	0.063
	Graft retraction	0	0.0	2	10.0	0.048
Post operative week 1	Sub conjunctival haemorrhage	1	3.3	3	15.0	0.025
	Graft retraction	0	0.0	2	10.0	0.048
Post operative week 4	Sub conjunctival haemorrhage	0	0.0	1	5.0	0.9
	Graft retraction	0	0.0	0	0.0	---

30 patients underwent Manual Small Incision Cataract Surgery under Peri-bulbar Anaesthesia and 20 patients underwent pterygium excisionwith limbal conjunctival bloodautograft under peribulbar anaesthesia. Aspirin medication was continued in both the surgical cases. We observed the post operative complications in SICS and pterygium excision in our study.

Immediate post op result showed incidence of Sub conjunctival haemorrhage in SICS was 3.3% as compared to pterygium excision as 20% with statistically significant difference ($p<0.05$).
Incidence of Peribulbar haemorrhage in SICS was 6.7% as compared to pterygium excision as 10% with statistically no significant difference ($p>0.05$).Incidence of graft rejection in pterygium excision as 10% with statistically significant difference ($p<0.05$).

Subsequent follow up at 1st week showed incidence of Sub conjunctival haemorrhage in SICS was 3.3% as compared to pterygium excision as 15% with statistically significant difference ($p<0.05$). Incidence of graft rejection in pterygium excision as 10% with statistically significant difference ($p<0.05$).

Subsequent follow up at 4th week showed incidence of Sub conjunctival haemorrhage in SICS was 0% as compared to pterygium excision as 5% with statistically no significant difference ($p>0.05$). Incidence of graft rejection in pterygium excision was 0%.

III. Discussion

We included total 30 cases of manual small incision cataract surgery and 20 cases of pterygiumexcision. Out of these 50 cases, majority i.e. 42% were from 51-60 years age group followed by 26% from 41-50 years, 18% from 31-40 years, 12% from above 60 years and 2% from less than 30 years age group. Mean age of the study population was found to be 58.6±8.36 years in our study. **(Table 1)**
58% were males and remaining 42% were females in our study. **(Table 2)**
30 patients underwent Manual Small Incision Cataract Surgery under Peri-bulbar Anaesthesia and 20 patients underwent pterygium excision with limbal conjunctival blood autograft under peribulbar anaesthesia. Aspirin medication was continued in both the surgical cases. We observed the post operative complications in SICS and pterygium excision in our study.

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Cataract surgery is a safe surgery, despite the large number of elderly patients with high rates of co-morbidities undergoing the surgery. The rates of all adverse events were extremely low. Among routine users of Aspirin, in manual small incision cataract surgery there was no evidence to suggest that patients who continued use were at

an increased risk of ocular haemorrhagic events whereas in pterygium excision with limbal conjunctival blood autograft, subconjunctival hemorrhageoccured as a complication which interfered with the adhesion of the graft to the underlying tissue. This had potentially lead to graft displacement or retraction.**(Table 3)**

Katz J et al[15] showed among routine users, 22.5% of aspirin users & 28.3% of warfarin users discontinued these medications before surgery. The rate of thromboembolic events were1.5/1000 & 3.8/1000 among those who discontinued & continued its use respectively.

Kobayashi H et al[20] depicted although there was no significant intraoperative bleeding in any case, 47 out of 173 in maintenance group & 31 out of 182 in the discontinuation group had subconjunctival hemorrhage post operatively.

Assia EI et al[21] suggested that continuing aspirin had negligible effect on intraocular bleeding. The only significant difference among the 2 groups was slightly greater need for diathermy in patients who continued medication.

Barequet IS et al[22] among 51 eyes noted no ocular haemorrhagicor thrombo-embolic events during surgery & 1 week follow-up.

IV. Conclusion:

The outcome indicated that aspirin can be continued prior to manual small incision cataract surgery as bleeding complications are not significant and preferably stopped before pterygium excision with limbal conjunctival blood autograft in view of complications like subconjunctival haemorrhage and graft retraction in our study.

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