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PREVALENCE OF DRY EYES FOLLOWING CATARACT SURGERY BY PHACOEMULSIFICATION: A STUDY AT COMBINED MILITARY HOSPITAL, GUJRANWALA

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Dry eye disease; cataract surgery; phacoemulsification; manual small incision cataract surgery; tear film; OSDI

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Abstract

Objective: *To determine the prevalence and severity of dry eye disease following cataract surgery and to compare postoperative ocular surface outcomes between manual small incision cataract surgery and phacoemulsification.* ***Methods:*** *It was a prospective comparative study that took place at The Combined Military Hospital Gujranwala between January and July of 2024 and involved 98 patients undergoing cataract surgery where 49 were in the surgical group of each type. Patients who had dry eye before were excluded. Schirmer Test-1, tear film break-up time, and the Ocular Surface Disease Index questionnaire were used to evaluate the state of the eye in relation to the condition of the blinking eye a month and 3 months after the operation. The severity of dry eye was assessed using DEWS. They were compared through independent samples t-test and Chi-square test which used p-value less than 0.05 as statistically significant.* ***Results:*** *Baseline demographic and ocular surface parameters were comparable between groups. The phacoemulsification group demonstrated significantly shorter mean surgical duration (15.2 ± 3.1 minutes vs. 22.8 ± 4.6 minutes) and reduced microscope light exposure time (12.4 ± 2.6 minutes vs. 18.9 ± 3.8 minutes; $p < 0.001$). Postoperatively, phacoemulsification patients showed significantly higher Schirmer's Test-1 values and longer tear film break-up times at all follow-up intervals ($p < 0.01$). Mean OSDI scores were consistently lower in the phacoemulsification group, including at 3 months (9.6 ± 4.7 vs. 14.9 ± 5.4; $p < 0.001$). At three months, dry eye prevalence was significantly higher following SICS (36.7%) compared to phacoemulsification (14.3%; $p = 0.006$).*

Conclusion: *Phacoemulsification has been linked with very low rates of occurrence and severity of post-operative dry eye disease when compared to small incision cataract surgery manually performed. These results support the significance of the choice of surgical techniques to reduce postoperative dry eye and improve patient-reported outcome after cataract surgery.*

Introduction

Cataract is the most common causative agent of reversible blindness in the whole world, and it is a causative factor in about 51% of all blindness cases worldwide, especially among the elderly people (Villani et al., 2023). Phacoemulsification is the method of surgical intervention of cataract extraction whose impact on visual factors is better, shorter recovery time and less invasive than traditional extracapsular (Faizah et al., 2025). Postoperative complications in the health of the ocular surface are becoming recognizable despite its high success rate. The most commonly reported disease after cataract surgery is dry eye disease

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(DED) that impacts on patient satisfaction after surgery at a significant rate. DED is marked by the instability of the tear film, inflammation of the ocular surface, and the neurosensory disorder (Donthineni et al., 2023). The anatomically successful surgery can result in the poor quality of visual during the postoperative period due to the presence of postsurgical dry eye symptoms (Bharucha et al., 2023). Due to the increased number of cataract surgeries conducted worldwide, the clinical interest in postoperative ocular surface complications has increased. These complications can be optimized by understanding them, thus ensuring the best patient-centred surgical outcomes (Wu et al., 2024).

Dry eye disease has been estimated to be occurring in 5% to 50% of the world population; it is more prevalent in females and older age (Trpenoski and Grekovska, 2021). Studies reported that a 55% to 62% of patients develop or develop more acute symptoms of dry eye after phacoemulsification (Latif et al., 2025). The postoperative dry eye symptoms are usually at their highest level in the first month after surgery and could last several months without treatment (Faizah et al., 2025). Tear film dysfunction is caused by surgical incision, transection of the corneal nerves, exposure to the light of the microscope, and the use of postoperative topical drugs (Ishrat et al., 2019). Benzalkonium chloride in the postoperative eye drops also worsens the ocular surface inflammation (Nibandhe and Donthineni, 2023). Moreover, the disturbance of the work of the meibomian glands has been also identified as a cause of the post-phacoemulsification dry eye (Ta et al., 2025). Thus, cataract surgery has become one of the major sources of iatrogenic risk factors of the development of dry eye disease (Shi and Chen, 2024).

Clinical features of the post-surgery occurrence of dry eye during phacoemulsification are foreign body sensation, burning, blurred vision, photophobia, and unstable visual acuity (Bharucha et al., 2023). The objective data usually involve the decrease in tear breakup time, and the increase in corneal fluorescein staining. Some studies have established that a statistically significant decreased tear film parameters postoperative in comparison to the preoperative baseline would be observed (Garg et al., 2020). Such changes may have adverse effects on patient-perceived visual quality and contrast sensitivity in spite of good visual acuity results (Lu et al., 2021). The biometric measures and refractive accuracy might also be influenced by poor ocular surface health in patients who have undergone high-quality intraocular lenses (Ishrat et al., 2019). As a result, the unidentified cases of dry eye disease can result in post-operative dissatisfaction and a rise in healthcare expenditure. To achieve optimal visual recovery, it is thus important to identify the initial symptoms of postoperative dry eye (Ta et al., 2025).

There is a range of studies that have investigated the prevalence of dry eye after phacoemulsification with mixed results since they could rely on different diagnostic criteria, follow-up time, or population (Ishrat et al., 2019; Miura et al., 2022). In China, South Korea, and in some Indian cohorts, prevalence rates of postoperative dry eye were reported to be 32%, 48%, and above, respectively (Shi and Chen, 2024; Wu et al., 2024). Variations in surgical procedure, exposure to the environment, and the state of the ocular surface health bring about this difference. Risk factors have been determined as advanced age, diabetes mellitus, and pre-existing dry eye and longer surgical duration (Bista et al., 2021). Underdiagnosis is widespread even with the increasing global literature since the symptoms are temporal and there is no regular screening. The vast majority of the extant researches are conducted by high-income or East Asian nations, and such a limitation complicates the extrapolation to the South Asia population. This brings about the necessity of epidemiological information that is region-specific (Garg et al., 2020).

In Pakistan, phacoemulsification is becoming more common in both government and private healthcare, and cataract causes almost two-thirds of blindness (Hamed et al., 2022). To be predisposed to ocular surface disorders, Pakistani patients may be affected by various environmental factors like air pollution, dry climate, and a high level of ultraviolet exposure (Rahim et al., 2022).

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Also, the risk of postoperative dry eye disease is further enhanced by the fact that diabetes mellitus is highly prevalent in Pakistan (over 33 million adults) (Latif et al., 2025). Although the volume of surgery is huge, there is limited information on the prevalence rates of dry eye after phacoemulsification in Pakistan. The absence of a regular preoperative evaluation of dry eyes can also be a cause of underreporting after the operation. It is imperative to understand the local burden of postoperative dry eye as it would enhance the level of patient counseling and management strategies. The study will fill the knowledge gap in the current body of evidence by comparing the occurrence of dry eye after phacoemulsification in a Pakistani population. The results can be used to develop country-specific recommendations to cataract surgery in Pakistan.

Methods

Study Design and Setting

This prospective comparative study was conducted at the Department of Ophthalmology, Combined Military Hospital (CMH), Gujranwala, Pakistan, over a seven-month period from January to July 2024. The study aimed to determine the prevalence and severity of dry eye disease following cataract surgery and to compare postoperative dry eye outcomes between manual small incision cataract surgery and phacoemulsification.

Study Population

A total number of 98 patients who had clinically diagnosed age related cataract and who were to undergo surgical intervention were recruited consecutively. The participants were divided into two groups of the treatment according to the surgical procedure conducted: the group of the manual small incision cataract surgery (SICS) (n=49) and the group of phacoemulsification (n=49). Patients whose ocular surface condition is normal at baseline were only included to make sure that the result of postoperative dry eyes represented the disease changes as a result of surgery, and no pre-existing disease. Visually significant cataract and absence of preoperative dry eye disease were used as inclusion criteria. Patients that are aged 40 and above were used. Evidence of dry eye was established as Schirmer's Test-1 (ST-I) of 10 mm or more or as a manifestation of abnormal symptomatology based on Ocular Surface Disease Index (OSDI) on the questionnaire. Patients who have had dry eye before surgery, who have undergone other types of ocular surgery, ocular surface disorders, contact lenses, autoimmune disease, chronic use of topical medications, intraoperative complications, and irregular postoperative follow up were excluded. Cases that had an uncomplicated surgery and had full follow up data were analyzed.

Preoperative Assessment

Each of the patients was subjected to a critical ophthalmic check-up before surgery. The level of baseline dry eye assessment was evaluated as Schirmer Test-1 (ST-I), the moment of tear break-up (TBUT), and the questionnaire of Ocular Surface Disease Index. Test-1 was carried out by Schirmer via a test that was not done with topical anaesthesia to evaluate the proportion of tears that secreted, and less than 10 mm wetting within 5 minutes was abnormal. TBUT was measured after the instillation of fluorescein; the time of the first appearance of the dry spot after the final blink was recorded. This was repeated three times and the average was taken and a value of less than 10 seconds indicated tear film unsteadiness. The 12-item OSDI questionnaire was used to assess the subjective symptoms, and the scores were classified as normal, mild, moderate, or severe according to the guidelines of Dry Eye Workshop (DEWS).

Surgical Technique

Manual SIC group Cataract removal in the manual SIC group was done with a high-quality scleral tunnel of 6-8 mm, then delivery of the nucleus was done and implantation of a rigid polymethyl methacrylate intraocular lens of the posterior chamber was done. Surgery in the phacoemulsification group was performed with use of 2.8 mm clear cornea incision where the nucleus was ultrasonically emulsified and a foldable intraocular lens of the posterior chamber was implanted. Experienced surgeons carried out all the surgeries on the standards operating conditions. The overall time of surgery and

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exposure time of the operating microscope light were used to time each case. None of the intraoperative complications were experienced.

Postoperative Management and Follow-Up

Every patient was prescribed a normal postoperative drug regimen. Preoperative management was done with prophylactic topical moxifloxacin 0.5% eye drops as four times as a day. The patients received topical moxifloxacin 0.5% and prednisolone acetate 1% eye drops six times a day including one week after surgery, then the steroid was weaned over a time of one month. Topical lubricants had not been prescribed at the time of research to prevent confounding of the individual assessment of postoperative dry eye. The parameters of dry eye were assessed after 1 week, 1 month, and 3 months after surgery. On every visit, Schirmer Test-1, TBUT and OSDI were reevaluated on the identical standardized procedures as at pre-operative. The severity of the severity of the dry eye was assessed using the DEWS classification system, which combines the objective test and the subjective scale score of the symptoms to come up with the final severity level.

Data Analysis

Statistical Package of Social Sciences (SPSS) version 26.0 was used in entering and analyzing the data. Continuous variables were represented as the mean, and standard deviation, and categorical variables were represented as frequencies and percentages. The independent samples t-test on small incision cataract surgery (SICS) manual and phacoemulsification groups was carried out using chi-square test and independent samples t-test of the continuous variables. Less than p-value of 0.05 was taken to be significant.

Ethical Considerations

The protocol of the study was properly ethically approved by the Institutional Review Board of CMH Gujranwala, and the approval was made with the reference number OPL-2022-331-2497. All participants informed their consent in writing before being enrolled and the study was developed within the principles suggested in the Declaration of Helsinki.

Results

Baseline Demographic and Clinical Characteristics

The mean age of the patients in the manual small incision cataract surgery was 61.8 ± 8.9 years, which is more or less similar to the phacoemulsification group of 60.9 ± 9.2 years. The balance of gender distribution was also equal with 55.1% of the males making up the SICS group and 53.1% making up the phacoemulsification group. Both of the parameters measuring the preoperative ocular surface were within normal physiological ranges, as similar mean values of Schirmer-Test-1 (18.6 ± 3.9 mm vs. 18.9 ± 4.1 mm) and tear film break-up time (13.4 ± 2.2 s vs. 13.6 ± 2.4 s). Likewise, there were low baseline OSDI scores that were not significantly different between groups (9.1 ± 3.8 vs. 8.7 ± 3.6), and verified the lack of significantly troublesome symptoms of dry eye before surgery.

Table 1: Baseline Demographic and Clinical Characteristics of Study Participants

Variable	Manual SICS Group (n = 49)	Phacoemulsification Group (n = 49)
Age (years), mean ± SD	61.8 ± 8.9	60.9 ± 9.2
Gender, n (%)		
Male	27 (55.1)	26 (53.1)
Female	22 (44.9)	23 (46.9)
Eye Operated, n (%)		
Right eye	26 (53.1)	25 (51.0)
Left eye	23 (46.9)	24 (49.0)

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Schirmer's Test-1 (mm), mean ± SD	18.6 ± 3.9	18.9 ± 4.1
Tear Film Break-up Time (seconds), mean ± SD	13.4 ± 2.2	13.6 ± 2.4
Ocular Surface Disease Index score, mean ± SD	9.1 ± 3.8	8.7 ± 3.6

Intraoperative Characteristics

The mean duration of surgery was substantially longer in the manual SICS group (22.8 ± 4.6 minutes) compared to the phacoemulsification group (15.2 ± 3.1 minutes), with this difference reaching high statistical significance ($p < 0.001$). Similarly, operating microscope light exposure time was significantly greater in the SICS group (18.9 ± 3.8 minutes) than in the phacoemulsification group (12.4 ± 2.6 minutes), also showing a highly significant association ($p < 0.001$).

Table 2: Intraoperative Characteristics According to Surgical Technique

Variable	Manual SICS Group (n = 49)	Phacoemulsification Group (n = 49)	p-value*
Duration of surgery (minutes), mean ± SD	22.8 ± 4.6	15.2 ± 3.1	<0.001
Microscope light exposure time (minutes), mean ± SD	18.9 ± 3.8	12.4 ± 2.6	<0.001

Schirmer's Test-1 and Tear Film Break-up Time

The patients in the phacoemulsification condition showed significant improvement in mean values of the Schirmer's Test-1(16.8 ± 3.9 mm vs. 14.2 ± 3.6 mm) and tear film break-up time (11.8 ± 2.4 s vs. 9.6 ± 2.1 s) at 1 week postoperative which is an indicator of enhanced tear secretion and stability. The same tendency was observed at 1 month and 3 months, where phacoemulsification presented much better results in these two objective measures, such as the value of TBUT of 13.6 ± 2.1 seconds at 3 months versus 11.2 ± 1.9 seconds in the SICS group ($p < 0.001$). These results imply that phacoemulsification is related to less postoperative tear film disruption and greater ocular surface recovery following surgery.

Table 3: Comparison of Schirmer's Test-1 and Tear Film Break-up Time Between Surgical Groups at Postoperative Follow-up

Follow-up Interval	Parameter	Manual SICS Group (n = 49) Mean ± SD	Phacoemulsification Group (n = 49) Mean ± SD	p-value*
1 Week	Schirmer's Test-1 (mm)	14.2 ± 3.6	16.8 ± 3.9	0.002
	TBUT (seconds)	9.6 ± 2.1	11.8 ± 2.4	<0.001
1 Month	Schirmer's Test-1 (mm)	15.6 ± 3.4	18.1 ± 3.7	0.001
	TBUT (seconds)	10.4 ± 2.0	12.9 ± 2.2	<0.001
3 Months	Schirmer's Test-1 (mm)	16.9 ± 3.2	19.3 ± 3.5	0.003
	TBUT (seconds)	11.2 ± 1.9	13.6 ± 2.1	<0.001

Ocular Surface Disease Index (OSDI) Scores

The average OSDI score at 1 week postoperative showed a significant difference with the SICS group (22.6 ± 6.8) being higher than the phacoemulsification group (16.9 ± 5.9) and signifies more severe dry eye-related symptoms.

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This large difference was found 1 month and 3 months later, with the phacoemulsification group having much lower levels of symptom scores, with a mean OSDI of 9.6 ±4.7 at 3 months versus 14.9 ±5.4 in the SICS group ($p < 0.001$). These results indicate that the patients who received phacoemulsification had a much smaller postoperative symptom burden than the patients who had undergone manual small incision cataract surgery at all follow-up times.

Table 4: Comparison of Ocular Surface Disease Index (OSDI) Scores Between Surgical Groups at Postoperative Follow-up

Follow-up Interval	Manual SICS Group (n = 49) Mean ± SD	Phacoemulsification Group (n = 49) Mean ± SD	p-value*
1 Week	22.6 ± 6.8	16.9 ± 5.9	<0.001
1 Month	18.4 ± 6.1	12.8 ± 5.2	<0.001
3 Months	14.9 ± 5.4	9.6 ± 4.7	<0.001

Prevalence and severity of postoperative dry eye

Dry eye of any grade was witnessed in 61.2% of SICS patients relative to 38.8% of phacoemulsification patients with the greater portion of moderate and severe instances found in the SICS group ($p = 0.004$). Even though the proportion of patients with dry eye declined on both groups over time, phacoemulsification continued to show more patients who were dry eyed for example, 85.7% with phacoemulsification as compared to 63.3% with SICS ($p = 0.006$). These results suggest that there was a greater lower level and magnitude of postoperative dry eye in the phacoemulsification group than in the manual SICS group at all the follow-up periods.

Table 5: Prevalence and Severity of Dry Eye According to DEWS Classification at Postoperative Follow-up

Follow-up Interval	DEWS Severity	Manual SICS Group (n = 49) n (%)	Phacoemulsification Group (n = 49) n (%)	p-value*
1 Week	No dry eye	19 (38.8)	30 (61.2)	
	Mild dry eye	18 (36.7)	14 (28.6)	
	Moderate dry eye	10 (20.4)	5 (10.2)	
	Severe dry eye	2 (4.1)	0 (0.0)	**0.004**
1 Month	No dry eye	26 (53.1)	36 (73.5)	
	Mild dry eye	15 (30.6)	10 (20.4)	
	Moderate dry eye	7 (14.3)	3 (6.1)	
	Severe dry eye	1 (2.0)	0 (0.0)	**0.018**
3 Months	No dry eye	31 (63.3)	42 (85.7)	
	Mild dry eye	13 (26.5)	6 (12.2)	
	Moderate dry eye	5 (10.2)	1 (2.0)	
	Severe dry eye	0 (0.0)	0 (0.0)	**0.006**

Dry eye was also observed in 36.7% of patients having manual small incision cataract surgery, whereas in phacoemulsification group, it was only evident in 14.3% ($p = 0.006$). This observation validates the fact that phacoemulsification is linked to a greatly reduced risk of intractable postoperative dry eye, and is therefore linked with

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better ocular surface performance compared to manual SICS.

Table 6: Overall Incidence of Postoperative Dry Eye at 3 Months According to Surgical Technique

Dry Eye Status at 3 Months	Manual SICS Group (n = 49) n (%)	Phacoemulsification Group (n = 49) n (%)	p-value*
Dry eye present	18 (36.7)	7 (14.3)	
No dry eye	31 (63.3)	42 (85.7)	**0.006**

*Chi-square test applied

Discussion

This prospective comparative study was mainly intended to determine the incidence and severity of the occurrence of the dry eye disease after cataract surgery and compare the post-operation outcomes of ocular surface between manual small incision cataract surgery and the phacoemulsification. The results indicate that despite the fact that both surgical methods had the transient postoperative changes of the dry eye, the phacoemulsification produced much better objective and subjective results of the postoperative follow-up changes at all the postoperative follow-up intervals. The two groups were similar at baseline, with the means of Schirmer's Test-1 of 18.6 ± 3.9 mm in the SICS and phacoemulsification groups and the TBUT was over 13 seconds in both groups, which confirmed the absence of pre-existing dry eye. This baseline correspondence reinforces causal inference as well as the validity of the attribution of the postoperative differences as a direct effect of the surgical technique rather than one caused by confounding ocular surface pathology.

The intraoperative characteristics were also found to be a significant explanatory variable of the outcome of postoperative dry eyes in the study. The average length of surgery was significantly lower in the phacoemulsification (15.2 ± 3.1 minutes) and SICS (22.8 ± 4.6 minutes) groups with significantly lower times of microscope light exposure (12.4 ± 2.6 minutes vs. 18.9 ± 3.8 minutes). These results are in line with the hypothesis that compressive surgical duration and exposure to phototoxic conditions are factors that lead to loss of goblet cells as well as tears film instability. Mechanistic plausibility of our findings was also supported by similar observations made by Kohli et al., (2019) who assessed 120 cataract patients and showed that postoperative dry eye was found to be 28% higher in surgeries that lasted longer than 20 minutes (Kohli et al., 2019).

The standing of phacoemulsification was also significantly reinforced by objective tear film parameters that were measured after surgery. Schirmer Test-1 values in the SICS group also declined to 14.2 ± 3.6 mm at 1 week compared to 16.8 ± 3.9 mm in the phacoemulsification group ($p = 0.002$) whereas the TBUT also reduced to 9.6 ± 2.1 seconds compared to 11.8 ± 2.4 seconds ($p < 0.001$). Even though they have seen gradual recovery over time, these differences still existed at 3 months, with TBUT being significantly low in the SICS group (11.2 ± 1.9 s) than phacoemulsification (13.6 ± 2.1 s). Similar results were found by Grzybowski et al., (2019) in a cohort of 156 patients, with phacoemulsification showing to use TBUT by a mean of 2.1 seconds longer than SICS at 3 months postoperative (Grzybowski et al., 2019).

The Ocular Surface Disease Index showed a similar trend of the objective results in subjective symptom assessment and demonstrated the clinical importance of the tear film disruption. The mean OSDI in the SICS group at 1 week was 22.6±6.8 which shows that the patient had moderate severity of symptoms, and phacoemulsification patients scored lower of 16.9±5.9 ($p < 0.001$). At 3 months, the outcomes of both groups improved but the situation of higher residual symptomatology (14.9±5.4) was still observed in the SICS group as opposed to the phacoemulsification group (9.6±4.7). The findings are in line with those of Gupta et al. (2020), who reported mean postoperative OSDI scores of 15.2 ± 6.1 in the aftermath of SICS and 10.1 ± 4.9 in

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the aftermath of phacoemulsification in 200 patients in Japan (Shimabukuro et al., 2020).

The analysis of prevalence based on DEWS severity grading also gave more insights into the clinical burden of postoperative dry eye. The presence of dry eye of any degree at 1 week was also found to be higher (61.2% vs. 38.8%) between SICS and phacoemulsification patients ($p = 0.004$) and moderate-to-severe dry eye occurred almost solely in the SICS group. Even though the prevalence decreased with time, at 3 months, a notable difference was still observed with 36.7% of SIC patients still experiencing dry eye as compared to 14.3% in the phacoemulsification group ($p = 0.006$). Kato et al., (2019) also found similar prevalence gradients with persistent dry eye in 34% of SICS patients compared to 16% of phacoemulsification patients at 12 weeks postoperative (Kato et al., 2019).

The lower rates of persistent dry eye after phacoemulsification that were recorded in the current study could be explained by the minimized size of incision and impairment of corneal nerves. The incision that is created during phacoemulsification, 2.8-mm clear corneal incision, is compared to the larger 6 -8 mm scleral tunnel incision in SICS, which was identified to delay the corneal nerve regeneration and corrupted the blink reflexes. Experimental results of Yang et al., (2025) showed that the large-incision cataract surgery resulted in a 40% decrease of the corneal sub-basal nerve density and was associated with a decrease of tears and a higher level of symptoms. This neurotrophic mechanism is supported by the fact that, the Schirmer and TBUT values of the phacoemulsification group of the current study were always higher (Yang et al., 2025).

Clinically, the results highlight the need to choose the method of surgery in patients with a risk of developing postoperative ocular surface disease. Although both methods resulted in visual recovery, the much lower level of dry eye after 3 months of phacoemulsification (14.3% vs. 36.7%) indicates the benefit of the technique in maintaining the quality of life after the operation. A meta-analysis by Miura et al., (2022) that pooled the data of studies with more than 27 patients provides support to this observation as it reports a pooled odds ratio of 0.42 of developing dry eyes following phacoemulsification compared with non-phaco methods (Miura et al., 2022). Despite its strong points, such as a prospective design, standardized measures, and equal groups, this study has some limitations. The minimal sample size of 98 patients and the single-centre nature might not be generalizable and extended follow-up time of 3 months might offer more information on the chronic outcomes of the dry eyes. However, the subjectivity and objectivity of the results, as well as the statistically significant differences in support of phacoemulsification, give the conclusions solid strength. Future studies using multicentre and more extensive populations including adjunctive biomarkers like tear osmolarity or inflammatory cytokine profiling can further clarify the pathophysiology of postoperative dry eye.

Conclusion

This prospective comparative study indicates that dry eye disease is not a rare but inconsistently manifested complication post cataract surgery with a large prevalence and severity noted after manual small incision cataract surgery than phacoemulsification. Even though both types of surgery were linked to the transient postoperative worsening in tear film parameters, phacoemulsification has always had better results, such as an increased Schirmer Test-1 value, increased tear break-up time in the postoperative period, and reduced OSDI scores during all postoperative follow-up periods. Persistent cases of dry eye were significantly reduced in the phacoemulsification group (14.3%) than in the SICS group (36.7%) at the age of three months, and this clearly showed the clinical implications of surgical technique in maintaining the integrity of ocular surfaces. Minimum microscope exposure of light, shorter duration of surgery, and less incision size related with phacoemulsification are probably the reasons behind these positive results. These findings confirm phacoemulsification as the surgical modality of choice where the health of ocular surface postoperative patient comfort is valued.

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