

Comparison of Macular Thickness in Diabetic Patients Without Retinopathy After Small Incision Cataract Surgery and Phacoemulsification Surgery

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Abstract

Background: Diabetic patients are at increased risk of postoperative retinal changes following cataract surgery. Macular thickening may occur even in the absence of diabetic retinopathy and can affect visual outcomes.

Aims & Objectives: This study compared postoperative macular thickness following Small Incision Cataract Surgery (SICS) and phacoemulsification in diabetic patients without retinopathy.

Methods: This comparative observational study included 64 diabetic patients with senile cataract without diabetic retinopathy. Patients were divided into two groups: SICS (n=32) and phacoemulsification (n=32). Macular thickness was assessed using Optical Coherence Tomography (OCT) preoperatively and postoperatively on day 1, at 1 week, and at 4 weeks. Best corrected visual acuity (BCVA) was also evaluated.

Results: The mean preoperative macular thickness was comparable between the SICS and phacoemulsification groups ($224.8 \pm 12.6 \mu\text{m}$ vs $223.2 \pm 11.9 \mu\text{m}$; $p=0.62$). Both groups demonstrated a progressive increase in macular thickness postoperatively. At 4 weeks, mean macular thickness was significantly higher in the SICS group ($247.8 \pm 15.6 \mu\text{m}$) than in the phacoemulsification group ($239.3 \pm 14.1 \mu\text{m}$; $p=0.028$). The mean increase from baseline was also significantly greater following SICS ($23.0 \pm 8.2 \mu\text{m}$) compared with phacoemulsification ($16.1 \pm 7.3 \mu\text{m}$; $p=0.004$). Visual acuity improved significantly in both groups; however, phacoemulsification showed superior visual outcomes at 1 week and 4 weeks postoperatively.

Conclusion: Both surgical techniques resulted in transient postoperative macular thickening; however, phacoemulsification was associated with less macular thickening and better visual outcomes compared to MSICS.

Keywords

Diabetes mellitus, cataract surgery, macular thickness, OCT, phacoemulsification, SICS.