

EFFICACY OF MODIFIED INVERTED ILM FLAP TECHNIQUE FOR THE TREATMENT OF CHRONIC AND LARGE MACULAR HOLE.

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INTRODUCTION

The surgical management of an idiopathic macular hole is one of the most successful operations in vitreo-retinal surgery with closure rates of 90% to 98%. However, the factors such as the macular hole diameter, duration, age, and associated pathology affects the visual and anatomical outcomes. Chronic and large macular holes have the poorest surgical outcomes with closure rates of 40% to 83%.

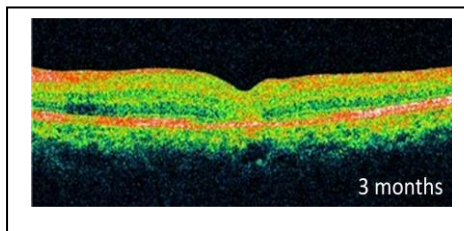
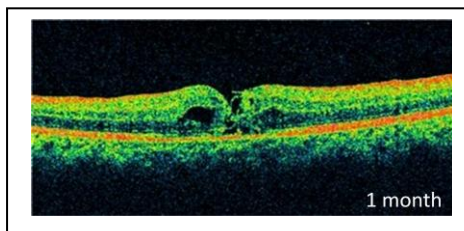
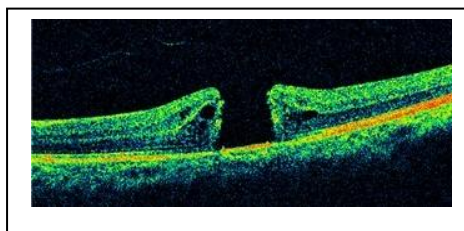
An inverted internal limiting membrane (ILM) flap technique was reported to increase the functional and anatomical outcomes of large macular holes. However, this technique; is limited by difficulty in maintaining the inverted ILM flap inside the hole during fluid-air exchange. This case series reports a new technique that improves retention of the ILM flap on the macular surface, and describe the procedure suitable for redo cases where there is no ILM bordering the macular hole.

METHODS

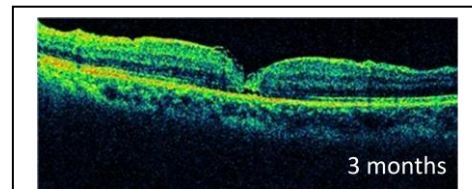
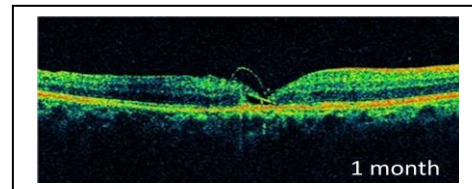
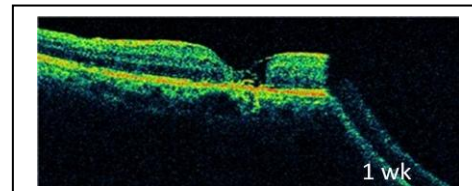
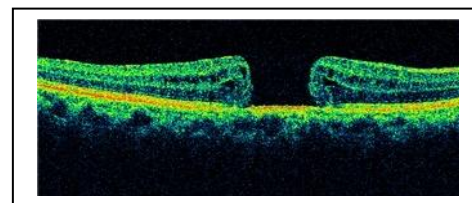
The present study is hospital based retrospective, interventional case series. 11eyes of 11 patients underwent standard 3-port pars plana vitrectomy with modifications of inverted internal limiting membrane flap technique that improve retention of the ILM flap on the macular surface. The patients with chronic idiopathic macular holes larger than 700 microns were included. The patients with severe retinal pathology as proliferative diabetic retinopathy, exudative age-related macular degeneration, or retinal detachment were not included in this study. In this technique after folding ILM flap inside the macular hole, Approximately 0.2 mL of viscoelastic is injected over the ILM flap, forming a “viscoelastic cap”, that help in retention of flap inside macular hole during fluid gas exchange. Preoperative, postoperative visual acuity (at 1week, 1, 3, 6 and 12 month) and optical coherence tomography images were evaluated. The main outcome measure was visual outcome and macular hole closure rate.

DISCUSSION

There were 7 males and 4 females; majority (77%) of patients were lying in the age group from 61 to 70 years. The mean minimal linear diameter of the macular holes was 811.4 μm (728-995 μm). The Preoperative and postoperative mean visual acuity was 1.2 logMAR and 0.56 logMAR respectively. We confirmed the closure of the macular hole with optical coherence tomography in all 100% of cases. We tried this method of modified inverted internal limiting membrane flap technique, due to which even large macular hole (>700 microns) showed functional and anatomical improvement.



Case 1 &2 showing preoperative and postoperative OCT images



CONCLUSION

We present a modified ILM flap technique to improve retention of the ILM flap within the macular hole and improve the reliability and reproducibility of the operation. This procedure is also suitable for redo cases where there is no ILM bordering the macular hole.

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