PROSPECTIVE STUDY OF EARLY VITRECTOMY FOR EPIRETINAL MEMBRANE (THE SUNSHINE STUDY)

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INTRODUCTION

Epiretinal membrane (ERM) is a fibrotic tissue that develops on the retinal surface and is reportedly present in around 10% individuals aged 40 years and older. The challenge of ERM treatment is the correct surgical indication. The common classical criterion to indicate surgery is usually the decrease of visual acuity (VA). Recently, important visual functions, including metamorphopsia (distortion), have received increasing attention. This study aims to elucidate the utility of ERM removal in patients with visual acuity 20/40 or better.

MAIN OUTCOME

Primary outcome is change in M-CHART score from baseline to 6 months post-operatively. Secondary outcomes included change in VA, Optical Coherence Tomography (OCT) parameters at 2, 6, and 12 months from baseline, and change in metamorphopsia and VFQ-25 questionnaires at 6 and 12 months from baseline.

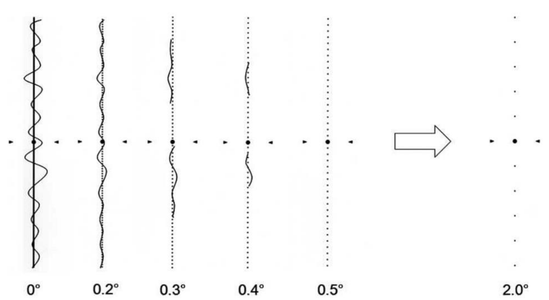

Figure1: Method of determining the metamorphopsia score using M-CHART.

METHODS

- Sunshine is an REB-approved prospective study comparing two groups of patients diagnosed with ERM following surgical intervention (Group1, VA 20/40 or better versus Group 2, VA 20/50 or worse).
- Patients ≥ 18 years old presenting to Calgary Retina Consultants with symptomatic idiopathic epiretinal membrane were screened and underwent surgical treatment.
- Objective metamorphopsia was assessed utilizing M-CHART test at baseline, 2, 6 and 12 months post-operatively.
- Subjective metamorphopsia and quality-of-life were assessed utilizing metamorphopsia and VFQ-25 questionnaires at baseline, 6 and 12 months post-operatively.

RESULTS

- Twenty-seven patients had completed the 6-month follow-up.
- At 6-month there was a significant improvement in VA (-0.21 logMAR, $p < 0.0001$) and in OCT central foveal thickness (-96.37µm, $p < 0.0001$).
- Total M-CHART score showed a trend towards improvement at 6 months (-15.06%, $p = 0.394$). At 6 months, there was also a trend towards improvement in the metamorphopsia questionnaire (-6.90%, $p = 0.82$) and a significant improvement in the general vision and near activities VFQ-25 scores (+ 10.45%, $p = 0.036$, and +12.63%, $p = 0.048$%).
- At 2 months, there was a significant improvement in total M-CHART scores (-28.30%, $p = 0.036$), although, there was no difference between the two groups.
- At month-6, a trend was observed towards better total M-CHART scores in group 1 compared to group 2 (0.73 vs. 1.24, $p = 0.07$).

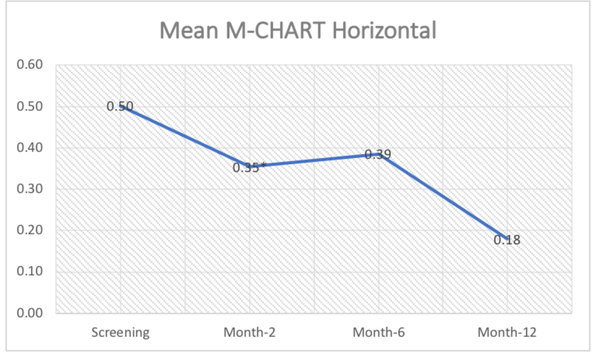

Figure2: Mean change in horizontal M-CHART scores from baseline to month-12 post-operatively.

CONCLUSION

Clinical and anatomical improvements were observed in both groups at month-6. Objective and subjective metamorphopsia showed a nonsignificant improvement at 6 months, while vision-related quality of life significantly increased. At 6 months, patients with VA 20/40 or better at baseline presented a trend towards less objective metamorphopsia compared to patients with VA 20/50 or worse at baseline. Additional research is ongoing to confirm these findings in a larger study cohort.

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