

Pars plana vitrectomy and removal of the internal limiting membrane in diabetic macular edema unresponsive to grid laser photocoagulation

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Purpose:

To evaluate the effectiveness of pars plana vitrectomy (PPV) with removal of the internal limiting membrane (ILM) in diabetic patients with macular edema unresponsive to grid laser photocoagulation.

Methods:

In this randomized controlled study, 24 eyes of 12 patients with diabetic macular edema unresponsive to grid laser photocoagulation were evaluated. PPV with ILM removal was performed randomly in one eye of 12 patients and taken as the study group; while, the untreated fellow eyes were taken as the control group. Main outcome measures were the foveal thickness changes measured with optical coherence tomography, preoperative and postoperative visual acuity. Mann-Whitney U, Wilcoxon and Chi-square tests were used in statistical analysis.

Results:

Mean follow-up was 9 ± 3.1 (range 6 to 12) months. In the study group, mean foveal thickness was 391.7 ± 83.8 mm preoperatively and 241.7 ± 45.2 mm postoperatively ($p=0.004$). In the control group, mean foveal thickness was 360.9 ± 130.9 mm preoperatively and 323.7 ± 107.6 mm postoperatively ($p=0.147$). Mean decrease in foveal thickness was 150 ± 100.1 mm in the study group and 37.1 ± 80.9 mm in the control group ($p=0.006$). In the study group, best-corrected logMAR visual acuity 0.41 postoperatively ($p=0.091$). In the ± 0.39 preoperatively and 0.52 ± 0.68 0.40 preoperatively \pm control group, best-corrected logMAR visual acuity was 0.44 0.45 postoperatively ($p=0.528$). In the study group, visual acuity \pm and 0.53 improved by 2 or more lines in 5 eyes (41.7%) and remained stable in 7 eyes (58.3%). In the control group, visual acuity improved by 2 or more lines in 1 eye (8.3%) and decreased by 2 or more lines in 3 eyes (25%).

Conclusion:

PPV with ILM removal appears to be an effective procedure in the treatment of diabetic macular edema unresponsive to grid laser photocoagulation. A further study with a large number of patients is required to assess the effectiveness and safety of this procedure.

Take-home message:

PPV with ILM removal was observed to be an effective procedure in the treatment of diabetic macular edema unresponsive to grid laser photocoagulation.

