

Internal limiting membrane (ILM)-peeling with indocyanine green (ICG) or trypan blue in macular hole surgery: A prospective randomized trial

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Purpose:

To investigate the influence of indocyanine green (ICG) or Trypanblue (TB) for ILM removal on visual and anatomical outcome in macular hole surgery.

Patients and Methods:

40 patients with idiopathic macular holes stages II-IV underwent pars plana vitrectomy with ILM-delamination. The patients were randomly divided into group I (20 patients) using 0.2 ml of ICG solution (0.05% dissolved in glucose 5%), and group II (20 patients) using TB (0.06%, Membrane Blue®) both under constant irrigation. Follow up examinations at 3 and 6 months included ETDRS visual acuity (VA), 70°- automated perimetry, SLO-microperimetry, optical coherence tomography, fluorescein angiography (FLA) and stereoscopic biomicroscopy.

Results:

Anatomical hole closure was observed in 84.21% in both groups. In group I VA increased > 1 line in 13 patients (68.42%), remained unchanged in 4 patients (21.05%) and decreased in 2 patients. In group II VA increased > 1 line in 17 patients (89.47%), remained unchanged in 1 patient (5.26%) and decreased in 1 patient (5.26%). There was no statistically significant difference between both groups. FLA showed cystoid changes around the macular hole in 10 patients (group I) and in 8 patients (group II) after 6 months. 1 patient of each group developed a postoperative retinal detachment. Paracentral scotoma were detected in 2 patients of group I and in 3 patients of group II in areas that were tested normally before surgery. The central scotoma caused by the macular hole persisted in 8 patients (42.11%) in group I and in 5 patients (26.32%) in group II after 6 months. Peripheral visual field defects were detected only in 1 patient of the ICG-group.

Conclusion:

For a safe ILM removal staining seems necessary. No evident difference with respect to functional or anatomical outcome between ICG and TB using the given concentration and application method could be detected.

