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Correlation between the dynamic postoperative visual outcome and the restoration of foveal microstructures after macular hole surgery

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Purpose: To analyze the long-term dynamic healing process of outer retinal changes for 1 year in patients who underwent a standard vitrectomy procedure for idiopathic macular hole (MH) repair.

Design: Retrospective, consecutive, observational case series.

Methods: Data were collected on 60 eyes of 56 patients (30 women, 26 men) that underwent successful pars plana vitrectomy (PPV) and internal limiting membrane (ILM) peeling for idiopathic MH from January 2011 to December 2012. The age distribution ranged from 56 to 85 years (mean: 64 years). Forty eyes underwent combined phacoemulsification, PPV, ILM peeling, and intraocular lens implantation; 20 preoperative pseudophakic eyes underwent PPV and ILM peeling only. The main outcome measures included logMAR best corrected visual acuity (BCVA) and macular microstructures determined by spectral-domain optical coherence tomography performed pre- and postoperatively during follow-up visits at 1, 3, 6, 9, and 12 months.

Results: One month after surgery, 24 eyes (40%) showed normal external limiting membrane (ELM), 36 eyes (60%) showed normal ELM at 3 months and 54 eyes (90%) showed normal ELM 12 months after surgery. Six eyes (10%) revealed a continuous ellipsoid zone (EZ) at 1 month, 18 eyes (30%) at 3 months and 48 eyes (80%) at 12 months post-operatively. There were no eyes with a disrupted ELM in the presence of an intact EZ line. The eyes with intact ELM and or intact EZ line showed better BCVA than eyes with defects in ELM or EZ line. On the contrary, glial cell presentation is significantly associated with worse post-operatively BCVA. However, the presence of foveal cystoid change is not significantly associated with post-operatively BCVA.

Conclusions: The ELM and EZ line at the fovea recovered and the presence of glial cells and cystoid space resolved gradually after surgery. The postoperative visual acuity was correlated with resolved glial cells and a restored ELM and EZ line.

Biography

Wen-Chuan Wu has completed his Medical Degree from Kaohsiung Medical University and Ophthalmology Training at Kaohsiung Medical University Hospital. He is the Chairman of Taiwan Macular Society. He has published more than 50 papers in reputed journals.

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