PO-17

Functional and morphological changes after vitrectomy in patients with idiopathic epiretinal membrane stage 4

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PURPOSE: To assess the effectiveness of vitrectomy (VPP) in treating stage 4 idiopathic epiretinal membrane (iERM) and identify potential biomarkers for postoperative functional improvement. A presentation of preliminary results from a prospective study.
METHODS: This prospective analysis will include all pseudophakic patients with stage 4 idiopathic epiretinal membrane (iERM) without concomitant ocular diseases who will be evaluated at the vitreoretinal clinic of the Eye Hospital, University Medical Center Ljubljana, over three years, with beginning in May 2024. All included patients will have undergone vitrectomy (VPP) with epiretinal and internal limiting membrane peeling. Preoperative and postoperative assessments (six months after VPP) will consist of best-corrected visual acuity (BCVA), optical coherence tomography (OCT), optical coherence tomography angiography (OCTA), macular autofluorescence (AF), microperimetry (MP), and multifocal electroretinography (mfERG). We will analyze changes in BCVA (Snellen), foveal avascular zone (FAZ) size, vascular density of the superficial (SCP VD) and deep capillary plexus (DCP VD), foveal and parafoveal retinal sensitivity, and P1 wave characteristics.
RESULTS: By February 2025, four patients met the inclusion criteria. The average preoperative BCVA was 0.45, improving to 0.65 after VPP. Two patients improved BCVA from 0.3 and 0.4 preoperatively to 0.9 and 0.7 postoperatively, while BCVA remained stable in two patients. Following VPP, there was a reduction in average central retinal thickness (388 μm vs. 249 μm), an increase in FAZ area and perimeter (0.0462 vs. 0.0534; 0.6158 vs. 0.9518), and a decrease in SCP VD and DCP VD both foveally (36.582 vs. 32.366 and 37.557 vs. 34.611) and perifoveally (33.011 vs. 28.581 and 38.897 vs. 34.233). Foveal and macular retinal sensitivity remained stable (20.90 vs. 20.95 dB; 23.7 vs. 23.4 dB). The morphology and distinctiveness of P1 waveforms on mfERG improved across the entire central retina.
CONCLUSIONS: The results suggest that functional and morphological improvements following VPP for stage 4 iERM are possible, despite stage 4 iERM being typically considered a poor prognostic factor for visual recovery. Given the variability in VPP outcomes, identifying potential biomarkers for predicting functional improvement is essential.

Funkcionalne in morfološke spremembe po vitrektomiji pri bolnikih z idiopatsko epiretinalno membrano stadija 4

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NAMEN: Oceniti uspešnost operativnega zdravljenja idiopatske epiretinalne membrane (iERM) stadija 4 z vitrektomijo (VPP) ter opredeliti biomarkerje pooperativnega funkcionalnega izboljšanja. Predstavitev prospektivne študije in delnih rezultatov študije.
METODE: V prospektivno raziskavo bomo vključili vse psevdofake bolnike z iERM brez pridruženih očesnih bolezni, ki bodo v treh letih, od maja 2024 obravnavani v vitreoretinalni ambulanti Očesne klinike, Univerzitetnega kliničnega Centra Ljubljana in pri katerih je bila opravljena VPP z luščenjem epiretinalne ter notranje mejne membrane. Pred- in po-operativno (6 mesecev po VPP) bomo opravili pregled najboljše korigirane vidne ostrine (BCVA), optično koherentno tomografijo (OCT), angiografijo (OCTA) in autofluorescenco (AF) makule, mikroperimetrijo (MP) in multifokalni elektroretinogram (mfERG). Analizirali bomo pred- in pooperativno BCVA po Snellenu, velikosti fovealne avaskularne cone (FAZ), gostoto žilja povrhnjega (SCP VD) in globokega kapilarnega pleteža (DCP VD), fovealno in parafovealno občutljivost mrežnice ter P1 val.
REZULTATI: Vključitvenim kriterijem so do februarja 2025 ustrezali 4 bolniki.
Povprečna BCVA pred operacijo je bila 0,45, po VPP 0,65. Pri dveh bolnikih je prišlo do izboljšanja BCVA iz preoperativne

0,3 in 0,4 na 0,9 in 0,7, pri dveh je BCVA ostala enaka. Po VPP je bila prisotna manjša povprečna centralna debelina mrežnice (388 μm vs. 249 μm), večja površina in obseg FAZ (0,0462 vs. 0,0534; 0,6158 vs. 0,9518, manjši SCP VD in DCP VD fovealno (36.582 vs. 32,366 in 37,557 vs. 34,611) in perifovealno (33,011 vs. 28.581 in 38,897 vs 34,233), fovealna in makularna občutljivost mrežnice sta ostali stabilni (20,90 vs. 20,95 dB; 23,7 vs. 23,4 dB), boljša je bila oblikovanost in prepoznavnost posameznih P1 valov na mfERG po celotni površini centralne mrežnice.
ZAKLJUČKI: Rezultati nakazujejo, da je funkcionalno in morfološko izboljšanje po VPP zaradi iERM možno tudi pri bolnikih z iERM stadija 4, ki sicer velja za slab napovedni dejavnik za izboljšanje vida. Izidi VPP so variabilni, zato je ključna opredelitev potencialnih biomarkerjev funkcionalnega izboljšanja.