Abstract 22

"ILM PEELING IN VITREOMACULAR TRACTION SYNDROMES".A REAL FUNCTIONAL AND ANATOMICAL BENEFIT OR AN ATTRACTIVE VIDEO CLIP

Shaarawy A.*, Bessa A., Abou Shousha M.

Alexandria University ~ Alexandria ~ Egypt

Introduction:

Pars plana vitrectomy and inner limiting membrane (ILM) peeling are standard procedures for macular hole and epiretinal membrane surgery. However, ILM peeling is known to cause mechanical traumatic changes to the retinal nerve fiber layer. Recently there have been numerous reports of anatomical changes in the macula after ILM removal. A comprehensive review of the literature. The earliest change in the macula after ILM peeling is post-operative swelling of the arcuate retinal nerve fiber layer (SANFL), which disappears within the 3 month; the swelling is not detected on biomicroscopic fundus examination but appears as hypoautofluorescent arcuate striae in the macular region on infrared and autofluorescence imaging, with corresponding hyperreflectant swelling demonstrated on spectral-domain optical coherence tomography (OCT). SANFL is followed by dissociated optic nerve fiber layer defect, faintly visible on fundus examination and corresponding on OCT to "dimples" in the inner retinal layers. The en face tomographic aspect of this defect appears as concentric macular dark spots. Post-operative foveal displacement toward the optic disc might be responsible for the stretching and thinning of the retinal parenchyma in the temporal subfield and the thickening of the nasal macula.

Materials and methods:

This was a randomized, prospective, comparative study. 40 eyes were randomized to undergo peeling of the posterior hyaloid (PH group) or complete ILM peeling group. Foveal and perifoveal retinal sensitivity, visual acuity, and central macular thickness were the main outcome measures.

Results:

Parafoveal retinal sensitivity exhibited a significant improvement in both the PH and complete peeling groups (+2.43 ± 0.82 dB and +1.79 ± 0.86 dB, respectively; P = 0.037). Significant improvements were observed in both visual acuity and central macular thickness in both groups. No cases of epiretinal membrane recurrence were observed in the PH group.

Both the PH and complete peeling surgical techniques are safe and yielded good anatomical and functional results; however, a significant difference in favor of PH was found in relation to the best-corrected visual acuity and perifoveal retinal sensitivity. Posterior hyaloid dissection allowed the anatomical restoration of the foveal architecture in most vitreomacular traction syndrome cases without signs of stiffening or ILM fibrosis over a follow-up period of 1 year.

Conclusions:

1.Perfect Anatomical and functional results can be achieved by posterior hyaloid detachment without ILM peeling in VMT syndromes
2.Foveal Sparing ILM peeling achieve significant better anatomical and visual results
3.ILM peeling in VMT syndromes may be associated with significant complications including

DONFL,phototoxicity and macular hole formation

Sources:

Swelling of the arcuate nerve fiber layer after internal limiting membrane peeling.
Clark A, Balducci N, Pichi F, Veronese C, Morara M, Torrazza C, Ciardella AP.
Retina. 2012 Sep;32(8):1608-13. doi: 10.1097/IAE.0b013e3182437e86.
PMID: 22495325
Internal retinal layer thickness and macular migration after internal limiting membrane peeling in macular hole surgery.
Faria MY, Ferreira NP, Mano S, Cristóvao DM, Sousa DC, Monteiro-Grillo ME.
Eur J Ophthalmol. 2018 May;28(3):311-316. doi: 10.5301/ejo.5001066. Epub 2017 Oct 16.
PMID: 29108397
Evaluating inner retinal dimples after inner limiting membrane removal using multimodal imaging of optical coherence tomography.
Liu J, Chen Y, Wang S, Zhang X, Zhao P.
BMC Ophthalmol. 2018 Jun 27;18(1):155. doi: 10.1186/s12886-018-0828-9.
PMID: 29945560 Free PMC article.
Involvement of Anoikis in Dissociated Optic Nerve Fiber Layer Appearance.
Ikeda T, Nakamura K, Sato T, Kida T, Oku H.
Int J Mol Sci. 2021 Feb 9;22(4):1724. doi: 10.3390/ijms22041724.
PMID: 33572210 Free PMC article. Review.
Vitrectomy with internal limiting membrane peeling versus inverted internal limiting membrane flap technique for macular hole-induced retinal detachment: a systematic review of literature and meta-analysis.
Yuan J, Zhang LL, Lu YJ, Han MY, Yu AH, Cai XJ.
BMC Ophthalmol. 2017 Nov 28;17(1):219. doi: 10.1186/s12886-017-0619-8.
PMID: 29179705 Free PMC article. Review.