Ogugua Okonkwo et al., J Clin Exp Ophthalmol 2018, Volume 9
DOI: 10.4172/2155-9570-C1-078

19th Global Ophthalmology Summit

February 26-27, 2018 | Berlin, Germany

Outcome of inverted internal limiting membrane flap technique for chronic macular holes

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Idiopathic macular holes (MHs) are an important cause of vision loss. Since Kelly and Wendel first demonstrated that MHs could be treated, with effective closure of the MH achieved using vitrectomy techniques, many more refinements have trailed the evolution of MH surgery and a majority of eyes can have successful closure of the MH and improvement in functional vision. However, higher rates of MH post operative non-closure are associated with highly myopic eyes, retina detachments, reoperations, chronicity and large size. The inverted internal limiting membrane (ILM) flap technique (in which a piece of peeled ILM tissue, attached to the edges of the MH is trimmed and then flipped over the MH) has been demonstrated by several studies to provide better rates of anatomical closure in larger sized MHs >400 microns. This inverted ILM flap technique is therefore preferred for managing the more difficult MHs. We reviewed the anatomical and functional outcome of MH surgery using the inverted ILM flap technique for chronic large MHs. A retrospective review of a consecutive series of chronic MHs having an MH base diameter equal to or greater than 1000 microns and with symptom duration equal to or greater than three months was done. The primary outcome measures were anatomical MH closure and change in best snellen visual acuity. The secondary outcome measure was the presence of the outer retina on SD-Optical Coherence Tomography (OCT), i.e. the external limiting membrane (ELM) and the ellipsoid zone (EZ). Seven eyes of patients that underwent surgery between April 2015 and January 2017 met the study criteria. Their mean age was 65.7 years; mean MH base diameter, 1241 microns and mean symptom duration at presentation, 19 months. All eyes had an inverted ILM flap technique on which ILM staining was done using brilliant blue G. ILM was then peeled and inverted into the MH. Post-operative examination consisted of a snellen visual acuity test, intraocular pressure, slit lamp biomicroscopy and dilated funduscopy. Post operative SD OCT was done during months the first, second and third months. OCT Angiography was performed in two out of seven eyes. Mean follow up was 10.6 months. Post operatively, all seven eyes had closure of the MH and five eyes had improvement in vision while in two eyes post-operative vision remained same as pre-operative. There was no vision loss in any of the eyes. Also, three eyes had microstructural repair of the outer retina with presence of ELM and EZ. This study demonstrates a functional benefit in a majority of the eyes in which the ILM flap technique was used in the repair of large chronic MHs, which falls into the category of MHs with a poorer post-operative outcome.

Biography

Ogugua Okonkwo is a Consultant Ophthalmic Surgeon/Vitreoretina Specialist. He is a Member of the Ophthalmological Society of Nigeria (Chairman of Scientific Program Committee during the 2012 congress of the society). Currently, he is working on a project aimed at improving vitreoretina services and training in Sub-Saharan Africa.

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