A Closer Look

The Latest Development in Maculopathy Treatment

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The retina is like a camera film: it functions by capturing the light from objects. The image directed onto the retina is then transmitted to the brain where it is processed. Structurally speaking, the retina is more like a piece of brain tissue with no capacity for self-regeneration or major transplantation. In the centre of the retina is the macula, which is responsible for central and colour vision. If left undiagnosed and untreated, all types of maculopathies can lead to severe consequences, e.g. blurred central vision, central visual field defects or distorted images. Some conditions are asymptomatic, especially when they affect one eye only or are in slow progression. Thanks to the advances in clinical technology and a better understanding of macular diseases, those that were considered incurable in the past can now be treated by surgery.

Treatment of Macular Hole

A macular hole is a break of retinal tissues in the centre of macula. It is mostly age-related or caused by severe myopia. The standard treatment is pars plana vitrectomy with removal of the posterior hyaloid, followed by removing the internal limiting membrane (Photo 1), then repositioning part of the retinal internal limiting membrane onto the macula and gas injection. Patients are not required to maintain a facedown posture post-operatively. The success rate is close to 100%. (Kwok AKH, et al. British Journal of Ophthalmology, 2003 & 2004)

Treatment of Macular Epiretinal Membrane

Proliferation of macular epiretinal membrane (Photo 2) is one of the most common eye diseases in Hong Kong, the treatment of which is to remove the vitreous body and epiretinal membrane. Outcome can be improved with internal limiting membrane removal. Post-operatively, facedown posture is not required. The success rate after first surgery is close to 100%. (Kwok AKH, et al. American Journal of Ophthalmology, 2004)

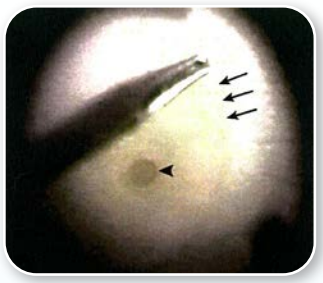

Photo 1:
During surgery: the internal limiting membrane near the macular hole (arrow) is lifted (arrow) using an intraocular forceps

Photo 2:
Macular epiretinal membrane disease in a patient with severe myopia (before surgery)

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Treatment of Maculoschisis (Macular Splitting)

Those with myopia of over 6 dioptres have severely elongated eyeballs, which stretch thin the macula. The macular split could be aggravated due to further stretching by abnormal vitreous body and epiretinal membrane, leading to loss of vision. The split may deteriorate into macular holes and even macular retinal detachment (Photo 3A) if left untreated. With OCT, it can now be detected and diagnosed in its early stage with high accuracy. The treatment is pars plana vitrectomy with removal of the posterior hyaloid, epiretinal membrane and internal limiting membrane, followed by repositioning part of the retinal internal limiting membrane onto the macula and gas injection. They can resolve maculoschisis in most patients (Photo 3B). (Kwok AKH, et al. British Journal of Ophthalmology, 2005)

(A) (B)

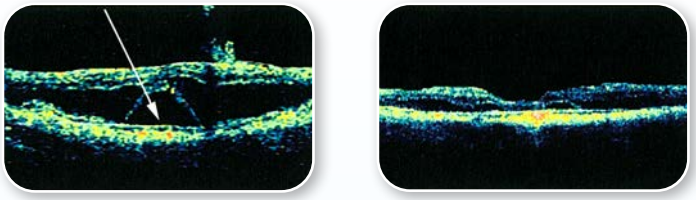

Photo 3:
Optical Coherence Tomography (OCT):
(A) Extensive macular split, macular detachment and loss of macular depression are detected under OCT before surgery (arrow)
(B) Macular split improves significantly 6 months after surgery

Treatment of Neovascular Membrane caused by Age-Related (Photo 4) and Severe Myopic (Photo 5) Macular Degeneration

Photodynamic therapy was once the standard treatment of neovascular membrane caused by age-related and severe myopic macular degeneration. It has a limited effect of maintaining the remaining vision or deterring vision loss. Currently, intraocular injection (incl. Lucentis, Eylea, Vabysmo, Beovu and steroid Ozurdex) is the common practice. It can restore vision to a certain extent in most patients. The procedure is safe. Side effects are rare. (Kwok AKH, et al. Hong Kong Medical Journal, 2007; Retina, 2016)

Photo 4:
Age-related macular degeneration – bleeding

Photo 5:
Severe myopic macular degeneration