New Frontiers in Macular Surgery

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Retina is like the film in the camera. It captures the light image and sends the signals to the brain. Structurally it is exactly a piece of brain, that cannot be self-regenerated nor transplanted. Any macular disease should be detected and treated early and appropriately. Macula is the very centre of the retina, that gives us the central crispy vision as well as colour vision. Patient with macular diseases may complain of blurred central vision, central scotoma or metamorphopsia. Some patients, however, may be entirely asymptomatic especially if the involvement is monocular and the progression is gradual. With the advance of instrumentation and understanding of macular diseases, a lot of untreatable macular diseases in the past can now be successfully operated, with restoration of the important central vision.

Macular hole surgery

Macular holes are characterised by the absence of neurosensory retinal tissue at the fovea. Most are due to aging and high myopia. It can be operated on with pars plana vitrectomy, removal of the prefoveal cortical vitreous, fluid-gas exchange and postoperatively put patients in prone position. Recent studies have shown that the success rate is more than 90% in both senile and myopic macular holes, with the new surgical technique involving removal of the internal limiting membrane (Figure 1). For those who are less compliant to the positioning, using of silicone oil instead of gas can be considered.

Epiretinal membrane surgery

Epiretinal membrane (Figure 2) is a common disease in Hong Kong. Surgery consists of vitrectomy and membrane removal. With recent advances like internal limiting membrane peeling, recent studies have shown about 80% patients with significant visual improvement without recurrence after primary surgery.

Maculoschisis surgery

In high myopes of more than -6 diopter, the eyeballs are severely elongated with the retina stretched. With the additional traction force from the abnormal vitreous and/or epiretinal membrane, the macular neural tissue splits with loss of visual function. If it is not treated early and appropriately, it will progress to the formation of macular hole (Figure 1) and retinal detachment. With the advent of optical coherence tomography (Figure 3), the disease now can be detected early and precisely. With surgery like pars plana vitrectomy, removal of the prefoveal cortical vitreous and fluid-gas exchange, study has shown 100% success with complete foveal reattachment in 77.8% eyes and partial resolution in 22.2% eyes.

References