GETTING SMALLER ALL THE TIME

Hadi Zambarakji, Consultant Vitreoretinal and Cataract Surgeon at The Wellington Hospital, discusses recent advances and developments in the field of vitreous and retinal surgery

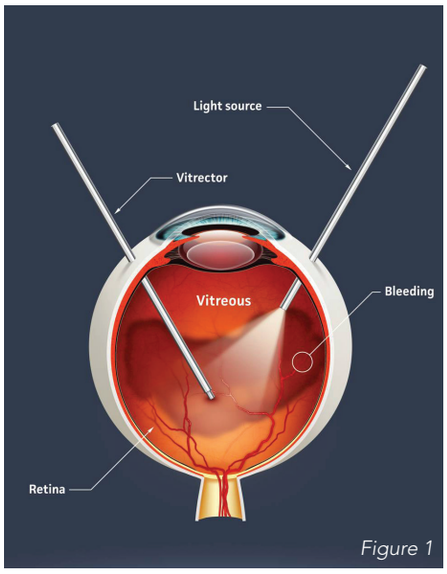
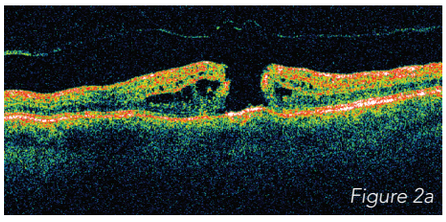


Figure 1: A schematic of an eye with haemorrhage in the vitreous cavity being removed during a vitrectomy procedure



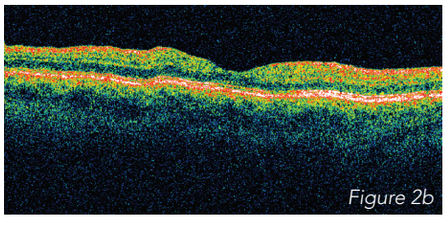


Figure 2: A scan showing a hole in the central retina (macular hole) before (a) and after surgery (b). The hole is closed after surgery and the vision returns to driving standards if the surgery is performed soon after the onset of symptoms

Keyhole surgery is not a new concept, and as many people know, has become increasingly common medical practice. In ophthalmology, keyhole vitrectomy surgery (that is, surgery of the vitreous and retina) has been developed since the late 1960s.

Vitrectomy (Figure 1), then, is the removal of the vitreous jelly of the eye. This technique was developed because there was no way of treating diseases of the back of the eye (the retina) without further damaging it. It is performed through an area of the eye called the pars plana, which is just in front of the retina and just behind the iris.

Conventional vitreoretinal surgery is performed though three sclerotomies (keyholes), each measuring approximately 1.15 mm. This gives access to the vitreous and retina thus allowing the reattachment of a retinal detachment, closure of a macular hole (Figure 2a & b) or peeling of an epiretinal membrane using appropriate instrumentation (Figure 3).

One of the most innovative techniques in recent years has been the use of small incisions for performing the keyholes, each measuring approximately 0.75 mm. These are shaped in such a way that they form a tunnel into the outer coat of the eye and are small enough to self-seal without the need for suturing. Such self-sealing small-sized keyholes result in less post-operative discomfort, faster rehabilitation and less induced distortion of the eye (that is less astigmatism) (Figure 4).

This change in incision size reflects the desire to transform any surgical procedure into a less invasive procedure whist achieving the same or better outcome, which is an important general principle that applies to most surgical specialties including hernia repair, gall bladder surgery, colorectal surgery to name just a few. In our experience, most vitreoretinal procedures can be done through small gauge vitrectomy instruments.

But what about anaesthesia for vitrectomy surgery? We generally advocate local anesthesia, which also supports an earlier recovery thus often avoiding overnight stay in hospital. The procedure may also be supplemented by light sedation given under the supervision of the Consultant Anesthetist if considered clinically indicated. The vast majority of patients treated under local anesthesia report very low pain scores, prefer the faster recovery immediately after surgery and the avoidance of general anaesthesia.

At the Wellington's Eye Unit, we utilise the latest advances and techniques including small incision vitrectomy surgery to effectively treat a wide range of retinal conditions, thus reducing recovery time and allowing an early return to regular daily activities.

For more information, call 020 7483 5148 or visit www.thewellingtonhospital.com

Figure 3: A colour image of the retina shows distortion of the retina by a fine membrane on the surface (an epiretinal membrane)

Figure 4: One day after small gauge vitrectomy surgery, it is virtually impossible to see the 'keyhole' through which surgery was performed to peel the epiretinal membrane (same patient Figure 3).