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WHATS NEW IN OPHTHALMOLOGY

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WHATS NEW IN .....

Advances in pharmacological agents and surgical and laser technology have had significant effects on the practice of ophthalmology in recent years.

The widespread recognition and use of anti-vascular endothelial growth factor (anti-VEGF) drugs, as intravitreal injections, started with the treatment of age related macular degeneration (ARMD) several years ago. This is now standard treatment and has improved the visual prognosis for those affected with 'wet' ARMD, previously an untreatable and blinding condition. In the past two years these treatments have been discovered to be effective in different diagnoses including diabetic macular oedema (DMO) and retinal vein occlusions. These conditions cause blinding macular oedema and current evidence indicates that they are treatable with anti-VEGF injections. These drugs are administered by intra-vitreal injection, as an out-patient procedure; evidence to date suggests that several injections will be required for each patient over at least two years and possibly longer.[1-4] There is also an increasing body of evidence to support the use of intravitreal steroids in the treatment of macular oedema due to retinal vein occlusions.[5] The steroids are being delivered as small, slow release, implants – this is an exciting development and it is likely that these will become more important for all forms of intra-vitreal treatments.

Corneal graft surgery can restore vision to patients with disorders causing corneal scars or opacities. In the past the surgery was performed with a full thickness graft (ie replacing all the layers of the cornea), despite the pathology sometimes being isolated to one layer. For example, the scar may have only affected the endothelium of the cornea, a layer that is only one cell thick. In recent years surgical and laser advances have made it possible to dissect off the endothelium, the inner-most layer of cells in the cornea, in isolation and replace this alone with a thin specific endothelial donor layer. This technique provides quicker recovery, less morbidity and reduces the probability of graft rejection. This technique can be performed manually or can be done using a highly specialised laser called a femtosecond laser which can be used as a surgical 'knife'.[6-7]

Femtosecond lasers are new, powerful and precise lasers which deliver optical pulses that have a variety of roles within ophthalmology. As well as corneal graft surgery they have been used previously in refractive corneal surgery and are also starting to be used in cataract surgery. Recent studies have shown that they can be used to open the capsule of the lens (capsulorrhexis) as part of cataract extraction using phacoemulsification. Previously this step, where a circle is torn in the lens capsule, was done by hand, but the results with the femtosecond laser are of more consistent, perfect circles, which are stronger and less likely to result in complications.[8] However, the process takes longer and the overall advantages are yet to be fully ascertained.

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