What is new in cornea?
This article is a roundup of clinically relevant issues in the management of the cornea, with a practical bias towards clinical practice.

Lipid keratopathy managed with electrolysis cauterization.
Lipid keratopathy usually occurs in corneas with deep stromal vascularisation, typically herpetic corneas or vascularised transplants. Lipid keratopathy has a typical off white appearance with fronds radiating out from the blood vessel involved, with a clear zone separating the lipid from the blood vessel. The lipid will reduce vision both as a barrier to light, and due to secondary corneal irregularity. A study presented in Cornea journal looked at 3 patients, and found that electrolysis was as effective as fine needle diathermy in all 3 patients in eliminating corneal vascularisation. A further touch up treatment was required in 2 patients at 9 and 10 months. No astigmatism was induced.
Comment: Treatment options to eliminate corneal vascularisation include the application of laser, fine needle diathermy or electrolysis. This method of electrolysis compares favourably with fine needle diathermy, and allows for another option in the treatment of deep corneal vascularisation. A less invasive approach is the application of corneal laser.

Amniotic membrane transplantation and stromal puncture for painful bullous keratopathy.
Bullous keratopathy occurs when the endothelium of the cornea fails, and bullae which arise can be both extremely painful and distressing. The use of amniotic membrane for painful bullous keratopathy is a relatively new advance, which is less invasive than penetrating keratoplasty, evisceration or enucleation. This study reports the use of amniotic membrane in 5 patients with corneal edema. After surgery, the corneal surface remained smooth, and patients were symptom free.
Comment: Amniotic membrane is a fine tissue obtained from the lining of the placenta. It contains multiple properties which have proven useful in the management of the conjunctiva and external eye. In bullous keratopathy, the amniotic membrane becomes integrated into the cornea and serves to act as a physical barrier, allowing epithelium to grow over the top of the membrane, and reducing the passage of fluid into the epithelium, preventing bullae. This is a very useful technique in eyes with...
limited potential, where pain originates from the cornea. It allows the resolution of pain, retention of the eyeball and is a much less invasive procedure. I find this option very beneficial for patients with corneal pain and limited vision potential, and infinitely preferable to penetrating keratoplasty.

Intraoperative photograph showing amniotic membrane applied to cornea. Note the edge of the amniotic membrane overlying the conjunctiva

**Bilateral corneal edema in a patient with herpetic endotheliitis**

Cornea. 26(3):365-367, April 2007

A case report of a 70 year old male presenting with bilateral circumferential bullous corneal edema progressing centrally was investigated and confirmed to be herpetic disease of the cornea, primarily affecting the corneal endothelium. This is termed herpetic endotheliitis. This patient went on to develop corneal edema requiring transplantation.

**Comment**: It is atypical to present with bilateral herpetic disease of the cornea, and herpetic disease presenting as endotheliitis unusual. The double presentation of bilateral herpetic endotheliitis is uncommon, and serves as a useful reminder that herpetic disease of the cornea can present in many different ways, and can be blinding.

Deep focal endotheliitis in Herpetic disease
Safety of UV-A cross linking
The use of Riboflavin / UVA 370nm wavelength to induce corneal cross linking was assessed with a view to consideration of UV photochemical (free radical) damage. They found that at the endothelial level, irradiance damage is lower than the damage threshold. However at the stromal level, irradiance of 3mW / cm2 induced damage is well above the threshold for keratocyte damage which is 0.45mW/cm2. Correspondingly, the stromal population of keratocytes is depopulated to a level of 300microns. Repopulation is said to occur, and the cornea should not be less than 400microns thick to reduce the risk of endothelial damage.

Comment: Corneal collagen cross linking is a novel idea which has had some success in reducing irregular astigmatism of the ectatic cornea. No treatment is without risk, and although risks of blindness are very low, long term effects of intense UV light on the cornea are not fully understood, and the future will reveal if any long term effects lead to vision loss. Careful selection of patients and full informed consent remains a priority.

Intraoperative photograph of UVA application for collagen cross linking