Equine recurrent uveitis (also referred to as ERU, moon blindness, iridocyclitis, periodic ophthalmia) is a devastating eye complaint affecting horses worldwide although its impact to the UK horse industry is probably underestimated, partly because accurate prevalence rates of this condition in this country are not known. In the United States, where relatively accurate estimates of this condition’s prevalence are known, the cost to the equine industry is put at up to one billion dollars annually (based on veterinary fees, reduced sale value, time off work, decreased performance etc).

The hallmark of ERU is the repeated nature of inflammatory attacks within the eye that develop weeks or months after an initial episode of uveitis (intraocular inflammation) has subsided. There are many documented causes of uveitis including eye trauma, corneal disease, infectious processes (such as foot and teeth abscesses) and parasites. Thankfully, most of these inflammatory attacks are one off events which are usually managed medically and for which there are no long term consequences for the horse. However, for a number of cases this initial inflammatory attack is the prelude to repeated attacks, often of mounting severity, which can damage the intricate workings of the eye leading to blindness through the development of ocular pathologies including retinal detachment, cataracts and glaucoma. ERU is the most common cause of blindness in the horse.

The typical form of uveitis which we see in the UK appears to be anterior uveitis which involves the anterior (or front) region of this vascular zone. Typical signs of an inflammatory episode involving this region include swollen eyelids, sensitivity to light, a cloudy cornea, colour changes in the iris, a constricted pupil, material within the front (anterior) chamber of the eye (such as blood, fibrin or pus), a reddening of the conjunctiva, a yellow-green vitreal discoloration and pain.

There are however two other less well recognised forms of the condition seen in the UK. These are insidious and posterior uveitis. Insidious type ERU is most commonly seen in Appaloosa and Draft type breeds and as its name suggests, the clinical symptoms are much less obvious than in the classical type ERU. Rather than having acute painful attacks followed by periods of apparent quiescence, a low grade smoldering-like inflammation establishes itself within the eye with clinical symptoms (such as glaucoma or cataract formation) only becoming apparent at a late stage in the disease process. For many of these horses, owners are unaware of any problems until late in the disease process.

The third form is posterior uveitis where signs of disease are isolated to the back region of the eye. Retinal inflammation and detachments may be noted on ophthalmic examination.

Uveitis attacks are typically treated with anti-inflammatory medications (which are the biological 'fire extinguishers' of inflammation). Corticosteroid based medicines (prednisolone, dexamethasone) are typically the preferred therapeutics and can be given by a variety of routes (eye drops, injections and orally) although these medicine should only be given under veterinary supervision as about 1/3 of ERU cases will develop a corneal ulcer at some stage, and for which the use of steroids can lead to significant complications. Atropine eye drops are also used to relax the musculature of the ciliary body (which is thought to improve comfort levels in an inflamed eye) and, as importantly, to constrict openings within the blood vessels of the uveal layer which makes it harder for inflammatory elements to enter the eye. Non steroidal medications (such as Finadyne) are often prescribed to complement anti-inflammatory eye medications. The use of indwelling eyelid lavage kits is a useful aid in the application of eye medications to a resistant patient.

Although the signs of acute uveitis typically resolve within 14 days, anti-inflammatory medication should be continued for a full 4 weeks beyond the apparent resolution of symptoms to fully extinguish inflammation within the eye (which is thought to minimise the likelihood of recurrent attacks)

The last decade has seen tremendous advances in the treatment of ERU. Sustained release medical implants containing cyclosporine, a potent suppressor of some key elements of the immune system (this drug is used in humans to prevent organ rejection following transplant surgery), have been developed at the University of North Carolina. Given the nature of the drug, it is not possible for cyclosporine to absorb through the outer barriers of the eye (making cyclosporine cream of no use in this condition) hence the implant is inserted beneath the sclera from where the drug can diffuse in high concentrations into the centre of the eye. This procedure is usually performed under a short general anaesthetic and on occasions in the standing sedated patient. The implant, once in place, is a very effective suppressor of inflammatory attacks (in this sense cyclosporine is functioning as a ‘fire retardant’). A sobering statistic is that 56% of horses with ERU will lose sight in the affected eye.
within two years of the onset of the condition whereas 86% of horses with an implant will be visual at two years. The research's who have developed the implant report that the horses they have treated had suffered, on average, one flare up every 2 months prior to the implant and less than one flare up per year after implantation. Overall, it is felt that 80% of horses will benefit from having an implant over 2-3 years. The implants themselves are designed to supply medicines for a little over 3 years after which time some patients may need a repeat implant, however, following such a long period of inflammatory control ERU has appeared to completely resolve in some cases despite the eventual depletion of the implant. The second approach to controlling ERU, particularly in those areas where chronic leptosirosis infection is considered to be significant factor in the disease, is to undertake a near total vitrectomy, performed under general anaesthesia. This surgery involves inserting a small rod like device that cuts and aspirates the jelly (or vitreous) body which occupies the majority of the internal eye space. Inflammatory cells and leptospire bacteria can reside in the vitreous and their removal can therefore help eliminate the triggers for ongoing inflammatory attack.

Top: Equine recurrent uveitis case, note iridal adhesions, focal cataract and damaged granula iridica.

Bottom: Cyclosporin implant being inserted into a scleral pocket at the eye clinic.

Above: ERU case. Note the striking yellow discolouration of the tapetal reflex typical of vitreal involvement.