





## Case Study - Seeing Red

'Red', a 17 year-old Welsh Cob gelding was referred to us in March 2011 for examination of 12 day old corneal ulcer which had been poorly responsive to medication. Upon initial presentation there was marked eyelid swelling, blepharospasm, conjunctivitis and epiphora of the right eye consistent with severe ocular pain. A focal deep ulcer was surrounded by diffuse corneal oedema (figure 1), with significant aggressive deep neovascularisation at the ventral conjunctival scleral junction. Closer inspection of the anterior chamber of the eye with a slit-lamp revealed evidence of significant uveitis, with an extensive fibrinous mesh-like network within the anterior chamber (aqueous flare) and a miotic pupil. Fluorescein staining was positive. A corneal scraping revealed large numbers of fungal hyphae and small numbers of cocci. Subsequently, *Aspergillus* spp. were cultured, confirming the involvement of fungus in this ulceration. 'Red' was hospitalised and started on intensive treatment using a sub-palpebral lavage kit to facilitate treatment with frequent (every 2-4 hours) topical medications comprising: enilconazole (anti-fungal), chloramphenicol, serum and EDTA (both anti-collagenases), and atropine. Intravenous flunixin meglumine was also given in the early stages.

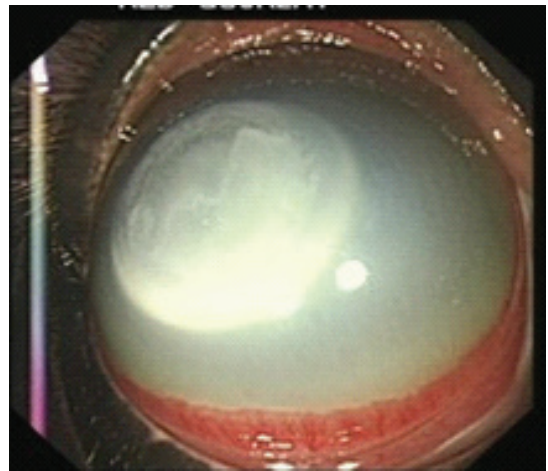


Figure 1: Image of right corneal surface at admission

Treatment was protracted over the following few weeks but there was a gradual improvement in the appearance of the lesion with ingress of healthy stroma circumferentially and increasing neovascularisation. By one month, only a small (2mm) circular descemetocoele remained at the 12 o'clock position within the original area of ulceration (figure

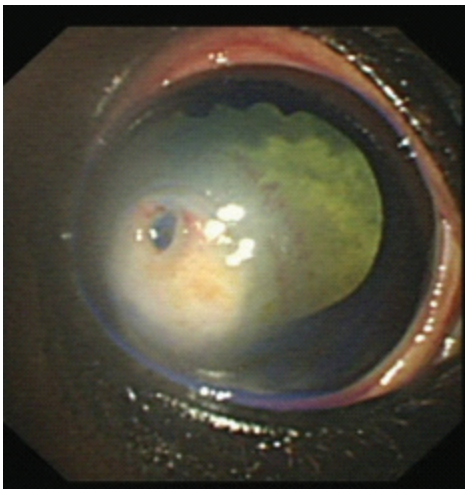


Figure 2: Image of right corneal surface during healing when the lesion had reached a plateau. Note the deeper area at 12 o'clock

2). We placed a contact lens to protect the descemetocoele, as the owners were keen to avoid surgery. The remainder of the ulcer had healed well, leaving a residual circular 'leukoma' of scar tissue. Although the lesion appeared to plateau, causing us to consider surgery to facilitate healing, with time this continued to reduce in size until it filled completely with scar tissue. Red was discharged three months after admission. With the exception of a focal thick scar the overall result is good.

This case demonstrates the aggressive and often protracted nature of fungal keratopathy. As in this case, significant corneal scarring will often remain. Fungal ulceration is thankfully rare in the UK and carries a guarded prognosis due to the affinity of fungi for the deepest layer of the cornea (Descemet's membrane) and their ability to retard neovascularisation which compromises the penetration and thereby efficacy of topical antifungal agents. The fungal agents *Aspergillus* spp. are particularly associated with severe deep ulcerative disease, secondary

stromal abscessation and often a poor visual outcome. In the USA, particularly in humid states like Florida, fungal keratopathy is very common causing a variety of clinical pictures from very mild to more severe ulceration as in this case.

Be on the look-out for fungal keratopathy especially if, despite appropriate medical therapy of an eye, you are having little resolution or you feel the case is going backwards after initial improvement. Performing a corneal scrape is always important in these aggressive ulcers as specific agents, whether they be bacterial or fungal, can be identified and targeted specifically.

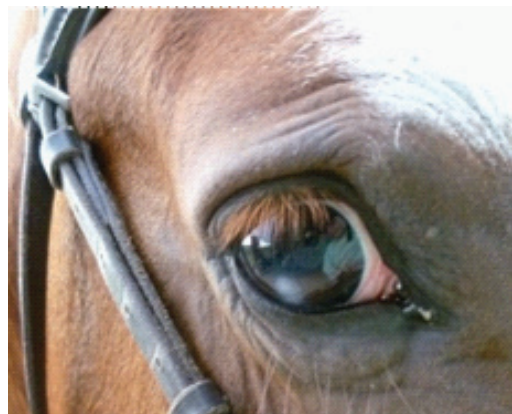


Figure 3: End result. Eye pain free with a residual scar. This will have minimal effects on vision

## Computed Tomography: your questions answered!

We've waited a long time for it, but it's here and proving very useful! The Dick Vet Equine Hospital is one of a few hospitals in the world able to perform computed tomography (CT) imaging in the standing horse.

### What exactly is CT and what are its advantages over other diagnostic methods?

CT uses X-ray technology to acquire high definition 1-3mm 'bacon-slice' images through the region of interest. This high definition along with the ability to create computer generated 3-D image reconstruction makes this an extremely valuable diagnostic tool. The standing unit we have at the Dick allows us to image the skull, nasal passages, sinus cavities, teeth and cervical vertebrae of adult horses. These regions have historically been difficult to image effectively with conventional imaging methods, being prone to artefacts and shadowing from overlying structures.



Figure 1: Image of the skull showing the teeth.

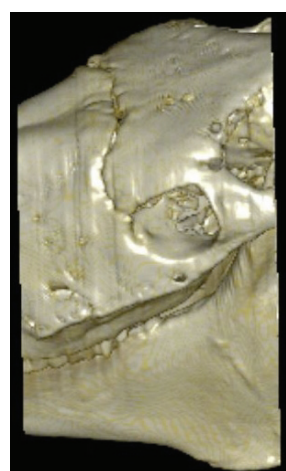


Figure 2: Skull fracture over the frontal suture lines.

### How does standing CT work?

The horse stands on a mobile hovercraft-like platform, allowing us to move the head smoothly through the gantry and to acquire the images quickly and efficiently without the need for general anaesthesia (Fig.1). For example, the entire dental arcade can be imaged in around 40 seconds. Horses are sedated as if they were having routine radiography or ultrasonography, and tolerate the procedure very well.

### Is it useful?

Over the past year CT has proved invaluable in some of our numerous dental and sinus cases, allowing unabridged diagnosis and accurate surgical planning. For example it has been decisive in determining whether or not to remove teeth in sinusitis cases with equivocal standard radiography findings. We have also used it to great effect in skull fractures (Fig. 2), middle ear disease, and head shakers.

## Staff Profile - David Pearce, Senior Groom

For our regular horse-owning clients, Davie Pearce may be a more familiar face than some of the vets! Davie has been a groom at the Easter Bush Campus since 1986. He grew up locally, on a farm near Bathgate, and was involved in riding and training ponies from his earliest days. After leaving school he worked on estates on Arran and in Ireland as a gamekeeper before taking up a position as Huntsman for the Buccleugh hunt in the Borders. Injury led him to seek alternative employment and his move to Easter Bush. When he started as a groom at the Equine Hospital in the mid-1980s, the team included such stalwarts as Bruce McGorum and Karen Blissitt, as well as colleagues who have moved on, such as Tina McGregor, and the recently deceased Joe Fraser. His responsibilities include caring for both horses and farm animals being treated at the Dick Vet Equine and Farm Animal Hospitals, transporting some client-owned horses locally and looking after our own small herd of teaching horses. Davie's main interest outside work remains horses, and he is a keen breeder and competitor at horse-shows.



Over the quarter of a century that Davie has worked at the Dick Vet he has seen many changes. As far as students are concerned, the most obvious changes have been in group sizes, gender and accents! Davie's contacts and knowledge of the local equine scene have long been an important part of our service and he enjoys being able to combine his main interest – horses – with his job

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## Our Clinicians

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Professor Paddy Dixon  
MVB, PhD, MRCVS

Dr Martin Weaver  
BVMS, PhD, DrMedVet, DVR, MRCVS

Safia Barakzai  
BVSc, MSc, Cert ES (Soft Tissue), DESTS, Dipl. ECVS, MRCVS

Russell Parker  
BVSc, MRCVS

## Our Residents

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## Our Anaesthetists

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Ian Self  
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BVSc, PhD, DVA, DipECVAA, MRCVS