

The British Equine Veterinary Association Trust
Queen Mother Student Travel Award 2009

Werribee Equine Centre - University Of Melbourne

Background

From the 28th June to 17th July 2009 I undertook a 3-week placement at The Werribee Equine Centre, University of Melbourne, Australia.



Figure 1 - Entrance to Werribee Veterinary Science Campus.

Having seen practice in 2 UK referral hospitals (The Liphook Equine Hospital and The Philip Leverhulme Equine Hospital) I have a keen interest in pursuing post-graduate study and ultimately a career in an equine referral hospital following graduation. For this reason I was extremely interested to experience equine referral practice abroad and to compare the similarities and differences in caseload, surgical technique and medical management of cases.

The Werribee Equine Centre (WEC) provides referral services to a large area of the state of Victoria. The busy caseload and the opportunity for teaching by world class clinicians, at the forefront of clinical research, provided a great opportunity to improve my clinical skills and advance my knowledge.

Placement Structure

At the time of my visit to the WEC, most of the students from The University of Melbourne were away for their 3-week winter vacation. This meant that the rotation structure was changed to weeklong 'vacation rotations' with a different group of 4-6 students working within the hospital for each week.

These small groups created a high ratio of patients to students and provided excellent opportunities for direct 'hands on' experience with cases, and one-on-one teaching from clinicians and residents.

Throughout my placement I was also included in the 'out-of-hours' roster providing treatments to in-patients throughout the night and participating in all emergency procedures and surgeries.

Observations

During my placement I made many observations as to differences and similarities between practice in Melbourne and practice that I had previously experienced in the UK. I also learnt several new techniques, such as the pastern ring block.

At the WEC the pastern ring block is often used during lameness work-ups as an alternative method of diagnostic analgesia to the abaxial sesamoid nerve block. The pastern ring block involves blocking the palmar digital nerves at the most distal aspect and directing the needle dorsally in order to block the dorsal branches of the palmar digital nerves. The aim of performing this block, as opposed to an ASNB, is to desensitize the entire foot without affecting the lateral condyles of the third metacarpal. This is particularly useful in the population of horses treated at the WEC, which are predominantly racehorses, in which the lateral condyles of MCIII are a common site of pain, and may be unintentionally desensitized in an ASNB due to diffusion of the local anaesthetic agent.



Figure 2 - Using treadmill endoscopy and telemetric ECG during investigation of poor performance in a 2-year-old TB filly.

Many of the observations I made during my placement arose from the high caseload of racehorses at the WEC, which differed from my previous experiences at practices that deal mostly with sports horses. The University of Melbourne has an agreement with Racing Victoria (the governing body of thoroughbred racing in Victoria) and for this reason they see a high proportion of racing thoroughbreds both in and out of the racing season.

During my placement I was also able to learn a little about the pacing and trotting industry in Victoria, a side of the racing industry of which I had no previous experience.

In addition, I was enlightened as to the strong ethical debate, surrounding jump racing in Australia. Unlike the UK, in which National Hunt racing is close in popularity to flat racing, in Australia jump racing is a controversial sport. Horses raced over jumps are often failed flat horses with minimal training resulting in a mortality rate almost twice that of flat racing². The Australian RSPCA is opposed to jump racing and at the current time only Victoria and South Australia still allow jump racing. Following the death of 3 horses in 3 days in May this year jump racing was suspended and the future of the sport is uncertain.

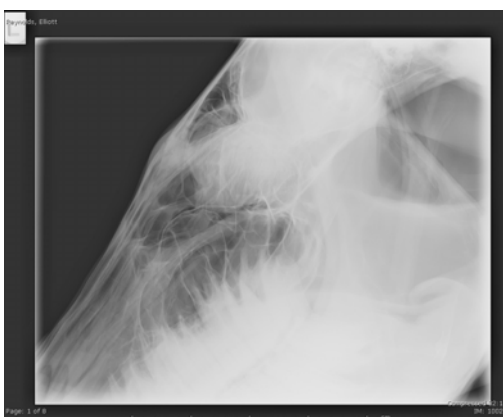
Differential diagnoses of colic cases at the WEC differ considerably to those in the UK. Equine dysautonomia has not yet been reported in Australia and is not considered as a differential diagnosis. However in the Werribee area the soil is very sandy and sand impactions are relatively common (several were seen during my placement).

Another difference I noted at the WEC was the use of ultrasonic examination in all colic cases that presented to the hospital. I felt that due to the regular use of this technique interpretation was of greater diagnostic value than at centres where the use of ultrasound in colic cases is less frequent. The ability to visualise gastro-intestinal components, for example the nephro-splenic space and distension/wall thickening of small intestine was not only useful for diagnosis but also an excellent teaching tool for students.

Many colic cases that present to the WEC are placed on enteral fluids, in contrast to what I have previously experienced where IV fluid administration appears to be more common. Enteral fluid administration has many advantages. Fluids are not required to be sterile so an isotonic solution made with tap water can be used, significantly reducing costs. Enteral fluid therapy also provides less risk of iatrogenic imbalances due to the natural selective absorptive properties of the gastric mucosa³. Enteral fluids can be delivered either as large boluses or as a continuous infusion. The continuous infusion method is preferred at the WEC as there is less risk of gastric distension.

There are of course instances in which enteral fluid therapy is contraindicated for example in cases of gastro-intestinal obstruction or severely compromised motility. However from the cases that I saw during my placement, I think that the use of enteral fluids is an excellent method of rehydration and to hydrate the content of the gastrointestinal tract (such as in colonic impactions) especially in those cases where IV fluid therapy is not an option due to financial constraint.

The WEC is designed as 2 long 'American Barn' style stable blocks connected by a long covered 'breezeway' incorporating 2 surgical suites, standing stocks, a weighbridge, treatment rooms and a radiography room that links directly to the central imaging department. This design linking both small and large animal imaging facilities results in sharing of expertise between departments. I was particularly interested in the use of specialist ultrasonographers to perform equine tendon scans, and radiologists to interpret some sets of radiographs in conjunction with equine clinicians.



Figures 3 & 4 - LM radiograph showing swelling and fracture fragments over frontal bone and curetting of necrotic bone at fracture site in standing stocks.



One aspect of the WEC that I thought was particularly well designed was the isolation unit. This is separate from the 2 stable blocks and has facilities for 2 isolation cases. The area is cordoned off from the rest of the veterinary campus with access to each stable through a central 'atrium' containing several decontamination points and all equipment required for treatment of each case. A viewing window in the back wall of each stable allows cases to be observed.

The 2007 outbreak of equine influenza in New South Wales has resulted in a heightened awareness of Australia's susceptibility to infectious disease outbreaks due to the naivety of the equine population. For this reason isolation of potentially infectious cases is extremely thorough.

Another interesting observation that I made during my time in Australia was that several horses I examined had bilateral thyroid hyperplasia. On discussion with the hospital clinicians it appeared that this is a common occurrence in the local area due to very low levels of iodine in the soil. Clinical signs of hypothyroidism are however very uncommon.

Medical case study

'Phoenix' a 14 year-old Arab gelding presented to the WEC with a 2 week history of poor appetite and haematology results from the referring vet of urea 33.2mmol/L (3.6-8.9mmol/L) and creatinine 1093 μ mol/L (110-170 μ mol/L). On initial clinical examination, heart rate was 60bpm and temperature 38.3°C. All other parameters were within normal limits. Also noted was a thick brownish plaque at the gingival margin of incisors and marked ventral pitting oedema.

On arrival a repeat haematology examination confirmed high urea and creatinine values and revealed hypercalcemia of 3.75mmol/l (2.5-3.6mmol/l), hyperkalaemia 5.8mmol/l (2.8-5.0mmol/l) and hypoalbuminaemia 21g/l (28-38g/l). Ultrasonic examination of the kidneys revealed variable echogenicity of the renal cortex.

Overnight Phoenix was given frusemide and IV fluids spiked with NaHCO₃ and glucose. The following day a renal biopsy was performed using a TruCut biopsy needle. Histopathology revealed severe fibrosis and sclerosis of the glomeruli, greater than 2 months in duration. Possible causes for this include antibody-antigen complex deposition in the basement membrane or a toxic cause. Due to the hopeless prognosis in this case the owners opted for immediate euthanasia.



Figure 5 - Performing an ultrasound guided renal biopsy on Phoenix.

Surgical case study

'Starkron' a 5 year-old Thoroughbred gelding presented at the WEC for severe acute lameness (4/5) of the left forelimb immediately following racing.

On radiographs a distinct radiolucent line was apparent on the abaxial border of the medial proximal sesamoid of the left fore. A diagnosis was made of a complete, displaced, articular fracture of the abaxial aspect of the medial proximal sesamoid.

Figure 6 - DMPLO view of the fracture of the medial proximal sesamoid in the left forelimb.

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Ultrasonic evaluation revealed marked enlargement and disruption of the normal fibre pattern of the medial branch of the suspensory ligament, interpreted as a severe desmitis.

The following morning Starkron was anaesthetised and placed in dorsal recumbency for removal of the sesamoid fragment via arthroscopy.

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are needed to see this picture.

Figure 7 - Radiograph showing fracture site during surgery, following removal of fragment.

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Figure 8 - Arthroscopic view of fracture site during surgery.

On arthroscopic examination two smaller fragments that had not been visible on radiographs were identified and removed. The larger fracture fragment was then removed, requiring considerable dissection of the medial branch of the suspensory ligament. Following extensive flushing of the surgical field with sterile saline the arthroscopy portals were closed and a two layer dressing applied to the distal limb. Post-surgery phenylbutazone, gentamycin, and procaine penicillin were administered.

On bandage change the following day a significant quantity of synovial fluid was seen on the primary dressing and due to possible risk of synovial infection penicillin and gentamicin continued for a further 3 days.

Starkron remained at the WEC for bandage changes and was discharged 2 weeks post-surgery with instructions for 3 months box rest, regular ultrasound scans to assess suspensory desmitis and a course of trimethoprim sulfa.

From a paper by Louise Southwood it was determined that for horses with abaxial fractures of the proximal sesamoid bone the prognosis for return to racing was 71% but prognosis for return to racing in the same class only 46%¹. It is hoped that Starkron will be able to return to racing in approximately 12 months time.

Conclusion

In conclusion my visit to the Werribee Equestrian Centre, Melbourne was extremely worthwhile. I had the opportunity to see a very different caseload to that which I had previously experienced with much work with racing thoroughbreds.

Originally I aimed to visit the hospital during the foaling season which turned out not to be possible due to university commitments. However, at the time of my visit I saw a huge variety of cases that in retrospect provided a more diverse educational experience.



Figures 9 & 10 - View of traumatic fracture of the zygomatic arch before and after placement of a cerclage wire to stabilise fracture.

During my visit I discovered that in addition to a particular interest in orthopaedic work I also really enjoyed the investigation into cases of poor performance. This, along with a personal interest in racing has made me particularly interested in work within the racing industry in the future and I am very much looking forward to seeing practice in Newmarket later this summer.

Spending my placement at a university hospital had an additional benefit due to the high quality of teaching I received during my visit. Clinicians used every opportunity to educate students, which was immensely valuable. Many of the clinicians had spent periods working in the UK, which was also very useful for their insight into the similarities and differences between equine practice in Australia and the UK.

My visit to the WEC resulted in an experience that both consolidated and expanded my knowledge to a degree that exceeded my highest expectations. I would like to reiterate my thanks to all the staff at the Werribee Equine Centre for the fantastic opportunities and teaching I received during my visit, and to the BEVA Trust for the funding that made this experience possible.

Sara Fleck
August 2009

References

¹Southwood. L, Arthroscopic removal of abaxial fracture fragments of proximal sesamoid bones in horses: 47 cases. (1989-1997) JAVMA 1998 Vol 213 No. 7. 1016-1021.

²http://www.aph.gov.au/senate/committee/history/animalwelfare_ctte/welfare_racing_industry/03ch3.pdf

³Lopes et al, Enteral fluid therapy for horses. Compendium 2003 Vol 25 No. 5. 390-397.