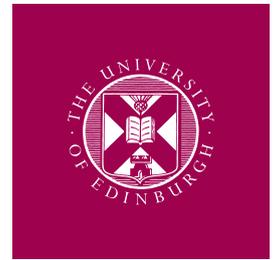


THE ROYAL DICK SCHOOL OF VETERINARY STUDIES



THE DICK VET EQUINE HOSPITAL

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SPRING 2013

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Welcome to our Spring Newsletter

It has been a long winter, but hopefully the shoots of spring are starting to appear in your area. The clinic has continued to be busy, with a large numbers of colic referrals this winter. We have also seen some early cases of grass sickness, which is surprising, but possibly due to the frosty dry spell we have had recently. Diagnostic imaging continues to be a strengthening discipline. MRI grows in popularity each year, as people increasingly recognise the benefits to be gained from the improved diagnostic accuracy. The standing CT is proving really useful for accurate head and neck evaluation and our new scintigraphy unit (see inside) should even further enhance our imaging capabilities.

Our new surgery team continues to develop, with Professor Dixon heading the team and we encourage you to communicate with them about your cases; they are always happy to advise. Richard Reardon has settled in well and is about to complete his PhD on tendon injury in the racehorse while Eugenio Cillan Garcia has hit the ground running where he left off, with all things surgical, but maintaining his special interest in the equine foot. The surgery team will be bolstered by Dr Raphael Labaens who joins us in June. Raphael is originally from Austria but spent three years in Glasgow doing a residency in equine surgery before completing further specialisation in North Carolina, USA over the last 6 years, working with some renowned surgeons. We are delighted to announce that Sarah Taylor had a baby girl in February; both are doing well and Sarah hopes to be back at work in October.

The medicine team have been busy over the winter juggling clinical duties with research and outside professional duties. Professor Bruce McGorum, along with a team from the Medical School, has attained a large grant from BBSRC to study lung fibrosis in donkeys and the parallels with human pulmonary fibrosis. The preliminary research being carried out as part of a PhD was highlighted in Spring 2012 newsletter and this new grant will hope to progress this research even further. Many of the medicine team were to be found in Le Touquet France for the Annual Congress and examination of the European College of Equine Internal Medicine in early February. John Keen has finished his 3 year stint on the Exam Board, on which he was Chair in 2011-2012; he remains however heavily involved with advancing the examination process to ensure that equine medicine specialisation in Europe is maintained at a high standard. Scott Pirie meanwhile is in charge of examination liaison between the European and USA internal medicine Colleges and is also one of the team offering advanced training to Equine Medicine Diplomates.

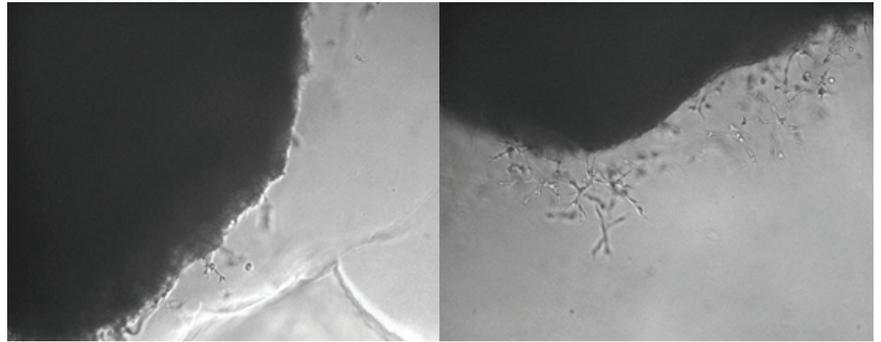
Three new residents have started this year, as three others have finished their specialist training. Tim Barnett left to take up a job with Rossdale's Equine in Newmarket, John O' Leary left us for his Irish homeland, although does pop back to provide us with occasional locum help and Claire Stratford headed down south back home. They have all been a fantastic help in the hospital throughout the last

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Research Update: Steroids and Laminitis

Ruth Morgan, under the supervision of Dr John Keen, is undertaking a 4 year BBSRC and Zoetis funded PhD evaluating the role of corticosteroids in metabolic syndrome, Cushing's Disease and laminitis. This study is in collaboration with researchers at the University of Edinburgh Medical School who evaluate similar vascular diseases in humans. Preliminary results have proved very interesting and include the following:

- Steroid levels appear to be excessively high in fat tissues of horses that have the equine metabolic syndrome and that are predisposed to laminitis. This is similar to the situation in humans where many believe that systemic and/or local steroid levels may 'drive' the human metabolic syndrome and the predisposition toward cardiovascular diseases such as strokes and myocardial infarction.
- Equine blood vessels appear to behave differently from mouse and human blood vessels when bathed



Blood vessel without (left image) and with cortisol (right). Note all the small blood vessels growing out of the vessel bathed in cortisol

in steroids: while studies have shown that mouse or human blood vessels fail to grow in the presence of steroids, Ruth has found that equine vessels proliferate massively. This raises interesting questions about our assumptions of how steroids may affect blood vessels in the horses foot, but also the effects of steroids in wound healing in horses (we had assumed that steroids stopped blood vessel growth so contributing to delayed healing), how steroids regulate

ovulation in the horse etc.

This research is on-going for the next 3 years and some aspects are dependent on gaining access to laminitis clinical case material. If you know of horses or ponies destined for euthanasia as a result of repeated laminitis that are clinically stable and able to travel then John or Ruth would be very keen to hear from you.

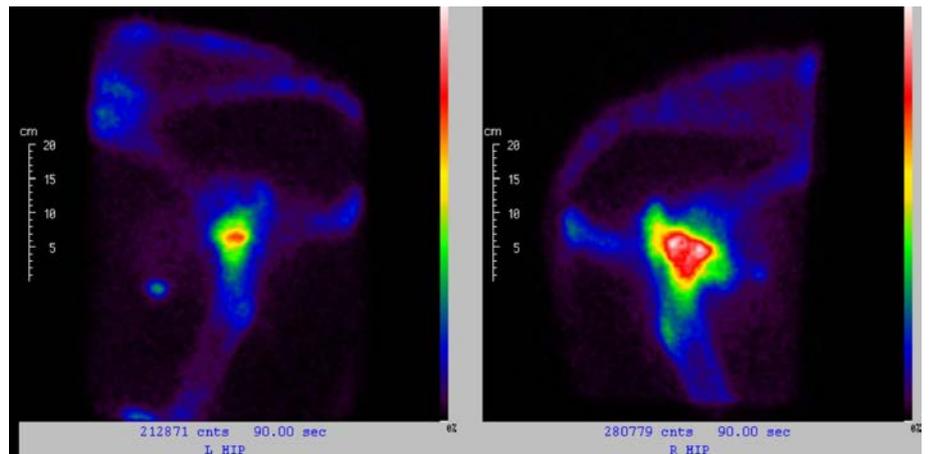
Please contact john.keen@ed.ac.uk in the first instance.

Equine Scintigraphy

We are pleased to announce that our new Equine Scintigraphy Unit is installed and fully functioning!!

Our new, state of the art, purpose built gamma camera has greatly improved on our older model that we have had for the last 15 years and is one of the most up to date systems in the country. One of the main advantages of the new system is the reduced image acquisition time, which minimises the time that the horse needs to spend in the scanning room. This reduces the dose of sedation for the horse and the dose of radiation for the staff helping with the scan. There is also vastly improved motion correction software, which means the images produced by the new system are of much higher resolution.

Ours is only the third scanner of this type to be installed in the UK and



Horse that presented with severe non-weight bearing lameness of the right hind. Marked increase in radiopharmaceutical uptake (red) is seen on the right hind in the region of the right coxofemoral joint. Post mortem confirmed the clinical suspicion of an unstable pelvic fracture. It is very difficult to assess this part of the hindlimb with other imaging modalities.

the first to be installed in Scotland. The improved images together with decreased scanning times and reduced stress for our patients

combine to make scintigraphy an incredibly useful imaging modality for equine lameness diagnostics.

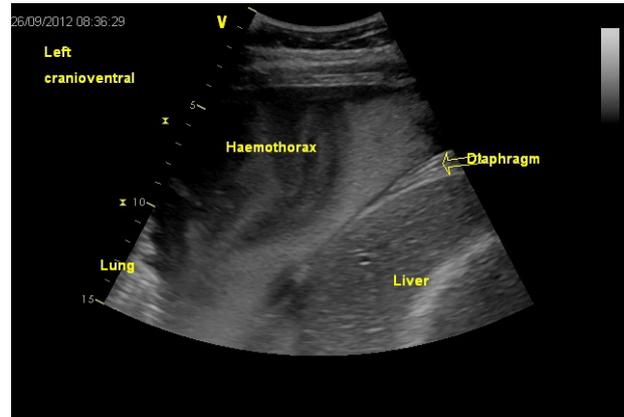
Case Study – “Coming up against a brick wall”

‘Leo’, a 9 year old Warmblood gelding was referred in September 2012, with a history of earlier in the day colliding with and demolishing a breeze block wall. With the exception of moderate epistaxis and occasional skin abrasions, Leo appeared relatively unscathed. Fortunately, and somewhat miraculously, Leo’s rider sustained no injuries at all. Despite Leo’s initial appearance, he was found recumbent in the field later that day and, when encouraged to rise, demonstrated an ataxic gait. Examination revealed mucous membrane pallor and a significant tachycardia (104 beats/minute) which prompted immediate referral.

On arrival at the hospital, Leo was quiet and responsive. Clinical examination confirmed the mucous membrane pallor and revealed a tachycardia (120 beats/minute) and tachypnoea (20 breaths/minute). Although he did not appear ataxic upon arrival, his gait was slow and laboured. A tentative diagnosis of haemorrhage into a 3rd space was made, with resultant acute hypovolaemia. Despite a relatively normal packed cell volume (0.36L/L), a raised blood lactate concentration (4.6 mmol/L) supported the presence of significant hypovolaemia. Circulatory support was instigated in the form of intravenous colloid administration, during which attempts were made to identify the site of haemorrhage. Ultrasonographic examination of the abdominal cavity was unremarkable; however, thoracic ultrasonography revealed a significant volume of fluid ventrally within both the left and right hemithorax. The ultrasonographic appearance of the fluid was highly consistent with haemothorax. The volume of haemorrhage appeared identical on both sides of the thorax, reflecting communication between the two sides via a fenestrated mediastinum. No rib fractures were detectable ultrasonographically. Leo

Image of Leo’s thorax showing echogenic material (blood in this case) within his pleural cavity causing the lung to collapse away from the diaphragm.

Deep to the diaphragm is the liver and then the colon



was hospitalised overnight on intravenous fluid therapy, prophylactic antibiotics and analgesia.

The circulatory volume replacement resulted in a reduction in heart rate to 80 beats/minute overnight and his PCV gradually reduced to 0.18L/L, due to haemodilution resulting initially from fluid shifts from the interstitial space into the intravascular and latterly from intravenous fluid administration. In light of the fact that the PCV stabilised at 0.18L/L and the heart rate continued to gradually reduce, no blood transfusion was performed. Following a further 24h, intravenous circulatory support was ceased and Leo resumed oral fluid and feed intake. Daily ultrasonographic examination of the thorax showed a gradual reduction in fluid accumulation on both sides of the chest; however, a small left sided pneumothorax was noted, consistent with lung parenchymal damage. Under such circumstances, the unilateral nature of the pneumothorax was expected due to accumulation of free air within the pleural space in a dorsal position and therefore distant from the communication between the left and right sides.

Continued monitoring of Leo’s clinical parameters revealed a return of both respiratory and heart rate to within normal limits. His PCV gradually increased to 24% by day 8 of hospitalisation, a rate of

increase consistent with a degree of autotransfusion. He was discharged following 2 weeks of hospitalisation with instructions for box and paddock rest for the next 6 weeks.

This case highlights a few interesting areas of consideration; namely, (a) the traumatic incident itself is testimony to the power of the horse and was a key part of the history; (b) the clinical presentation of tachycardia with associated mucous membrane pallor was highly consistent with haemorrhage, the degree of which was not consistent with the epistaxis noted immediately following the event; (c) the absence of severe respiratory compromise caused by pleural fluid was not unexpected in this scenario, considering that the volume of blood necessary to cause a significant interference with lung expansion would exceed the volume of acute loss that was compatible with life; (d) in acute blood loss, PCV remains within or near normal limits until sufficient time has elapsed for fluid shifts to occur and result in haemodilution; therefore the blood lactate and heart rate were more accurate indicators of the degree of blood loss; (e) under clinical situations consistent with acute blood loss, in the absence of overt external haemorrhage, there are a limited number of sites which require evaluation and ultrasonography

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Welcome (cont.)

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3 years and we wish them well. Rachel Jago, our new medicine resident, is a Dick Vet graduate who has a wealth of experience in first opinion large animal and predominantly equine practice, backed up by an intensive 2 year training period as an intern at the Newmarket Equine Hospital. Tim Froydenlund, our new Surgery resident, is a Cambridge 2007 graduate, who spent 3 years in mixed practice in Worcestershire before starting as an intern at Liphook Equine Hospital. He stayed there for 18 months and then was employed as a 'road vet' for a further 15 months before joining us in February. Last but not least we are glad to have kept hold of Gemma Pearson who has started an Equine Practice Residency. Gemma qualified from Glasgow and spent some time in equine practice in Yorkshire before coming here to do an internship in the first opinion practice. Gemma has a great interest in equine behaviour and is always happy to talk about techniques for loading horses, injecting needle shy horses etc. They join our other 2 residents Justine Kane-Smyth and Lucy Meehan, and all contribute hugely to the smooth running of the hospital.

Case Study (cont)

Continued from inside

remains the most useful diagnostic tool in achieving this; (f) despite the limited value of measuring PCV in the initial stages of acute blood loss, it can be a useful indicator of the requirement for blood transfusion at a later stage in the face of continued blood loss; the plateau in the PCV at a value of 0.18L/L negated the necessity for a transfusion; (g) the rate of increase in PCV following a haemorrhagic episode is greater in situations whereby the blood is lost within a body cavity, thus facilitating a degree of autotransfusion and recycling of haemoglobin.

In conclusion, this proved to be an interesting case with a successful outcome. The final year students were advised to pay particular attention to

and consider the different aspects of the case as "they may not see another similar case for some time". **Another case of haemothorax was referred the following week ... thankfully with a similarly successful outcome!!!!**

ARVS Summer Meeting

Those of you with an interest in problems of the athletic horse may be interested in the ARVS Summer Meeting which takes place in Doncaster 4th June this year. Topics include tying up in racehorses, tendon injuries and sudden death in the racehorse. There are also some experts in comparable human diseases (e.g sudden death in human athletes) there to add extra interest. Details of the meeting are at www.arvs.org.uk/events.html

Mobile Expertise in Equine Diagnostics

We are committed to providing a high quality hospital-based clinical teaching practice and the technology we have in the hospital, along with the facilities and support staff are among the very best in this country and Europe.

Hospitalisation is often crucial to allow the best care and most effective evaluation. We do however understand that there are times when your clients are unable to travel or it is not possible to bring horses into the hospital. With improvements in mobile diagnostic units we are sometimes happy to provide expertise 'on the road'. Your clients should be aware that the cost may well be greater than a visit to the hospital, as it incurs costs related to travel. If you have a specific request to use us in this way, please contact the relevant clinical service. Surgery is not currently included in this approach as we strongly feel that, due to the nature of the surgical cases we are asked to evaluate, the best service to your client is provided when the surgery is carried out by a whole team of specialists (anaesthetists, surgical nurses, medical backup) who perform their relative duties in a facility

designed for that purpose. It also means that we can achieve close post-operative monitoring in case of predicted and unpredicted complications; as you know surgery can be unpredictable even with the best care. This mobile service is on an ad hoc basis, when other staff commitments allow, and in consultation with the senior clinicians only.

Our Clinicians

Medicine

Professor Bruce McGorum
BSc, BVM&S, Cert EM, DipECEIM, MRCVS

Dr Scott Pirie
BVM&S, PhD, Cert EM, Cert EP, DipECEIM, MRCVS

Dr John Keen
BVetMed, PhD, Cert EM, DipECEIM, MRCVS

Dr Karen Blissitt
BVSc, PhD, DVA, DipECVAA, MRCVS

Surgery

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MVB, PhD, MRCVS

Dr Sarah E. Taylor
BVM&S, PhD, Cert ES (Orth), DipECVS, MRCVS

Mr Eugenio Cillan-Garcia
DVM, MRCVS

Mr Richard Reardon
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Dr Caroline Hahn
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Our Residents

Lucinda Meehan
BVSc, MSc, MRCVS

Justine Kane-Smyth
BVM&S, MRCVS

Rachel Jago
BVM&S, MRCVS

Tim Froydenlund
MA, VetMB, MRCVS

Gemma Pearson
BVMS, MRCVS