



spring/summer newsletter

Spring 2016

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Equine Oncology Centre- A new service offered at the R(D)SVS!

Dear Colleagues,

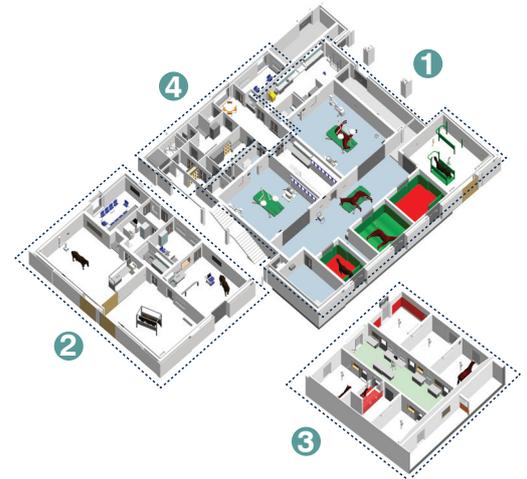
This latest edition of our Hospital Newsletter will hopefully keep you abreast of our news and items of clinical interest.

Building of our new Equine Diagnostics, Surgery and Critical Care Unit is due to start imminently and will be complete in the Summer of 2017. We are extremely excited about this new addition to our Hospital, and very grateful to generous donations from the University, along with a variety of individual donors and Trust Funds allowing us to fund such a project. Due to the tight margins we work with, without the generosity of others we would not be able to build and maintain such a facility enabling us to provide high quality clinical care and teaching facilities. This new unit will be adjacent to our current barns and will replace the older surgical and diagnostics buildings refurbished in the late 1990s.

We are also very pleased that plans for a Large Animal Research and Imaging Facility (LARIF)

are in full swing meaning that in the next few years, equine clients will have access to state-of-the-art high quality CT and MRI on anaesthetised horses. This facility will complement our standing advanced imaging technologies and will give us diagnostic capabilities that are unrivalled in the whole of the UK.

The later development of a linear accelerator in the LARIF also fits in well with our new initiative towards improving cancer care in horses. Richard Reardon and our new surgeon Yvonne Elce are heading this initiative and there is more information on the back page.



- 1 Surgery
- 2 Diagnostics & Triage Area
- 3 Critical Care
- 4 Support Space

The new Equine Diagnostics, Surgery and Critical Care Unit will offer us impressive new facilities.

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Starters and Finishers

We were very pleased to welcome Dr Yvonne Elce and Dr Patrick Burns in the Autumn of 2015 to the positions of Head of Equine Surgery and Head of Clinical Anaesthesia respectively. Both Yvonne and Patrick bring a wealth of experience to Edinburgh. Yvonne, who many of you may already have met or spoken to, is of English descent but grew up in and went to vet school in Canada, before various positions at vet schools in the USA and then latterly Montreal. She has already brought her experience to bear in developing cancer care and advances in minimally invasive surgery.

Raf Labens, one of our senior surgeons, will unfortunately be leaving us for the sunny climes of Australia and we are in the process of seeking a replacement orthopaedic specialist for his post. Sarah Taylor will head off on maternity leave in August and our senior surgery resident Tim Froydenlund will take over maternity cover. Watch out for a few new residency faces too as we have a new resident in dentistry starting soon and are appointing new medicine and surgery residents in the next month.

Electrical cardioversion in horses

John Keen and Karen Blissitt

Atrial fibrillation (AF) is a relatively common arrhythmia in horses and the commonest cardiac cause of poor performance. AF prevents normal co-ordinated contraction of the atria which reduces cardiac output during exercise by approximately 20%.

Treatment options for AF caused by cardiac disease are limited, but thankfully these cases are quite rare in horses. More often than not, horses present with so-called 'lone AF' when there are no signs of cardiac pathology that could have caused the AF. Horses in lone AF can potentially be converted back to sinus rhythm and return to previous performance levels.

The historic treatment for lone AF has been intra-gastric quinidine sulphate (QS). While successful in the majority (~ 85%) of cases, QS does have a number of side effects, the most significant of which is sudden death; this occurs without warning and despite intensive monitoring. A number of other medical anti-arrhythmic treatments have been attempted but these have proven either less effective than QS or else more dangerous.

More recently, a technique for electrical conversion using intra-cardiac cardioversion electrodes has been developed at Guelph University, Canada. Early results from this group showed excellent conversion rates (>95%), with the only downside being the requirement for general anaesthesia. The initial batch of cardioversion electrodes that were manufactured in Canada were restricted in number. However cardiologists at Edinburgh contacted a small specialist company on the Isle of Skye who agreed to take over manufacture of the electrodes worldwide.

the electrodes are in place, the horse is anaesthetised and placed in lateral recumbency (Figure 3). Sequential controlled electric shocks at set levels are then discharged between the two electrodes with the aim to synchronise the atrial tissue into sinus rhythm.

We now have the equipment needed to carry out trans-venous electrical cardioversion (TVEC) and have teamed up with Dr Lesley Young from Newmarket (3 cardiologists are required to do the technique efficiently). Having developed the necessary expertise, we now undertake TVEC at the R(D)SVS Edinburgh and at equine hospitals in the South of England. This provides the high case numbers to maintain expertise and helps Lesley with her cases for electrical cardioversion.



Figure 3: The horse is anaesthetised and placed in lateral recumbency for the electroconversion procedure.



Figure 1: Cardioversion electrodes and pacing lead in place, covered with sheaths to maintain sterility.

Figure 2: Placement of the pacing electrodes.

The technique is technically challenging. Special introducer sheaths are placed in the jugular vein for the introduction of 2 conversion electrodes (which are then positioned in the left branch of the pulmonary artery and the right atrium) and one pacing lead (positioned in the right ventricle) (Figure 1).

Accurate placement of the electrodes is essential and this is accomplished under sedation using ultrasound guidance and monitoring of the pressure at the electrodes tips (Figure 2). Once

Which horses are suitable candidates for TVEC? Not all horses necessarily need converting to sinus rhythm: some horses can cope with AF if they are competing at a low(er) level. An exercising ECG examination is necessary however to determine if there are additional concurrent arrhythmias such as frequent ventricular premature complexes or 'R on T' like phenomenon (Figure 4) which may make the horse unsafe to ride. The treatment choice is largely dictated by owner preferences, cost and the risk level for the individual horse of having problems with QS treatment, based on the results of the exercising ECG.

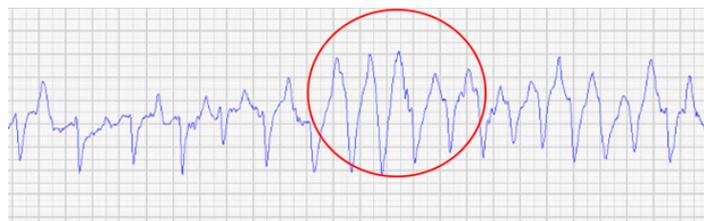


Figure 4: ECG during exercise demonstrating R on T complexes. There were repeated runs of these during the fast trot period.

There is unfortunately always the potential for horses reverting back to AF, whatever the technique used, with studies suggesting 15-30%. However the majority of those converted go on to recover their full athletic potential.

Minimally Invasive Surgery - a big deal about small holes!

The soft tissue surgery team of Richard Reardon and Yvonne Elce are pleased to announce the acquisition of additional equipment that enables the R(D)SVS to perform a wide range of minimally invasive surgeries on horses. Both Richard and Yvonne have extensive experience in this area and are delighted to be able to offer these options to our clients.

The majority of the equipment was purchased through a generous donation from Gladys Ogilvy-Shepherd. The equipment enables a large number of minimally invasive surgeries to be performed, including closure of the nephrosplenic space under standing sedation through a small incision on the left flank of the horse. This procedure reduces the risk of recurrence after a nephrosplenic entrapment of the large colon from 20-30% down to less than 5%.

The recuperation time after such a minimally invasive surgery is also relatively short with commonly 2 weeks of rest followed by 2 weeks of light exercise prior to returning to full function.

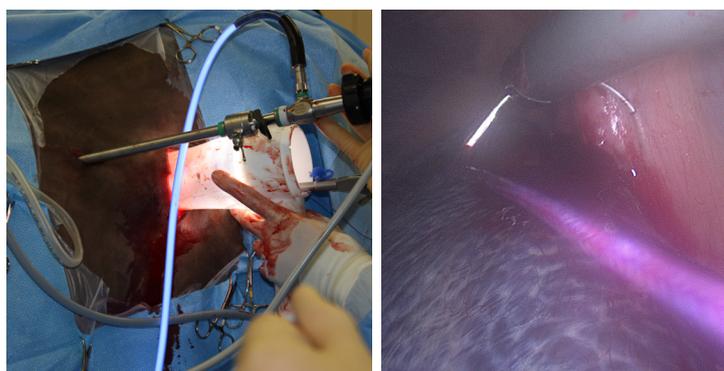


Figure 1: An image of the special equipment used, looking from the front of the horse.

Figure 2: Suturing of the spleen to the peri-renal fascia to close the nephrosplenic space.

Recently, with the help of the Belgian surgeons who developed the technique, the new equipment was used to undertake an exciting novel laparoscopic procedure to close the epiploic foramen (an orifice in the abdomen). The horse had previously required colic surgery at the R(D)SVS to release entrapped intestine from the foramen, which is a relatively common cause of colic requiring surgical treatment. The ability to reduce the likelihood of its occurrence is an exciting development.

Other common minimally invasive surgeries are ovariectomies and cryptorchidectomies. Ovariectomies are performed for behavioural reasons or to remove ovarian tumours such as granulosa cell tumours. The comfort and safety of these procedures is greatly enhanced by use of minimally invasive techniques and visualisation.



Figure 3: Laparoscopic removal of a granulosa cell tumour.

Figure 4: Enlarged ovary containing a granulosa cell tumour following removal from the abdomen.

There are many other uses for laparoscopy or thoracoscopy so please feel free to contact us at any time if you have questions or a potential patient that you would like to discuss with us.

Imaging on a larger scale

We are delighted to announce the recent arrival of the ground breaking Pegaso® flat panel CT unit in the Equine Hospital, supplied to us by BCF Technology Ltd. Because of its large internal diameter, this equipment provides the opportunity to image parts of horses that were previously inaccessible, including the cervical spine.

Horses can be imaged under general anaesthesia or standing and sedated as previously. Unlike standard CT units where the horse moves on a platform through a fixed CT unit, with Pegaso the horse remains stationary while the X-ray source and detector assembly move - which is more comfortable for some horses.

The Equine Hospital and Imaging Department are working closely with the company that manufactures the unit and over the following year we shall be exploring the possibilities offered by this new imaging modality.



Figure 1: Positioning of sedated patient prior to scan of the head.

Figure 2: CT image of teeth and sinuses, showing abnormal fluid.

Equine Oncology Centre - A new service offered at the R(D)SVS!

Horses are living longer and the care of conditions associated with these elderly horses is becoming an important part of the optimised care provided at the R(D)SVS. The Equine Hospital is now pleased to offer an equine oncology service, devoted to finding individualised solutions for horses with cancer.

The clinicians working in this service include Yvonne Elce, our newly arrived surgeon from North America who has extensive experience working in equine oncology clinics including those offering radiation therapy and advanced care, Richard Reardon with a special interest in skin tumours, and the internal medicine clinicians of John Keen, Bruce McGorum and Scott Pirie who provide their expertise in internal and systemic cancers. The trio of surgeons (Paddy Dixon, Richard and Yvonne) will continue to provide advanced diagnostic and treatment options for head and neck tumours.

The most common tumours that occur in horses are skin tumours. Laser removal of the mass and local chemotherapy are common options for management. New therapies available with the oncology clinic include dendritic cell therapy, a novel immunotherapy, cisplatin bead implantation, and laser assisted removal of masses. In the future, we hope to be able to offer radiation therapy and long term plans to put this in place are ongoing.



Figure 1: An eyelid sarcoid which will be treated with implantation of absorbable beads containing cisplatin, a chemotherapeutic agent giving approximately 80% chance of resolution.

Tumours of the urogenital system can often be found in elderly geldings and mares;

routine examination will enable early detection and treatment. Excision combined with local chemotherapy often offers the best chance of a successful outcome. Ovarian and uterine tumours can be safely removed using minimally invasive techniques such as laparoscopy improving the comfort and speed of recovery and ultimately resulting in a quicker return to exercise for these horses.



Figure 2 & 3: A squamous cell carcinoma of the penis and the intra-operative picture of the new end of the penis being shaped after penile amputation. Early recognition and removal is crucial to the long term outcome of this tumour although new adjunctive therapies are helping to improve the odds.

Tumours affecting the intestines and internal organs can be investigated by the internal medicine clinicians with the potential for minimal invasive exploration and biopsy or surgical removal if possible.



Figure 4: A large benign tumour of the uterus that was successfully removed using a combination of laparoscopy and laparotomy.

If there are any questions regarding potential cancers, the clinicians are available for consultation by telephone or email.

Our Clinicians

Medicine

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

Professor 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

Dr Yvonne Elce
DVM, Dip ACVS, MRCVS

Professor Paddy Dixon
MVB, PhD, Dip EVDC (Equine), MRCVS

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

Dr Raphael Labens
MagMedVet, MVM, PhD, CertES(Orth), DACVS, DECVS, MRCVS

Mr Eugenio Cillan-Garcia
DVM, MRCVS

Dr Richard Reardon
BVetMed (Hons), MVM, PhD, Cert ES (Orth) DipECVS, MRCVS

Our Residents

Rachel Jago
BVM&S, MRCVS

Tim Froydenlund
MA, VetMB, Cert AVP, MRCVS

Gemma Pearson
BVMS, MRCVS

Robyn Graham
BVSC, MRCVS

Rebekah Kennedy
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