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Veterinary News

Animal Health Trust Veterinary News

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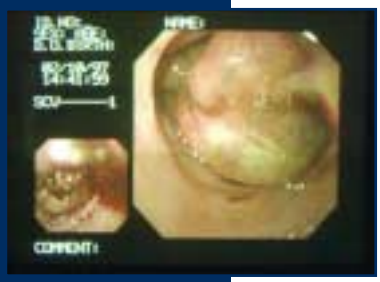
Clinical services at the Trust

The clinical areas of the Trust provide a referral service that is widely used by first and second opinion veterinary surgeons alike. Our specialists work in modern purpose built clinics, where state-of-the-art diagnostic and therapeutic facilities allow them to apply their skills at the highest level. As a result, we are often able to diagnose and treat conditions that would otherwise be considered beyond help. Working at this advanced level has additional benefits in that it provides the high quality information that is often necessary for our research. In return, the research aims to deliver information and results that are of ultimate benefit to our patients.



Colon tumour in a feline patient seen with endoscopy

We are in a unique position to provide this level of investigation and care, which would often be difficult to justify in the commercial sector. It is also an ideal environment for the specialist training of veterinary graduates and we offer excellent opportunities in a number of areas. In these ways, we see our clinical services as crucial to our overall effort in improving the health and welfare of animals through better understanding of disease.

Most neurosurgical procedures are now performed under a surgical microscope. It has enabled our surgeons to limit not only the size of the surgical wound, but also the tissue damage and overall surgical time.

Although our clinical programme is being developed with the clear aim of contributing to research efforts of the Trust, we are also conscious of the need to operate in a financially viable way so that available funds are used to their maximum benefit in the research area. This means that we must develop an integrated service, one that is both attractive to our clients and makes optimal use of our valuable resources. Initiatives such as our new Feline Unit demonstrate the concept of developing the service in line with the needs of our clients and our research, and we hope to identify other such areas in the future. Over the past 2 years, we have begun to build our teams with these principles in mind, and the success of the clinics demonstrates that we are certainly providing a service that is valued by our clients. We thank you for your support in this, and hope that we can continue to build this relationship with you to the benefit of all the animals in our care.

Horse having its feet scanned.

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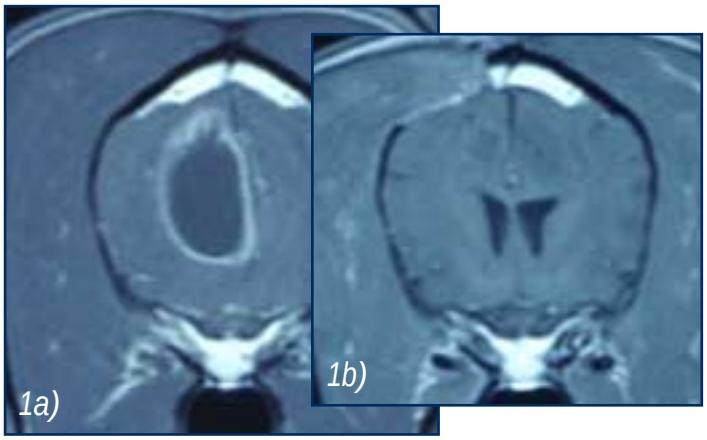
The future for brain tumour treatment at the Animal Health Trust

Despite the many advances made in human neurosurgery and neuro-oncology, the median survival time of patients diagnosed with a high-grade primary brain tumour remains about 12 months. Thus clinicians and researchers are continually seeking to develop and improve therapies for the treatment of this aggressive disease. So what hope is there for the veterinary profession? Treatment of brain tumours may not deserve the bad reputation that has been given in the past. Obtaining a cure would certainly be a very 'tall order' and we have to accept that our primary aim is only to offer a remission with a good quality of life. But isn't this the case for most other tumours?

Research on diagnosis and treatment of brain tumours has become a priority at the Animal Health Trust. Where monotherapy has been proven to be poorly effective, efforts are now concentrated on a combined therapy approach. Many brain tumours today are surgically accessible. The Neurology team has continued to establish a strong collaborative relationship with Addenbrooke's Hospital Neurosurgery group in Cambridge and now routinely attend weekly rounds sessions with their neurosurgeons. Over the last 12 months, more than 30 dogs and cats have successfully received surgical treatment for their brain tumours. This advance has been made possible by access to surgical aids such as a dedicated neurosurgical microscope, and the expertise gained by a specially trained anaesthetic team. It is also now accepted though that additional therapy will be necessary to increase the life expectancy of brain tumour patients. Most of our patients therefore undergo radiation treatment or chemotherapy following surgical resection. (Fig 1a, b)

Funding has recently been allocated for research into veterinary neurosurgery and promising brain tumour treatments are becoming available in dogs and cats before they are available in man. The Animal Health Trust will soon start a 3-year programme funded by a European Union grant on the use of anti-angiogenic factors (aimed at 'cutting' the vital blood supply of tumour) as an adjunct to brain tumour surgical resection. Owners with dogs with confirmed brain tumours will be given the option to undergo a standard surgery and then be given the new treatment at that time. The hope is that the drug released from implanted capsules will lead to an induction of brain tumour cell death as has been seen in other animals. These patients will be monitored carefully with MRI scans to evaluate how effective this therapy is being. With no 'gold-standard' alternative in veterinary medicine, this may offer dogs a chance to live longer and with better quality than has been possible before.



Ruby is a 6-year-old female neutered Boxer diagnosed early this year with a brain tumour. Figure 1a shows a large intra-axial mass diagnosed after surgery as being a glioma. She underwent surgical resection and radiotherapy. A repeat MR scan (Fig 1b) 4 months after surgery revealed absence of tumour regrowth. Ruby is currently enjoying life with her owners.

This work would not be possible without the continued support of those clients determined not to give up hope for future therapies, the veterinarians who are initially responsible for searching for other options for their clients and not least the dogs, for whom we search for better options than we may be often granted.

Small Animal Centre appoints new Nurse Manager

We are pleased to welcome Karen Felton to the small animal centre where she will shortly be joining the nursing team as Nurse Manager. Her principal role will be one of leadership and coordination, with overall responsibility for the entire small animal nursing team.

Karen qualified in 1996 and joins us from the College of West Anglia where she has been teaching a range of animal care courses including 1st and 2nd year veterinary nursing. Since September 1998 she has acted as an RCVS assistant examiner for 2nd year nursing exams. Karen gained considerable nursing experience (including that of head nurse) working in general practice for a period of 8 years prior to joining the college.

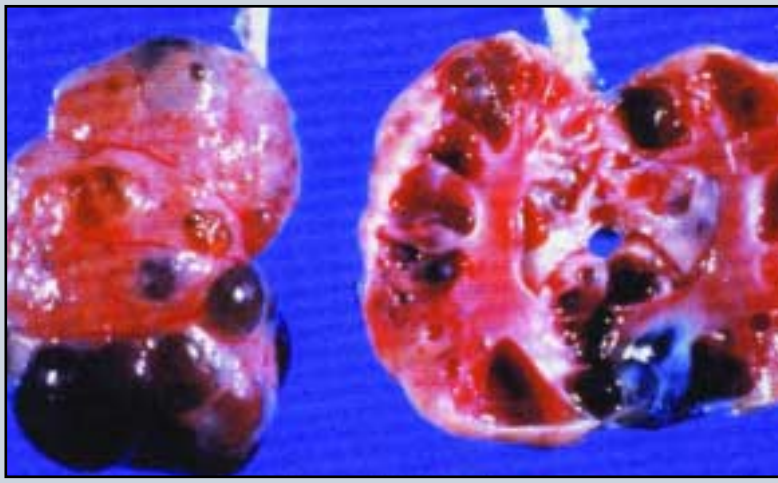
Karen's appointment emphasises our commitment to maintaining the highest possible standard of nursing support and patient care in the clinics.

We look forward to welcoming Karen to the Trust in early October.

Boyzee saves lives!

Boyzee Duggua, an 8-year-old male Cairn Terrier, was referred to the Animal Health Trust's Neurology Unit at the end of 2000, for an investigation into his recent personality changes. Thankfully, nothing sinister was found although investigations are ongoing. Thanks to the continued care and attention from Boyzee's owners and veterinarian, Mr Cross in Onchan on the Isle of Man, Boyzee has gone on to live a great life. Thanks to Mr and Mrs Duggua and Boyzee, who have recently donated £2,000 to the Neurology Unit at the Trust, many more dogs, and cats, may have the chance to go on and live a great life too!! The generous gift has enabled the purchase of an intensive care warming system together with vital anaesthetic equipment for patients that have recently had anaesthesia for procedures including brain and spinal surgery. The Animal Health Trust and all the dogs and cats that may visit here in the future wish to extend their gratitude to the Duggua family in the Isle of Man.

The FAB PKD Testing Scheme



Post-mortem specimen of a kidney with severe polycystic disease.
Printed with the kind permission of Feline Advisory Bureau.

The disease - Polycystic kidney disease (PKD) is an inherited disease in Persian cats and derivatives such as the exotic shorthair. It resembles human autosomal dominant polycystic kidney disease (ADPKD), the most common genetic disorder in man, and the feline disease forms a useful animal model for this condition.

Renal cysts are usually present at birth, although they may be very small at this stage. Cysts may still form during the first few months of life whilst the kidneys are completing their development, but new cysts do not form later. They may be present in the cortex or medulla and in one or both kidneys. The cysts gradually increase in size with age at a variable rate, and, when large and/or numerous, result in renal failure. Only when the kidneys are very severely affected are the cysts palpable or detectable radiographically and testing for the presence of cysts currently requires ultrasonography, although a blood test may be developed in the next few years.

Ultrasonographic screening for PKD has been performed in a number of countries for some time, and results indicate that the world-wide incidence of PKD in Persians and Persian crosses is between 25 and 33%. It is thought that the incidence in the UK, where screening only began very recently, may be as high as 50%. The disease has probably been overlooked because clinical signs usually occur only in middle age, after the cats have been used for breeding, and has often been attributed to other causes of renal disease.

PKD has an autosomal dominant mode of inheritance, therefore all heterozygotes are affected. Homozygote affected foetuses die *in utero* because the kidneys cannot develop properly. Therefore, if two affected (heterozygote) cats are mated, of every 3 kittens born, 2 are affected heterozygotes and one is unaffected (ie 67% affected). Mating an affected cat (ie heterozygote) with an unaffected cat will result in 50% each of affected and unaffected kittens and may be a compromise solution to increase the number of unaffected cats whilst retaining other desirable traits.

The FAB PKD Scheme - Screening is performed by ultrasound examination of the kidneys using a high frequency transducer of at least 7.5 MHz. Cats should be at least 10 months old because, at younger ages, many cysts will be very small and hard to see. The cysts are seen as well-defined, spherical anechoic structures of about 2–15 mm diameter, larger ones producing distal acoustic enhancement. Cortical cysts are easier to see than medullary cysts as they are surrounded by tissue of greater echogenicity. The accuracy of detection of cysts by experienced ultrasonographers using high quality equipment is said to be over 95% and the presence of even a single cyst indicates that the cat is affected.

Two small cysts in the kidney of a 2-year-old male Persian cat.

Scanning may be performed from a flank or ventral approach and experience has shown that sedation and clipping are rarely necessary. Persians and Exotics tend to be very placid and show cats are used to handling; the presence of the owner is to be recommended as this will also reassure the cats, and the owners appreciate the ability to see the images, especially when the cats are affected. The hair can be parted and good transducer contact achieved using spirit and contact gel avoiding the need for hair removal.

FAB has produced a list of approved ultrasonographers in 12 geographic locations. All are diplomates in diagnostic imaging or feline specialists; future additions will all have to be diplomates. Certificates of PKD status are issued (unaffected, affected, equivocal – re-scan in 6 months) with copies for the owner, FAB, referring vet and ultrasonographer. Microchip identification is essential for unaffected cats before a certificate can be issued and many cats are therefore chipped at the time of scanning. As well as the scanning cost a small fee is payable to FAB for each cat, to cover the cost of data collation and future statistical research. PKD-free cats may be advertised as such.

Although cats must be at least 10 months old before being officially screened, cysts may sometimes be detectable in younger animals. Therefore unofficial screening of young animals could be considered as a way for breeders to select cats for future breeding. Affected kittens could be neutered and re-homed although their affected status would have to be made clear to any prospective new owners.

References

Polycystic Kidney Disease (PKD) in cats – FAB Information Sheet Catfacts 32.

Inheritance of Polycystic Kidney Disease in Persian cats; D.S. Biller, S.P. DiBartola, K.A. Eaton, M.L. Wellman and M.J. Radin, Journal of Heredity 1996 87 1-5.

More information including a list of approved ultrasonographers is available on the FAB website: www.fabcats.org

Evaluation of a new Spacer Device for delivery of inhaled medications to the horse

Pulmonary inflammatory disorders occur commonly in the horse. In younger horses they may be primarily infectious in origin whereas, in the older horse, the cause is frequently an allergic response to environmental allergens. In addition to modification of the horse's environment to reduce exposure to allergens, treatment has generally relied on bronchodilators (eg clenbuterol), mucolytics (eg dembrexine) and oral medication with steroids (eg prednisolone). Delivery of drugs directly into the affected airways may improve local drug concentrations as well as reducing systemic uptake and adverse sequelae and is now the most common route of administration in human asthmatic patients. Nebulisation of sodium cromoglycate and other compounds has been and still is used. The disadvantages of nebulisation are that the size of the particles produced tend to be relatively large, the time to administer a single treatment may be 10–15 min, the nebulisers themselves are quite expense and they must be maintained carefully to function optimally. Recently , a number of devices known as 'spacers' have been developed to allow administration of medication designed for human use and packaged in metered dose inhalers (MDI) to horses.

Figure 1: Equine Haler™ spacer for delivery of pharmaceuticals from metered dose inhalers.

Senior Scientists Dr David Marlin and Dr Colin Roberts and imager Jo Weekes recently evaluated a new design of spacer for administering medications in MDI's to horses. The Equine Haler™ was developed in Denmark by Equine Healthcare APS. The efficacy of the Equine Haler™ was evaluated using fluticasone propionate (Flixotide Evohaler, Glaxo) labelled with a radioactive marker. The amount and distribution of the labelled drug reaching the lungs was determined in 6 horses and 2 ponies. Each horse was administered 3.5 µg/kg flutciasone propionate using the Equine Haler™, then sedated while scintigraphic images of the right lateral lung were obtained.

The mean dose delivered into the lung was 8.2% of the metered dose (250 µg per actuation). This compares very well with other devices currently on the market. The distribution of the particles throughout the lung was extremely good, with penetration to the lung periphery. As expected, there was significant deposition on the outer nostril as well as some deposition in the nasopharynx.

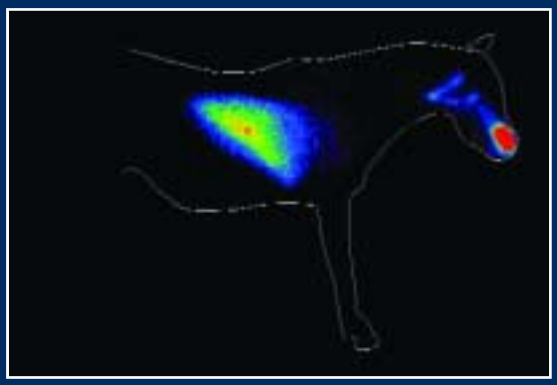


Figure 2: Distribution of ^{99m}Tc-labelled fluticasone propionate after administration of 3.5 µg/kg bodyweight using the Equine Haler™.

The Equine Haler™ appears to be well tolerated and easy to use and achieves a good level of drug delivery into the lung.

Further information about the device itself can be found at www.equinehaler.com

Future CPD

Day courses

- 9th October: Radiography – Abdomen 2
- 9th November: Medical neurological emergencies
- 22nd March (2002): Surgical neurological emergencies

Continuing Education evening courses

- 9th October: Ophthalmology - How to get the most from your ophthalmoscope
- 13th November: Oncology - Oral tumours
- 11th December: Imaging – Interactive film reading & interesting cases

Details on all of our courses are available from Mrs Karen Bond on 08700 502540

If you do not already receive your own copy of AHT Veterinary News and would like to, please contact John Owen or Karen Bond on 08700 502540. Alternatively, you can email us at smallanimal.centre@aht.org.uk and we will be pleased to include your name and/or practice on our database.

Chairman's appeal

Please see Ted Chandler's letter enclosed with this mailing for details of our appeal.

Animal **Health** Trust

the science behind animal welfare