Cardiorespiratory Centre moves to Willows

We are delighted to announce that Willows are now able to offer a new Cardiorespiratory Service, with the arrival of Mike Martin MVB DVC MRCVS, RCVS Specialist in Veterinary Cardiology and Chris Linney BVSc GPCertSAP CertAVP(VC) MRCVS Veterinary Cardiology Clinician.

Mike and Chris are looking forward to bringing their services to Willows and working alongside the multi-disciplinary team. They are available to see a wide range of cardiac and respiratory problems, as well as performing interventional cardiac surgery including PDA closure, balloon valvuloplasty for pulmonic stenosis and pacemaker implantation.

The cardiology team at Willows specialise in the diagnosis of difficult and complicated cardiac and respiratory problems, working closely with the medicine and soft tissue Specialist teams.

The symptoms of coughing, breathing difficulties or fatigue on exercise can all be attributed to either heart or lung disease. As patients with cardiac and/or respiratory problems require prompt investigation we aim to see our patients on the same day where required. Our team are also happy to provide telephone advice to veterinary surgeons on the management of cardiac and respiratory cases.

Mike and Chris will be involved with Willows’ CPD programme for 2016. The first event hosted by Mike will be a day event, Introduction to ECG interpretation for Vets on Wednesday 9th March. Included in the day is a copy of Mike Martin’s book, Small Animal ECGs (new 3rd edition).

See inside for your comprehensive pull out calendar guide to Willows CPD programme 2016!
Sunny, a three-year eight-month old male Belgian Shepherd dog, presented to Willows’ internal medicine service with a two-week history of coughing. On presentation, Sunny was found to be bright and alert. On thoracic auscultation, increased bronchoavesicular lung sounds were identified over the right side.

The referring veterinary surgeon had included a thoracic radiographic study for Sunny (figure 1). These images show a dorsoventral, left and right lateral view of the thorax. The radiographs have been taken with great care and are of diagnostic quality. The radiographs show a subtle, poorly defined region of increased soft tissue opacity centred on the right caudal lobar bronchus. On the left lateral view this region manifests as a tubular shaped region of increased opacity in the caudodorsal lung field. This region of increased opacity largely manifests as an alveolar pattern. The right lateral radiograph appears within normal limits.

After initial assessment of Sunny by Willows’ medicine team, and appraisal of the referring veterinary surgeon’s radiographs, it was decided that more information would be obtained by a computed tomography (CT) examination of the thorax.

Sunny was anaesthetised and a CT examination was performed in sternal recumbency with the thoracic limbs protracted, in order to prevent streaking artefacts over the cranial thorax (figure 2).

The CT study showed a luminal, well defined, frond-like filling defect surrounded by air at the base of the right caudal lobar bronchus. The structure appeared as multiple repeating hyperattenuating structures that emanated from a central stalk. The wall of the bronchus was mildly thickened. The first and second order bronchi were moderately dilated (bronchiectasis). Small focal regions of alveolar pattern are identified in the right caudal lobe, typically adjacent to the bronchi. Otherwise the study was within normal limits. A contrast examination of the patient was not deemed necessary in this case. The radiological diagnosis was right caudal lobar bronchial foreign body (likely plant material) and focal regions of right caudal lobar bronchopneumonia.

Sunny underwent a bronchoscopic examination by the internal medicine service and an ear of corn was removed from the right main stem bronchus (figure 3). There was evidence of focal bronchitis...
What’s your diagnosis?

**A 15-year-old male neutered Persian cat**

Fluffy, a 15 year old male neutered Persian cat presented with a history of sneezing and bilateral mucopurulent nasal discharge for two months. There was a mild improvement with antibiotic therapy, but five days prior to presentation right-sided epistaxis had been observed. Fluffy was bright with a normal thirst and appetite. Findings on physical examination were unremarkable. Routine haematology and biochemistry parameters, as well as coagulation times, were within reference ranges. A nasal CT scan was obtained under general anaesthesia (see images). There was no contrast-enhancement.

[Images of CT scans]

**What are your differential diagnoses for this case and how would you interpret the CT images? How would you investigate this case further?**

...for the answer see page 9
Willows continues to expand...

Willows Specialist Services have expanded seeing the arrival of many new faces over the past six months. We are delighted to be able to welcome all new members to the Willows multi-disciplinary team. This is an exciting time for us as our growth continues, we are able to offer a comprehensive referral service and outstanding care for our patients and clients.

Elisabetta Treggiari  
DVM MSc MRCVS  
Veterinary Oncology Clinician

June saw the arrival of Elisabetta to the Oncology team. Having developed a passion for Oncology early on, Elisabetta completed an internship in a private cancer and critical care centre and an approved ECVIM-CA (oncology) residency at Liverpool University before joining Willows. Elisabetta is currently studying towards the European Diploma in Small Animal Oncology.

Andrew Parry  
MA VetMB CertVDI DipECVDI MRCVS  
RCVS and European Specialist in Veterinary Diagnostic Imaging

Andrew rejoined Willows imaging team in July. Andrew’s research interests include, amongst other things, computed tomography angiography and in particular morphology of portosystemic shunts. He has numerous publications in the field of diagnostic imaging in peer-reviewed journals and is the author of several book chapters within the field.

Rodrigo Pinheiro de Lacerda  
DVM MRCVS  
Veterinary Ophthalmology Clinician

Rodrigo joined Willows in April to enhance the Ophthalmology team. He has a strong passion for surgery and enjoys the challenges of the daily clinical cases. Rodrigo holds the General Practitioner Certificate in Ophthalmology and is currently studying for the Diploma of the European College of Veterinary Ophthalmology.

Ophthalmology

The ophthalmology team offer a comprehensive service, in addition to the routine ophthalmic examination techniques of close and distant direct ophthalmoscopy, indirect ophthalmoscopy, slit-lamp biomicroscopy and tonometry (rebound or applanation), other more advanced diagnostic techniques such as gonioscopy, ocular ultrasonography and electroretinography are in everyday use.

Oncology

The oncology team are able to perform highly advanced diagnostic investigations on patients with tumours, allowing us to diagnose and stage the cancer so that we may give the best advice regarding management options and outlook. Our Specialists are able to provide a whole range of chemotherapy treatment for pets with certain types of tumour.

Diagnostic Imaging

Willows provides a comprehensive imaging service for all of our veterinary patients that is second to none in the UK. Imaging forms the cornerstone of many of the investigations required by our other specialties and it is comforting to know that our superb state-of-the-art all digital GE imaging facilities are backed by our highly experienced imaging team.

Virginie Barberet  
DVM PhD DipECVDI FHEA MRCVS  
European Specialist in Veterinary Diagnostic Imaging

Virginie joined the imaging team in August, taking the team to five. Virginie sits on the ECVDI Board as treasurer. She is also a reviewer for various peer reviewed journals and has several publications in the field of diagnostic imaging in peer-reviewed journals.
Lorna Arrol | MA Vet MB DipECVN MRCVS
European Specialist in Veterinary Neurology

In September Lorna joined the neurology team. Lorna gained the Diploma of the European college of Veterinary Neurology in 2012. Previously Lorna worked in two multi-disciplinary referral centres in the UK as a neurologist and neuron surgeon. She enjoys all aspects of neurology and neurosurgery and in particular, inflammatory diseases of the CNS, epilepsy and spinal surgery.

Faye Swinbourne | BVM&S MVetMed DipECVS MRCVS
European Specialist in Small Animal Surgery

Faye joined Willows’ soft tissue team in September. She became a diplomat of the European College of Veterinary Surgeons in 2014. Faye has a keen interest in all aspects of soft tissue surgery and a particular interest in thoracic and abdominal emergency surgery.

Andrew Kent | BVSc MRCVS
Small Animal Medicine Clinician

Andrew joined the internal medicine team in October. He is currently studying for the Diploma of the European College of Internal Medicine. Andrew has a particular interest in gastroenterology and immune-mediated diseases, in addition to a major interest in interventional endoscopy and radiology. He regularly performs a wide range of interventions including, gastrointestinal, respiratory and urological procedures.

Our Specialists within the different disciplines work closely with one another, and with owners, to ensure that all the clinical needs of our patients are met.

Other disciplines which Willows offer include: Orthopaedics, Spinal Surgery, Joint Replacement, Oncology, Cardiology, Dermatology, Anaesthesia and Analgesia.

Neurology

The neurology team are able to provide a full range of investigations, evaluating patients with spinal or head trauma, cerebro-spinal fluid analysis, electro-diagnostic testing for neuromuscular disorders and muscle and nerve biopsies where required in addition to neurosurgery. This enables us to offer a complete neurology service and we are happy to see cats and dogs with any neurological problems, including those referred for neuromuscular, spinal or brain diseases.

Soft Tissue Surgery

Many soft tissue surgical patients require intensive nursing and input from internal medicine and anaesthesia/critical care teams. Willows are able to provide these elements of patient care and the soft tissue surgeons work closely with our dedicated nursing staff and all our other specialists, enabling us to optimise the care and outcome for each surgical case.

Internal Medicine

The medicine team are happy to see dogs and cats with a wide variety of problems including those with acute or chronic gastrointestinal conditions, anaemia, bleeding problems, nasal disease, liver disease, simple or complex endocrine problems and renal disease. Management of these cases often involves a team approach with our cardiology, neurology, soft tissue and imaging teams.
<table>
<thead>
<tr>
<th>JULY</th>
<th>AUGUST</th>
<th>SEPTEMBER</th>
<th>OCTOBER</th>
<th>NOVEMBER</th>
<th>DECEMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>17</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>22</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>26</td>
<td>26</td>
<td>26</td>
<td>26</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>27</td>
<td>27</td>
<td>27</td>
<td>27</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>31</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>31</td>
</tr>
</tbody>
</table>

- **Internal Medicine**: Film Reading Evening
- **Film Reading Evening**: Management of canine mast cell tumours
- **Heads Up**: How to approach the patient with head injuries.
- **Management of canine mast cell tumours**: Internal Medicine
- **Surgical management of ear disease**: Film Reading Evening
- **Imaging approach to the thoracic emergency case**: Film Reading Evening
- **Introduction to ECG interpretation for nurses**: Cardiology
- **Anaesthesia for the very young and very old**: Neurology
- **Don’t go Belly Up – Abdominal day**: Orthopaedics

**JULY**
- **Open Your Eyes to Eyelid Disorders**

**SEPTEMBER**
- **Film Reading Evening**
- **Management of canine mast cell tumours**

**AUGUST**
- **Film Reading Evening**
- **Heads Up**: How to approach the patient with head injuries.
A 12 year old, MN cross breed dog was referred to the Oncology service to investigate a history of lethargy, decreased appetite and weakness associated with hypercalcemia.

On physical examination, Charlie was very quiet although alert and he had pale pink mucous membranes, with CRT >2 sec. Thoracic auscultation showed a regular heart beat, with a heart rate of 100 bpm, consistent with femoral pulses. Abdominal palpation revealed hepato/splenomegaly. There was no peripheral lymphadenopathy. Rectal temperature was 38.2°C. Charlie was also exhibiting a stiff gait and struggling to walk around the consult room.

Routine blood tests showed total hypercalcemia and hyperproteinaemia with hyperglobulinemia. Ionised hypercalcemia was also present. Further investigations included thoracic and abdominal radiographs, abdominal ultrasound and serum protein electrophoresis.

Thoracic radiographs showed numerous lytic lesions at the level of the thoracic and lumbar spine (figure 1, 2).

Abdominal ultrasound showed a diffusely heterogeneous liver and spleen: fine needle aspirates showed the presence of atypical plasma cells (figure 4). A serum protein electrophoresis was performed to investigate the hyperglobulinaemia. This showed a biclonal gammopathy, which is typically related to overproduction of neoplastic immunoglobulins (figure 3).

The final diagnosis was multiple myeloma. Charlie was started on a melphalan/prednisolone protocol and his globulin levels significantly reduced after 2 weeks of treatment. He made excellent progress and the hyperglobulinaemia resolved after the first 2 months. At that point, prednisolone was discontinued and melphalan continued at a lower dose.

Common causes of hypercalcemia and hyperglobulinemia in dogs include lymphoproliferative disorders such as multiple myeloma, lymphoma and leukaemia. Hyperglobulinaemia and plasma cell hyperplasia can also be seen in dogs infected by Leishmania spp. and this must be considered as a differential diagnosis if dogs have travelled to endemic countries.

The prognosis is very different between the types of haematopoietic neoplasms, and multiple myeloma certainly carries the best prognosis in the long term.

**Figures**

![Figure 1 and 2: Evidence of bone lytic lesions (arrows) on the lumbar (Fig. 1) and thoracic (Fig. 2) vertebrae, suggestive of multiple myeloma](image1.png)

![Figure 3: Serum protein electrophoresis trace suggestive of a biclonal gammopathy. Note the spike at the gamma globulin level and the corresponding lower albumin level](image2.png)

![Figure 4: Splenic aspirates showing evidence of atypical plasma cells](image3.png)

continued...
Hyperglobulinaemia can cause hyperviscosity syndrome, with associated bleeding disorders, renal failure and lethargy with or without collapsing episodes.

Charlie will need to continue on melphalan in the long term, but chemotherapy with this agent is overall well-tolerated. Myelosuppression can occur but gastro-intestinal toxicity is very rarely observed.

Reported overall median survival time for dogs with multiple myeloma on treatment with melphalan chemotherapy is 540 days. In some cases, relapse may occur and different chemotherapy drugs, including vinca alkaloids and other alkylating agents such as cyclophosphamide, can be employed. The presence of hyperglobulinemia and ionised hypercalcemia should raise concerns for the presence of underlying neoplasia with associated paraneoplastic syndromes and should always be investigated with a serum protein electrophoresis, followed by additional diagnostic imaging.

A bone marrow biopsy can be performed if no significant findings on radiographs, abdominal ultrasound or fine needle aspirates of lymph nodes and internal organs.

Elisabetta Treggiari  DVM MSc MRCVS  Oncology Clinician

The differential diagnoses for nasal discharge and epistaxis include neoplasia, fungal rhinitis (Cryptococcus, Aspergillosis) and severe chronic rhinitis. Nasal foreign body and tooth root abscess are both less likely in a case with bilateral signs and epistaxis.

The CT scans reveal patchy fluid accumulation within both nasal chambers (images 1 and 2) extending caudally into the left frontal sinus (image 3). There is a moderate degree of turbinate atrophy/destruction. The absence of contrast uptake makes neoplasia unlikely, and these findings are consistent with destructive rhinitis.

In order to investigate this case further, rhinoscopy was performed using a rigid endoscope. This revealed turbinate loss and increased volumes of mucus within both nasal cavities. Nasal biopsies were taken for histopathology and culture. Histopathology revealed marked lymphoplasmacytic, neutrophilic and focally eosinophilic rhinitis, with turbinate bone remodelling. Culture yielded a profuse growth of Aspergillus fumigatus consistent with a diagnosis of feline sino-nasal Aspergillosis (SNA).

Upper respiratory tract Aspergillosis is rare in cats, although brachycephalic cats (as in this case) appear to be predisposed. There are two forms of the disease: SNA and sino-orbital Aspergillosis (SOA). SNA is most commonly caused by A. fumigatus and A. niger and SOA by A. felis. Both forms have their onset in the nasal cavity, with SOA resulting from the extension of infection to involve the paranasal structures including, but not limited to, the orbit. SNA carries a favourable prognosis with treatment (using topical and/or systemic antifungal agents), whereas SOA carries a poor prognosis.
Management of canine *Pseudomonas* spp. otitis

*Otitis is a very common problem in small animal veterinary practice, affecting 5-20% of the canine population. Despite its prevalence, otitis can become a very frustrating problem to manage, and this is largely due to its multifactorial nature. *Pseudomonas* spp. are rod shaped bacteria that frequently complicate cases of chronic otitis. These bacteria are often resistant to many of the commonly used antibiotics, and also frequently damage the tympanic membrane resulting in otitis media. A methodical approach to these cases is therefore paramount for a successful outcome.*

**GENERAL APPROACH**

**Take a detailed history**
A thorough history is vital for all cases of canine otitis. This may provide information about whether otitis is part of a more widespread skin disease such as an allergy or endocrinopathy. Questioning to establish if the infections have been recurrent or persistent is also important, as the latter might suggest a particularly resistant strain or extension into the middle ear cavity. Otitis media can also affect the patient’s hearing and balance, facial nerve function and result in Horner’s syndrome, so questions relating to these clinical signs should be included in the history.

**Examination of the ears**
Detailed examination of the ears with an otoscope is essential. This allows the canals to be assessed for perpetuating factors like otic discharge, glandular hyperplasia, stenosis and damage to the tympanic membrane. Unfortunately, effective otoscopy in conscious dogs with *Pseudomonas* spp. infections is often extremely difficult due to the immense pain that these infections cause and the copious exudate that usually accompanies them. It is therefore often necessary to anaesthetise patients to irrigate the ears and examine the canals in detail. As these ears are often ulcerated and exquisitely sensitive, examination and irrigation under sedation is not recommended.

**Assess for perpetuating factors**

1. **Otitis media**
   Otitis media is commonly seen as an extension of chronic *Pseudomonas* spp. otitis externa. It can be diagnosed by visualising a defect in the tympanic membrane with otoscopy, although effective visualisation of this structure can often be quite challenging even under anaesthetic due to the inflammatory changes present. The use of a video-otoscope greatly assists this process, with its greater magnification and much brighter light source.
   If the tympanic membrane cannot be visualised, otitis media remains a possibility. In fact, otitis media can be present even if the tympanic membrane appears intact as this structure is able to regenerate following previous damage. Imaging of the ear canals is recommended in all cases of chronic otitis and helps to identify material within the middle ear cavity. Plain radiographs can be taken using rostro-caudal open mouth, dorso-ventral and lateral oblique views but the sensitivity of this technique is relatively low. CT and MRI offer a much greater sensitivity and referral for these imaging modalities is recommended if there is doubt about the status of the middle ears. CT in particular is relatively quick to perform, and provides excellent detail of the structures associated with the middle ear.

2. **Glandular hyperplasia**
   Chronic and severe inflammation within the ear canals is commonly seen with *Pseudomonas* spp. infections. This results in hyperplastic changes to the ceruminous glands producing a ‘cobblestone’ appearance to the walls of the canals. These changes create pockets where discharge and infection can persist and must be addressed with anti-inflammatory medication.

3. **Stenosis**
   Some ear canals are so inflamed that the lumen begins to narrow. With chronicity, calcification of the ear canal cartilages can occur resulting in irreversible changes. If the narrowing cannot be reversed with anti-inflammatory medications, the prognosis for medical management becomes poor.

**Confirm that infection is present and where it is present**
Cytological samples should be taken from the ear canals to confirm the presence of microbes. If otitis media is present, the middle ears should be sampled too. When the tympanic membrane is intact, a myringotomy is performed to perforate the membrane and sample the middle ear. This is a delicate procedure with potential complications, so referral to manage these cases is advisable if you are not comfortable with this technique. Samples of both external and middle ear compartments for culture are also recommended in cases of *Pseudomonas* spp. due to their unpredictable sensitivity profile.

**Medical treatment**
The treatment for *Pseudomonas* spp. infections limited to the external ears should be based on the culture and sensitivity results. It is usually possible to use one of the licensed topical ear medications

continued...
for these cases, although on-going ear cleaning/rinsing will be needed to reduce the build up of discharge. Water-based cleaners are recommended for Pseudomonas spp. infections with a frequency of 2-3 times weekly.

Pseudomonas spp. infections of the middle ear can often be treated topically, although there are no licensed treatments in the UK. Compounded ear medications containing injectable antibiotics mixed with water-based diluents such as saline or TrisEDTA are recommended, and should be based on culture and sensitivity results where possible. Ear cleaners should be used cautiously when the tympanic membrane is not intact. However saline, TrisEDTA and chlorhexidine (<0.2%) may be used safely for this purpose, again with a frequency of 2-3 times weekly. The use of oral antibiotics to treat Pseudomonas spp. otitis media is controversial, as antibiotics may not penetrate to the affected area in therapeutic concentrations.

Surgical treatment

There are a numbers of instances when surgery for Pseudomonas spp. otitis is recommended. These include severe changes to the bone of the tympanic bulla secondary to otitis media and neoplasia of the ear canals. It is often necessary to perform advanced imaging such as CT or MRI to diagnose these conditions. Intractable pain and persistent and refractory stenosis of the ear canals are also surgical indications. Finally, there are some cases of Pseudomonas spp. otitis that despite every effort, do not respond to treatments as planned, and surgery is ultimately recommended. As many of the patients requiring surgery have middle ear involvement, most require total ear canal ablation and bulla osteotomy, and referral to a Specialist soft tissue surgeon is recommended.
Vaccination for Canine B-cell Lymphoma and some other aggressive cancers

This is an exciting, cutting edge treatment which has been brought about by lots of research and an increased understanding of cancer biology; including how we can harness the immune system to help in our fight against cancer. This technique is currently, to the author’s knowledge, only being performed in the UK at Willows Referral Service.

The other advantage or this pioneering vaccination is that this new treatment is given alongside current standard treatment options – so patients need not forego the “tried and tested” options – this is simply an additional therapy to the norm.

Dogs with lymphoma present in a variety of ways but most present with firm, non-painful massive enlargement of the superficial lymph nodes. Often dogs are still very well when diagnosed, but the disease usually progresses very quickly without treatment. Chemotherapy is typically extremely effective for dogs with B-cell lymphoma, but in most cases the survival time averages a year even with the most effective chemotherapy agents, due to the cancer becoming resistant in the later stages.

In humans, the addition of drugs called monoclonal antibodies (such as Rituximab) have massively improved the outcome of patients with B-cell lymphoma – but these are currently unavailable for use in dogs (though there are clinical trials of a canine version of Rituximab underway).

For dogs with lymphoma (particularly whilst monoclonal antibodies are unavailable) there are other immunological approaches to treatment that have been provisionally shown to be effective in increasing remission and survival times in addition to traditional chemotherapy approaches.

One promising approach that has emerged is the delivery of an autologous (using the dogs’ own tumour cells) vaccine consisting of hydroxyappatite ceramic powder and proteins purified from the patients’ own individual tumour, such as Heat Shock Proteins (HSPs). HSPs are synthesized under stress situations (including cancer) to protect the body’s cells from damage and play a key role in immune stimulation. HSPs are chaperone proteins; simplistically they bind to proteins/antigens on the tumour cells and “present” them to the immune system – helping to stimulate an anti-tumour immune response.

In dogs with B-cell lymphoma there are some provisional studies showing improved outcome when this vaccine combined with traditional chemotherapy and the safety and tolerability appears to be excellent. The patient is required to undergo a lymph node (or whichever tissue is affected by lymphoma) biopsy here at Willows to enable creation of the vaccine, which is performed in-house using a specialised biochemical technique to extract tumour-associated proteins and HSPs. The injections are given over several weeks, administered concurrently with standard chemotherapy. Unfortunately due to adverse effects in dogs with T-cell lymphomas the vaccine is not suitable for this group of patients. In this instance, Willows can advise on the most up-to-date treatment available for animals with T-cell lymphoma.

This vaccination technique, given that all tumours possess proteins capable of immune stimulation, is not limited simply to B-cell lymphoma. Indeed other tumours, including aggressive cancers with no suitable/viable chemotherapy options may also benefit. Referring vets can discuss cases with a Willows oncologist if referral is sought.

Willows at BSAVA Congress 2016

Once again Willows will be exhibiting at BSAVA Congress (7-10 April 2016, NIA, Birmingham), giving delegates the opportunity to meet with vets and nurses from our multi-disciplinary Specialist team.