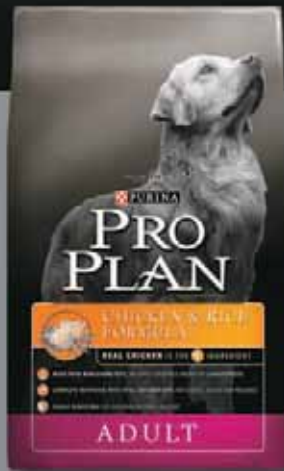


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Veterinary Specialist Group

# The Next Step

Issue 4, April 2006

EXPERTISE • TECHNOLOGY • COMPASSION

## VSG in 2006 - Technology Updates

### Surgery

The last year has been a busy, exciting one for Veterinary Surgical Consultants (Alex, Richard and five surgical nurses). We have changed completely to the Slocum TPLO procedure for cranial cruciate ligament injury and now have all blade and plate sizes to operate patients from 6 - 100kg. A new 9 hole 3.5mm broad TPLO plate has improved stabilisation of >50kg patients. Results continue to be excellent.

After 20 years I have finally upgraded my old Synthes drills to Hall drills, pin drivers, oscillating saws and neurosurgical burrs. Our arthroscopy system has also been added to with a new camera and a power shaver that allows removal of fragmented coronoid processes and other bony lesions without open surgery. Richard and I have developed protocols for management of shoulder and elbow lamenesses that is heavily dependent on arthroscopic diagnosis and treatment. We regularly perform arthroscopic biceps tendon releases for bicipital tendonitis. This year will see purchase of a cystoscope for diagnosis of ectopic ureters and potential treatment of urethral sphincter mechanism incompetence with collagen injections in the trigone.

We also plan a prospective study on the efficacy of pancarpal arthrodesis using hybrid plates in working dogs. This will involve assessment over an 18 month period.



### Medicine

The medicine department has been busy over the summer. It has been a while coming but we have recently taken delivery of two new digital Olympus endoscopes. The picture quality is fantastic. We are able to record the live action on to DVD as well as taking still photos that can be printed immediately for the owners to see. The medicine department also has purchased a Holter monitor for

24 hour ECG. This is also digital - we e-mail the data to the USA and receive a report within two days.

Mark Robson is planning to investigate laparoscopy at ACVIM later in the year. Laparoscopy may be available by the end of 2006. Watch this space!



### Radiology

The Radiology department has already made some significant investments this year. One of the two new purchases is a small van used for the transport of animals for off-site CT and MRI. The new van is well kitted out to ensure optimum patient comfort during transportation.

All good things come to an end and after many years of service the Gigantos E x-ray generator failed and has been replaced by the CPI Indico 100 Rad Series x-ray generator. The new unit is a high frequency x-ray generator featuring state-of-the-art computer-based control to ensure minimum patient dose, excellent reproducibility, and superior image contrast.



## Evaluating the lumbosacral intervertebral disc space

- by Chris Warman

As clinicians we are frequently called upon to radiographically evaluate the lumbosacral intervertebral disc space, particularly in large breed dogs with suspected cauda equina syndrome. Interpretation of radiographs of this region can be difficult for the experienced and the inexperienced alike. There is a tendency to give more weight to radiographic pathology more easily identified on lateral views of the lumbosacral region than those identified in the ventrodorsal image. The lateral radiograph of this region makes for relatively uncomplicated viewing, with limited summation of structures and excellent separation between the anatomical structures. On ventrodorsal images the radiographic anatomy is more complicated, with subsequent superimposition of structures that can make interpretation more difficult. Complicating this issue is the fact that many radiographs of this region are taken concurrently with hip radiographs, with the hindlimbs in full extension and the x-ray beam is not aligned with the lumbosacral space.

The extended ventrodorsal of the pelvis, centred on the hips, will result in a large degree of a tangential obliquity being recorded at the lumbosacral space. As a result of this obliquity, a further increase in the summation of bony structures occurs in this region and this exacerbates interpretive difficulties. In extended positioning of the hips, there is concurrent extension of the lower lumbar spine, which results in dorsal compression of the lumbosacral intervertebral disc and hence the disc space inevitably appears narrowed, even when this may not be so. In the extended positioning, the sacrum tilts and the cranial sacral facets glide forward over the caudal articular facets of L7. Even when the beam is centred on the lumbosacral space, spinal extension will result in an increased proportion of the dorsal sacrum positioned over the caudal L7 on resultant images.

To overcome many of these difficulties when obtaining ventrodorsal images of the lumbosacral region, a novel view can be utilized. A fully flexed ventrodorsal view of the region can be performed. The patient is placed in dorsal recumbency and the hindlimbs are pulled forward to lie parallel with the caudal trunk (see figure 1). The x-ray beam is centered at the lumbosacral intervertebral disc space for the exposure.

The fully flexed ventrodorsal view of the lumbosacral space increases the separation between L7 and the sacrum with less subsequent superimposition. With the beam aligned at the lumbosacral space, the transverse processes of L7 are frequently free from summation with the ilial wings. The increased separation

assists in the identification of congenital anomalies such as transitional vertebra, which can be a significant finding in cases of cauda equina syndrome. This view also increases the separation of the lumbosacral articulation and improves definition of the articular facets. The end plates of both the sacrum and L7 are now parallel to the beam and both the end plates and the intervertebral disc space can be more accurately assessed. The fully flexed view of this region will reveal early lateral spondylosis. Spondylosis generally can be detected earlier in the flexed ventrodorsal images than it can in lateral views of the lumbosacral region.



Positioning for flexed ventro-dorsal view of the lumbosacral region



Flexed ventro-dorsal view of lumbosacral region with right-sided spondylosis

## Immune-mediated Neutropenia in the Dog

- by Darren Fry

Immune-mediated neutropenia is an uncommon but possibly under-reported condition in the dog. Concurrent immune mediated thrombocytopenia or anemia may occur and neutrophil destruction may be peripheral or within the bone marrow. Only a handful of cases have been described in the veterinary literature. The most recent (and largest) case series was published by Perkins et al in the Australian Veterinary Journal in 2004. In this paper, 5 cases were described. There does not appear to be an age, sex or breed disposition. Affected dogs present with a persistent and profound neutropenia with or without clinical signs of sepsis, fever or shock.

There are no specific anti-neutrophil antibody tests available in the dog and diagnosis requires a thorough work up to rule out other, more common causes of neutropenia such as infectious and inflammatory disease, neoplasia and drug-associated neutropenia. Underlying neoplasia should also be excluded. Given the relative rarity of the condition and the need to immunosuppress an already neutropenic animal, bone marrow cytology is strongly advisable as part of the work up.

Treatment is similar to that of other immune-mediated cytopenias and involves the use of immunosuppressive drugs together with initial antibiotic cover. Often, a prompt response to immunosuppressive doses of corticosteroids is seen. Four of the five dogs in Perkins' study showed a clinical improvement within 48 hours and regained a normal neutrophil count within 10 days. Due to the small numbers of cases reported, the optimum treatment regime for this condition has not yet been established. However, prednisone at an immunosuppressive dose with or without azathioprine is the usual initial choice of therapy. Cyclosporine may play a role and was certainly beneficial in Rupert's case. Cyclosporine offers the potential for treatment without many of the side effects of steroid therapy and the potential myelosuppressive effects of azathioprine. However at this stage, it remains an unproven and relatively expensive alternative.

Overall, the prognosis for dogs with immune-mediated neutropenia appears to be good from the limited numbers of cases reported. Approximately half of the affected animals seem to require long-term immunosuppressive therapy. As with other immune mediated cytopenias, several months of therapy are required and it appears to be very important not to abruptly withdraw therapy, as a second remission may be very difficult to achieve.



## Rupert's back working at Letham Gallery

- by Annie Write, The Write One

To the uninitiated Rupert is a run of the mill 13 year old black Labrador who lives with owner Anna Woodroffe, of Letham Gallery in Ponsonby, Auckland but Anna says there is more to Rupert than meets the eye.

"He is in fact the resident meeter, greeter and guard dog at



Rupert resting up

the gallery. In addition he acts as an unpaid assistant to the psychologist who has a waiting room at the gallery by both soothing patients with a wag of his tail and accompanying them

to their chairs. He encourages patients to pat him and relax before seeing the psychologist and, apparently offers a listening ear for the psychologist himself who occasionally needs someone reliable and discreet to talk to."

In May last year Rupert had a nasty experience when he was attacked by a local dog while out walking with Anna. He sustained nasty bites which then became infected.

I quickly took him to my local veterinary clinic. He was kept there overnight, and when no improvement was seen the next morning and a low white cell count was discovered, Rupert was referred to VSG"

VSG Internal Medicine Specialist Darren Fry examined Rupert. Rupert underwent blood tests, imaging studies and a bone marrow aspirate. Immune-mediated neutropenia was diagnosed and he was treated with immunosuppressive drugs. There was a good response to treatment but Rupert developed side effects from the initial therapy. Because of this, Darren prescribed cyclospora which is a drug normally given to human patients who have had an organ transplant.

Anna says after some worrying times her beloved Rupert is happy and well again and is back carrying out his duties at the gallery.

"I can't speak highly enough of the team at VSG - they are wonderful. Right from the lovely German intern who was there to the veterinary specialists and nurses themselves; - they looked after us both with care and compassion. While Rupert was the patient and received exemplary care, everyone made sure I was kept up to date and well informed as to his progress."

She says while VSG is a high tech environment it also has a caring and compassionate atmosphere which makes you feel comfortable and well looked after - "I know of other veterinarians who also refer their patients there so that's high praise indeed."

## Lumbosacral Intervertebral Disk Disease - by Richard Jerram

### aka Cauda Equina Syndrome

One of the most common causes of lower back pain in the dog is injury to the spinal cord from a herniated lumbosacral disk. This injury can cause permanent problems with normal activity and urination. Generally, treatment is required to reduce the amount of pain and the risk of permanent disability.

### DISK FUNCTION

The intervertebral disk of the dog acts as a cushion between the vertebrae to absorb the shocks and movements of normal activity. I like the analogy of the normal disk being like a "jelly doughnut" with a gelatinous centre and an outer ring of stronger fibrous tissue. In certain active breeds of dog (German Shepherd, Standard Poodle, Boxer, Labrador), the disk degenerates due to the "wear and tear" of normal activity. This can cause the outer part of the disk to protrude dorsally putting pressure on the spinal cord and cauda equina nerves. The pressure from the disk can also compress the nerves against the surrounding bone causing pain and nerve damage. In some cases, the vertebrae can be unstable causing additional thickening of surrounding tissue and more obvious clinical signs.

### CLINICAL SIGNS

The most common clinical sign is severe lower back pain. This can be seen as crying out, difficulty rising, reluctance to jump, unwillingness to exercise and a change in behaviour. Dogs with lumbosacral disease are often misdiagnosed with hip arthritis. Dogs, generally, do not improve with standard arthritis treatment. In the most severe cases, dogs lose the nerve control to their pelvic limbs, bladder, and anus resulting in paraparesis, paralysis and urinary or fecal incontinence.

### DIAGNOSIS

Knowledge of the dog's history is essential in helping make a diagnosis. A thorough neurologic examination is performed evaluating the head, all four limbs, and the spine. Pain can frequently be elicited with pressure applied to the lower back or when lifting the tail. I typically use both hands wrapped around the ilia with the thumbs pressing down on the lumbosacral space. Anesthesia and radiographs are recommended to show signs of a degenerative disk and to rule out hip dysplasia. To confirm the diagnosis, we prefer to have a CT scan of the lower back performed. This will allow accurate observation of the bones, disk, spinal cord, and the nerves where they exit the spine through the nerve canals. Alternatively, a myelogram can be performed. Unfortunately, because the contrast agent is injected into the subarachnoid space the nerve roots at the cauda equina are not identified. In some dogs, a myelogram does not delineate to the lumbosacral space necessitating an epidurogram which can be difficult to interpret.

### MEDICAL TREATMENT

Some dogs with only mild symptoms will respond to medical treatment. Generally this involves three or four weeks of strict confinement to a cage followed by 3-4 months of restricted exercise. Pain relief, generally non-steroidal anti-inflammatory medication is also advised. Dogs that do not improve or deteriorate with medical treatment are candidates for surgery.

### SURGERY

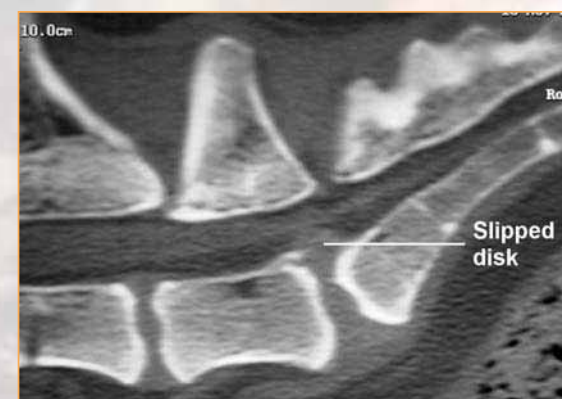
Dogs that have more severe clinical signs are also candidates for surgery. The most common procedure is a dorsal laminectomy, which involves drilling away the roof of the vertebrae to relieve the spinal cord and nerve pressure as well as allow the extraction of the disk material. The nerve root foramina can be enlarged to relieve further nerve pressure. For dogs with instability of the vertebrae, additional surgical stabilization may be performed. This is done using bone screws or pins and bone cement.

### RESULTS

Dogs that have pain as their only clinical sign prior to surgery have a 95% chance of improvement following surgery. Complete healing of the spinal cord and nerves can take up to six months to occur. Dogs with more severe symptoms may not completely recover but should be free from pain.

### PROGNOSIS

The prognosis for recovery is mostly dependent on the severity of the damage to the spinal cord and nerves. Surgical treatment is more successful when the only clinical sign is lower back pain.



CT reconstruction view demonstrating lumbosacral disk protrusion



Lateral post operative view of lumbosacral spinal stabilization

## Disk Surgery for Hamish's Back - by Annie Write, The Write One

Hamish is a six year old Airedale terrier who has always taken a laid-back approach to life's adventures, including his 13,000 mile relocation from Scotland and this was just fine with owners Dr's Bruce Russell and Ailsa McGregor from West Harbour in Auckland. Ailsa describes Hamish as "not the speediest dog in the world but always very lovable, sweet-natured and keen for a walk." She says last year Hamish was getting even slower than normal. He couldn't jump into the car anymore and he had a problem getting up stairs - in fact moving about sometimes became a real challenge for him.

"Hamish was still perky but getting about was an effort. Then one morning in August, when I lifted him into the car, he howled in pain - and he also started to whimper occasionally when there didn't seem to be any reason for his discomfort so we decided it was time to consult the professionals."

They took Hamish down to their veterinarian Bruce Waldoock at West Harbour Veterinary Clinic, for a thorough examination. After a series of tests Bruce found Hamish had a problem with his back and neck. Bruce says Hamish presented with intermittent crying and whimpering and exhibited periodical lameness in his left hind leg. "Initially it looked like he had a cruciate problem - he had pain in extension to both joints and discomfort with his stifle. We undertook further investigation under anaesthetic so I could assess the stifle." During the examination it became obvious it was not the stifle and, following discussions with Ailsa and Bruce, Hamish was referred to Veterinary Specialist Group (VSG) for further tests and treatment. "I'm a great fan of those guys at VSG and feel fortunate to have them just down the road for referrals if we need their help. It is great to be able to refer patients to VSG in situations where we feel those patients may benefit from additional expertise and access to their range of specialist equipment. VSG has one of the leading veterinary facilities in the Southern hemisphere and if they can't help, no one can."

Ailsa says both she and Bruce work in the field of Neuroscience at the University of Auckland and they had their own thoughts on what was happening with Hamish - they were concerned he may have a neurological problem and were happy he was being referred onto the VSG for specialist care.

"Hamish is such a sweetie and seeing him in pain was difficult for us and, of course, much worse for him. We wanted to get him the best help possible."

She says VSG Specialist Surgeon Richard Jerram did a myelogram to examine his spine and discovered a slipped disk near his tail. The collapsed disk had in turn trapped nerves near his tail giving him referred pain to his legs.

Richard recommended he operate to remove the top of the disk and insert a couple of large screws to hold the affected vertebrae apart and relieve pressure on the nerves. Ailsa says Richard carefully explained the procedure and reassured them about the risks of anaesthetic since Hamish also had a heart murmur.

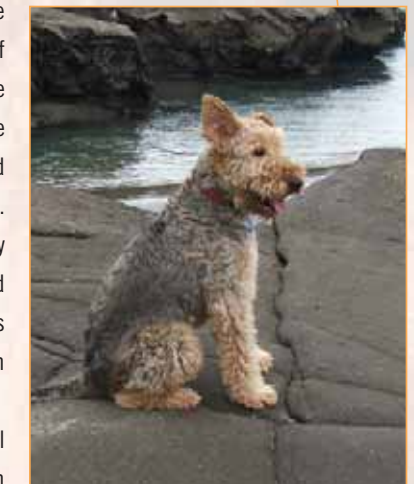
"The operation was successful and after the operation Hamish

recovered really well. Initially we had to keep him on a regime of restricted exercise and keep him off the stairs so he could heal well. Although he was sore and sported a bald patch and plenty of stitches he was soon on the mend and back to his old self. In no time he was moving better - far better than normal!"

Ailsa says the care and compassion that they all experienced at VSG was amazing.

"Everyone from the front desk staff to the hands-on specialist veterinarians was so kind and the care was outstanding. Nothing was a bother and they took excellent care of both Hamish and us too! As researchers, we were very interested in the procedure and the VSG staff took time to explain and go through the x-rays and test results with us."

Hamish spent a week at VSG recovering post-op and Ailsa says they were encouraged to phone up and get updates on his condition - "in fact everyone made such a fuss of him that he didn't seem to miss us at all."



## The Pfizer Internship at Veterinary Specialist Group

VSG in conjunction with Pfizer New Zealand are pleased to welcome Dr. Ben Wernham as the 2006 Pfizer Intern @ VSG. Ben completed his veterinary degree at Massey University in 2005. Following the completion of his twelve-month internship, he hopes to pursue further clinical specialist training through the North American residency program.



The Pfizer Internship is offered to new graduates of Massey University annually and is a fixed twelve-month position from December to December of the following year. The position offers concentrated, supervised, in-hospital training through services in small animal surgery, internal medicine and diagnostic imaging. Pfizer New Zealand has been a key contributor to the success of the programme.

### The objectives of the programme are:

1. To prepare the intern for postgraduate specialist training (internship, residency, research) at university teaching hospitals overseas.
2. To provide the intern with an opportunity to develop an understanding of the clinical management of challenging small animal medicine and surgery cases.
3. To allow the intern to learn professional publication and presentation skills.
4. To provide the intern an opportunity to develop skills in client communication, medical record keeping, and literature review.

The intern has no primary case responsibility but works alongside the specialist during the admission of complex cases referred to the Veterinary Specialist Group hospital. During the year, the intern will develop the clinical skills required to assess, diagnose, and treat these patients with the opportunity to refine fundamental skills including catheter placement, blood collection, fluid therapy, anaesthesia management, analgesia, transfusion medicine, and the acquiring and interpretation of imaging studies and clinical pathology.

If an animal proceeds to surgery, the intern is scrubbed in as surgical assistant, getting first-hand experience of general surgical principles and specific techniques. The monitoring, management, and care of hospitalised patients are a major part of the intern's duties that extend to weekends and after hours.

Dr. James Sutherland-Smith, the 2003 Pfizer Intern @ VSG is currently completing the second year of a residency-training program in radiology (diagnostic imaging) at Tufts University in Massachusetts, USA. This is a three-year program that will ultimately allow James to sit the Board Certification examinations for the American College of Veterinary Radiology.

Dr. Wendy Archipow, the 2004 Pfizer Intern @ VSG is currently completing an internship position at the prestigious University of Pennsylvania in Philadelphia. She has been successful in attaining a residency position in Small Animal Surgery at Purdue University in Indiana beginning July 2006.

Dr. Thurid Freitag, the 2005 Pfizer Intern @ VSG is currently completing her final work for a PhD degree from Massey University and then hopes to continue with clinical training in Europe.

Dr. Wernham and VSG would like to acknowledge the invaluable support of Pfizer New Zealand in making the Internship Programme a success. We wish Ben all the best for 2006 and beyond.



## Staff Focus: - Sharyn van Aalst

Sharyn is part of the veterinary nursing team, working in the medicine department. She is also involved in research & marketing for VSG.

### How long have you worked at VSG?

I started in December 1999, and was one of the original staff who moved into the new VSG hospital in November 2000.

### What do you enjoy about working at VSG?

Being part of a highly motivated, highly skilled team, working in a great facility.

### What do you enjoy doing on the weekends?

Walking the dogs at the beach, sometimes a bit of cooking, and catching up with friends for coffee.

### Tell me about your family

My husband John owns his own company, and my son has just started university this year, and works with his dad in the holiday breaks.

### What inspired you to become a veterinary nurse?

I have always had a soft spot for animals, and enjoyed a close bond with the family dog as a kid. After many years in the shipping industry, I was fortunate enough to be able to retrain into an industry that was of great interest to me.

### How many animals do you have at home?

I have two Dalmatian dogs, 2 tabby cats, and 4 chinchilla rodents.

### What is your favourite meal?

Smoked fish & a salad.

### And your favourite TV programme?

McLeod's Daughters.

### What is your favourite holiday destination?

Maui, Hawaii. We rent a condo on the beach there. The weather & scenery is beautiful, and you can do as much or as little as you like.


### If you won Lotto tomorrow, what would you spend the money on?

Give some money away to selected charities, and buy a house in Maui!



Sharyn van Aalst

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