Evaluating the lumbosacral intervertebral disc space

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 articular 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 sacral position 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 patient is placed in dorsal recumbency and the transverse processes of 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 spondylolysis. Spondylolysis generally can be detected earlier in the flexed ventrodorsal images than it can in lateral views of the lumbosacral region.

Immune-mediated Neutropenia in the Dog

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 treatment. 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 Latham Gallery

To the unintimated 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 minter, greater and guard dog at 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 put 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.

“It was a dreadful experience and initially he seemed to recover, but 24 hours later developed an infection and a high temperature. 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 cyclosporine 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.”