



**LUMBRYPARK**  
VETERINARY SPECIALISTS

# VET CONNECT



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Neurology Q&A



## Unprecedented challenges spring new opportunities!

Dear friends and colleagues in the Lumbry Park community,

Welcome to the first edition of Vet Connect. Supporting our colleagues in general practice is at the heart of everything we do and this year has brought new challenges for us all. Vet Connect aims to reach out to you, our community, with useful updates, clinical 'spotlights', and to remind you that we are here to help 24/7.

We strive to serve our community by existing as a continuation of your practice; offering a range of specialist referral services, emergency availability, case advice, free imaging reporting and outstanding client services. These include flexible payment options such as direct insurance claims and payment plans. Our clinicians continue to regularly create CPD webinars and further details can be found overleaf.

For many of us, 2020 has truly represented an 'annus horribilis', during which the COVID-19 pandemic has challenged our collective resilience. It is also true that times of extraordinary challenge bring out the best in our profession; most notably, feats of extraordinary kindness and empathy towards each other and the animals entrusted to our care.

In the year since we became Clinical Directors of Lumbry Park, we have seen considerable growth of the hospital and have continued to build an extraordinary team of professionals committed to providing a world-class standard of veterinary medicine and surgery to our patients. We are extremely thankful for the dedication and hard work of our staff who make Lumbry Park such an incredibly exciting place to be.

We welcome your feedback, and suggestions, on what we do, and we look forward to the opportunity to meet you in person or on the phone whenever we can.

Thank you for your continued support.

Very best wishes,

**Colin Driver and Tim Sparrow**

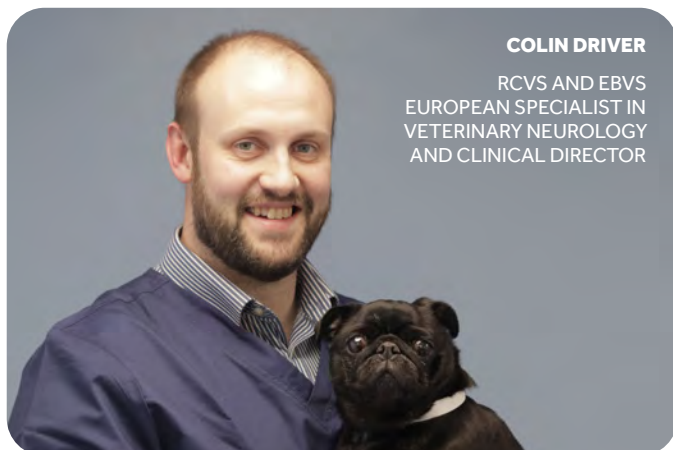


**COLIN DRIVER**



**TIM SPARROW**

# NEUROLOGY SPOTLIGHT CLINICAL Q&A



**COLIN DRIVER**

RCVS AND EBVS  
EUROPEAN SPECIALIST IN  
VETERINARY NEUROLOGY  
AND CLINICAL DIRECTOR



**JENNY BROWN**

BSC (HONS) BVM&S (DIST)  
GP CERT (FELINEPR) MANZCVS  
(MEDICINE OF CATS) MRCVS  
CLINICAL DIRECTOR  
BRACKEN VETERINARY CENTRE

**Jenny:** What clinical presentation should make me suspect meningitis – we see lots of dogs with pyrexia and hard to localise pain in general practice?

**Colin:** “We understand the concern – initial and mild cases of SRMA can be very difficult to identify clinically and can mimic a number of other infectious or inflammatory disorders. SRMA is an immune-mediated disorder, characterised by meningitis and vasculitis – the vasculitis is normally poly-systemic, so in that sense although we often consider SRMA to be a neurologic disease, inflammation of blood vessels is normally present in the heart, mediastinum and thyroid glands, amongst other areas. That being said, the inflammation is prominent in the blood vessels of the leptomeninges, so the cardinal clinical sign is spinal pain, which is typically worse in the neck. Much like in people with infectious meningitis, ventroflexion of the neck causes the most pronounced signs of painful vocalisation, so this is normally the test we consider to be most reliable. Pain can normally also be elicited along the lumbar spine, which helps confirm the problem is diffuse, not focal, as would be the case with other causes of neck pain such as intervertebral disc disease. Other common signs include guarding of the head and neck, arching of the spine and a stiff gait. We also often have yawning or opening of the mouth described to us as a common sign, but we assume this may be more a reflection of arthritis of the temporomandibular joint or myositis of the masticatory muscle, which are common epiphenomena. Neck pain and pyrexia can be related to other conditions, including immune-mediated polyarthritis (involving the vertebral facet joints), diskospondylitis, infectious meningitis (bacterial, protozoal, viral), migrating foreign bodies from the oesophagus, vertebral phsitis/osteomyelitis and neoplasia.”

**Jenny:** Are there any breed/age predispositions in dogs? And what about cats?

**Colin:** “SRMA can be seen in any dog breed, although Boxers, Beagles, Bernese Mountain dogs, Weimeraners and Nova Scotia duck tolling retrievers are over-represented. The age of onset in dogs is typically between 6 and 18 months, although reports exist of the diagnosis in dogs up to 7 years of age – in those older cases, the more chronic and relapsing form of the condition we suspect is more common. We aren’t aware of any confirmed cases in cats. The main cause of meningitis in young cats is the feline infectious peritonitis virus.”

**Jenny:** If I suspect meningitis, what tests should I do initially?

**Colin:** “Initial tests should be based on building a clinicopathologic picture that supports an inflammatory

aetiology for the clinical signs, helps exclude major involvement of other body systems, and helps excludes infectious causes. For this we would suggest the following to be very important:

- **Haematology** – we would expect neutrophilia with a left shift, a monocytosis and an increased RBC sedimentation rate.
- **Serum biochemistry** – we might identify a mild decrease in albumin, and increase in globulins as part of an acute phase response, but otherwise we would not expect significant changes – elevated ALP, phosphorous and total calcium are sometimes present in young animals.
- **Infectious serology** – as SRMA causes a vasculitis, infectious diseases that cause vasculitis should be excluded including borreliosis, ehrlichiosis and anaplasmosis; an immunochromatography SNAP test could be used for this purpose, as could PCR on any blood, CSF or joint fluid samples obtained. The protozoal diseases neosporosis and toxoplasmosis should also be excluded using blood serology testing.

These conditions might be more often expected to cause signs of muscle, brain or spinal cord disease. Fungal causes of meningitis are not common in the UK.

Although not essential, the assessment of acute phase proteins (APP's) including C-reactive protein and alpha-2-macroglobulin can help confirm systemic inflammation and elevation of these markers may be less common in focal causes of inflammation such as paraoesophageal abscesses. Unfortunately, elevated APP's are not specific to non-infectious causes of meningitis. Further testing should also be considered, as listed below."

### **Jenny:** What should I do with a dog where I strongly suspect SRMA on clinical presentation but the owner declines referral?

**Colin:** "In this situation, presumptive treatment without confirmation of the diagnosis could be considered, as overall the prognosis for treating acute SRMA is good. The main benefits of referral (beyond utilising our experience with managing the disease) would include cross-sectional imaging to help exclude the differential diagnoses described above and some procedures that clinicians may not have had extensive experience with, such as cerebrospinal fluid collection. However, it would be important to consider the following:

How likely is a presumptive diagnosis, based on the data I have available to me?

If the dog is more than two years of age, does not have neutrophilia or monocytosis, is not pyrexia, or has other signs referring to other body systems, is the condition likely? In our experience, where these conditions are not met, the likelihood of an alternate diagnosis (particularly an infectious cause) is higher.

Can I do my own imaging to help exclude other causes?

Survey radiography of the spine can be useful in excluding disease that change the architecture and opacity of the vertebral column, such as diskospondylitis, vertebral osteomyelitis, and vertebral neoplasia. Deviation of soft-tissues and airways ventral to the sub-cervical musculature might raise suspicion for an abscess.

Ultrasound might similarly be useful for this purpose.

Can I convince my client that the major limitation to presumptive immunosuppression is worsening of infectious meningitis, so excluding infectious causes is worthwhile?

If the client could commit funds to some testing, this should be the main area of investiture. As confirmation of the diagnosis relies on CSF analysis (and the finding of a neutrophilic pleocytosis), performing general anaesthesia for the purpose of collecting CSF (and obtaining well positioned radiographs) should still be consideration. A lumbar CSF puncture can be safer than tapping the cerebellomedullary cistern, although collection is more often associated with iatrogenic haemorrhage."

### **Jenny:** I've seen cases of SRMA in dogs that relapse when the prednisolone is tapered – what would you recommend for these cases?

**Colin:** "Approximately one in five cases of SRMA will relapse either during the course, or after the course of treatment. The management of relapses depends on the severity of signs and the current dosage of prednisolone.

Minor relapses, evident as 'not being quite right' or 'intermittently vocalising' can be managed with a short 'pulse' dose of a high immunosuppressive dose (such as 2–4 mg/kg/day) for 48 hours, followed by a short tapering dose, reducing the dose by 25–50% every 3–5 days. Frequent or more severe relapses, particularly where iatrogenic hyperadrenocorticism has represented a significant quality of life issue, might require adjunctive immunosuppressive therapy in the form of azathioprine (2 mg/kg SID for five days then 2 mg/kg SID for five days then once every other day thereafter.





# CASE STUDY

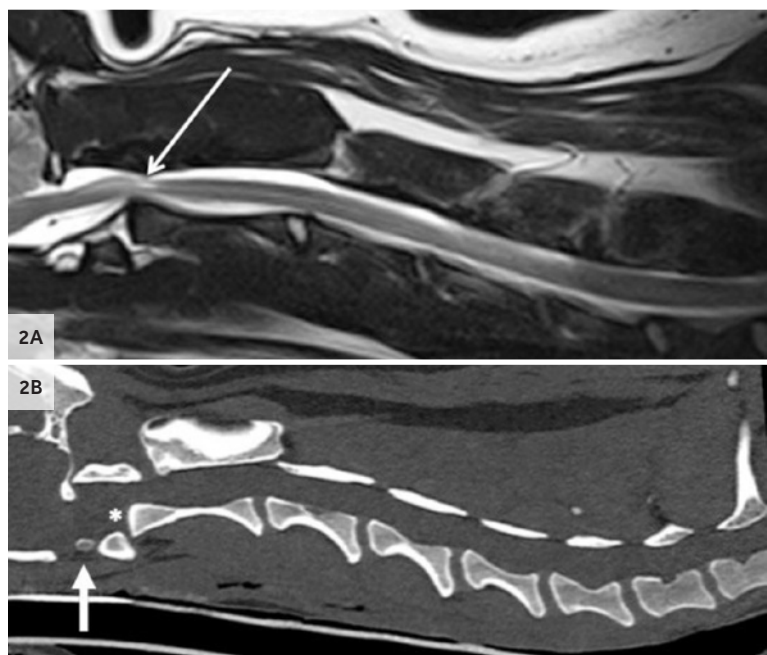
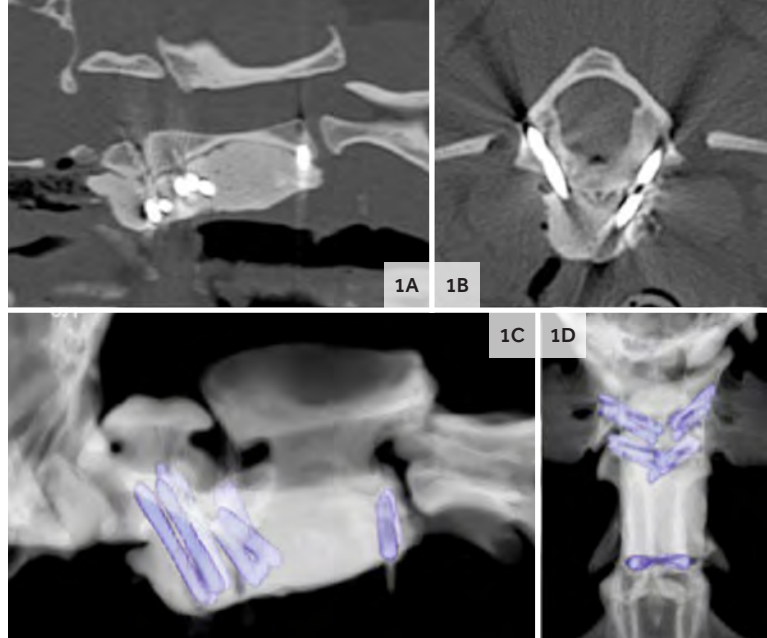
Here we present a neurosurgery case report that demonstrates how teamwork in our emergency, anaesthesia, diagnostic imaging and neurology teams led to a successful outcome – in a particularly unusual case.

Roxie was a 3-year-old, female neutered English Springer Spaniel, who was presented on a Saturday as an emergency, with acute onset, non-progressive, non-ambulatory tetraparesis after running into her owners' legs. She only had slight movements in her thoracic limbs, but no movement at all in her pelvic limbs. She had bilateral Horner's syndrome. There was some neck pain, but Roxie appeared very stoic.

With a peracute onset, non-painful, non-progressive clinical presentation following only mild trauma, we felt fibrocartilaginous embolism, or acute non compressive nucleus pulposus extrusion the most expected differential diagnoses.

After initial assessment, she was transferred to neurology and one of our anaesthetists prepared her for GA. MRI and CT of the spine revealed, to our surprise, aplasia of the odontoid process, dramatic dorsal displacement of the axis and marked compression of the spinal cord with changes consistent with oedema and inflammation. Given the degree of spinal cord compression, emergency decompression and stabilisation was recommended.

A standard ventral approach to the atlantoaxial junction was made and C2 was reduced ventrally once the joint capsule had been removed. Atlantoaxial arthrodesis was performed using a total of 10 threaded stainless-steel pins and gentamycin impregnated bone cement. The articular cartilage was debrided with a bone curette and the joint space was packed with cortical allograft prior to cement application. A post-operative CT scan confirmed adequate implant positioning and reduction of the vertebral luxation.



Roxie was hospitalised for over a week, receiving intensive care and physiotherapy. She was discharged with strong movements in all her limbs. At 6 week post-operative follow up, Roxie was massively improved, walking, with mild ambulatory tetraparesis and ataxia. Her Horner's syndrome had resolved. A year after surgery she continues to do well, running around and enjoying her life. As a team we were very thankful to be able to give her a second lease of life.

**Atlantoaxial subluxation has not been reported in this breed previously and our neurology team have subsequently published the case to raise awareness of this diagnosis and contribute to the body of veterinary research. DOI: 0.1002/vrc2.52**

**Figure 1:** CT postoperative images in (A) sagittal view showing pin placement and stabilisation in extension, (B) transverse view at the level of C1 showing implant placement. 3D reconstructions showing implant placement in (C) sagittal and (D) ventral views

**Figure 2:** (A) MRI sagittal T2WI of the cervical spine showing hyperintensity within the spinal cord with area of gliosis (open arrow head) and presence of the apical ligament (closed arrow head). (B) CT sagittal view of the cervical spine showing subluxation (arrowed) and absence of the odontoid process (\*)



# MEET OUR NEUROLOGY TEAM

We are a team of four neurology Specialists and referral clinicians offering you a comprehensive and personal service for all neurological and neurosurgical problems.

With a combined experience of over 30 years in referral neurology, and using cutting edge facilities, we regularly perform state-of-the-art brain and spinal surgery; including brain and spinal tumour removal, vertebral distraction fusions for wobblers disease and disc protrusions and spinal malformation 'hemivertebra' stabilisations.

We are committed to furthering the knowledge of our field through our research and pioneering new medical treatments and surgical techniques for animals debilitated by neurologic disease.

If you would like advice on any of your neurology cases; including video analysis, interpretation of spinal x-rays and epilepsy medication reviews, do not hesitate to get in touch by telephone or email.



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✚ EMERGENCY CARE

✚ NEUROLOGY AND NEUROSURGERY

✚ OPHTHALMOLOGY

✚ PHYSIOTHERAPY

## GET IN TOUCH

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To refer a case visit: <https://lumbrypark.co.uk/for-vets/refer-a-case>

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