Oral presentations

Investigating canine cervical sensitivity with an electronic von Frey aesthesiometer: a novel method of assessing syringomyelia-associated neuropathic pain

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OBJECTIVE

To establish that the electronic von Frey aesthesiometer (eVF) may be used to quantify cervical skin sensitivity in Cavalier King Charles Spaniels (CKCS).

BACKGROUND

Cervical syringomyelia affects 70% of CKCS >6 years old, leading to neuropathic pain. Neuropathic pain diagnosis is based on subjective clinical assessment, with no objective measures currently available. The eVF allows application of increasing pressure onto the skin via a non-invasive plastic tip, until the dog responds (i.e. demonstrating skin sensitivity threshold). The eVF screen displays the pressure applied in grams.

STUDY DESIGN

Two-centre prospective observational study, ethically covered.

METHODS

CKCS, presenting for chronic neck scratching and/or suspected neck hypersensitivity, undergoing cervical MRI were recruited. Following acclimatisation, the eVF, unseen by the standing dog, was applied perpendicular to the skin by an investigator blinded to the eVF display. The pressure obtained at the point of a behavioural response was recorded on three consecutive times per cervical test site bilaterally, with the lowest value used for analysis. Test sites were: (i) caudal to the atlas (C2); and (ii) cranial to the shoulder (C4). A control reading was taken from the dorsal aspect of the right 3rd–4th metatarsal region, with the dog in left lateral recumbency. MRI of the caudal fossa and cervical spinal cord followed eVF testing.

RESULTS

Data were normally distributed. Of 12 CKCS tested, the mean (standard deviation) skin sensitivity was: (i) at C2 229.1g (77.9) and C2 234.8g (55.1) (right/left respectively); at C4 275.5g (59.5) and C4 273.5g (91.1) (right/left respectively); and (iii) at the metatarsus region 268.3g (113.9). One way ANOVA did not reveal differences between test sites ($p=0.475$, $F=0.891$), possibly due to the low cohort size at this stage in the study. We will recruit 15 dogs/group/centre, grouped by syringomyelia status (syringomyelia-free, asymptomatic, symptomatic) before completing further analysis.

CONCLUSION

Subjective differences between test sites (with C4 having a higher skin sensitivity threshold relative to C2) suggest that the eVF may be able to discriminate differences in skin sensitivity between dogs, but these are not statistically different with the current cohort. We propose here a novel bedside eVF testing protocol to quantify neck pain in CKCS with neuropathic pain and will report further findings based upon a larger cohort of CKCS with/without syringomyelia once recruitment is complete.

Acknowledgement: Funded by Dogs Trust, with no conflict of interest.

Thoracolumbar spinal disorders in dogs attending primary-care veterinary practices in the UK

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Thoracolumbar spinal disorders (TLSDs) result in a wide range of clinical signs, from mild discomfort to paraplegia, and can have a substantial welfare impact on affected individuals and breeds. Historically the majority of studies on TLSDs have been undertaken within the referral population, with associated selection biases. This study aimed to estimate prevalence, risk factors and outcome of TLSDs affecting dogs attending primary-care veterinary clinics in the UK.

The study included VetCompass data on all dogs presenting at least once to participating primary-care clinics across the UK within 2013. Potential spinal cases were identified by searching VeNom diagnosis fields and clinical note free text using spinal-specific search terms. Retrieved records were screened manually for diagnoses of TLSDs and for extraction of additional information on confirmed cases.

One thousand and fifty three TLSD cases were identified from the study population of 104,233 dogs, giving a prevalence of 1.00% (95% CI 0.94%–1.06%). The most commonly reported affected breeds were crossbreds (15.8%), Labrador Retrievers (8.9%) and Dachshunds and Jack Russell Terriers (both 6.5%).

At presentation, 893 (84.8%) cases were ambulatory (116 (11.1%) non-ambulatory, 44 (4.2%) unknown). The most commonly reported specific TLSDs diagnosed were intervertebral disc disease ($n = 374$, 35.5%), spondylosis (233, 22.1%), and spinal pain (205, 19.5%). Surgery was undertaken in 93 (8.8%) cases (95 (9.0%) unknown, 865 (82.1%) not

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treated surgically). Medical treatments were used in the majority (88.8%) of TLSD cases. The most common medical treatments were non-steroidal anti-inflammatories ($n = 782$, 74.2%), tramadol (332, 31.5%), gabapentin (156, 14.8%) and glucocorticoids (103, 9.8%), with multimodal analgesia used in 401 (38.0%) cases. The most popular complementary treatments were rest alone (45.8%), rest and physiotherapy (2.7%) and hydrotherapy (1.1%). Overall, 113 (10.7%) animals were euthanized as a result of their TLSD.

By utilizing large merged datasets from primary-care

practices, a novel insight into caseload and management in the general UK dog population can be gained. The results of this study identified that the most common presenting breeds with TLSDs in the primary-care setting were cross-breeds and Labrador Retrievers, although this is influenced by breed popularity and further risk factor analyses will be undertaken. The welfare impact of TLSDs was shown to be high, with most cases requiring long-term analgesia and often multimodal management. Furthermore one in ten TLSD cases were euthanized because of their condition.

The occurrence of cardiac abnormalities in canine steroid responsive meningo-arteritis (SRMA)

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Concurrent cardiac disorders, such as arrhythmias and myocarditis, are well-documented in human patients with central nervous system (CNS) diseases, including bacterial meningitis. Similarly, single case reports in dogs with steroid responsive meningo-arteritis (SRMA) have suggested concurrent cardiac abnormalities. This prospective study aimed to document the prevalence of cardiac changes in dogs with SRMA based on measurement of serum cardiac troponin-I (cTnI) and echocardiography, and to monitor these changes

during SRMA treatment.

SRMA was diagnosed based on typical clinical presentation, blood/urinalysis, cerebral spinal fluid analysis, and in some cases infectious disease serology and MRI. Echocardiography was performed in all dogs, where possible prior to starting any anaesthesia, opiate or glucocorticoid therapy. Repeated neurological examination, C-reactive protein (CRP), cTnI and echocardiography were performed after 14 days.

Fourteen dogs were prospectively enrolled (3FE, 1FN, 5ME, 5MN) with a mean age of 12.5 months (range 6 months – 30 months). Increased cTnI was identified in 5/14 dogs (mean 4.16 ng/l; range 0.59–14.5; reference range < 0.15) and echocardiographic abnormalities detected in 12/14 dogs, including spontaneous echo-contrast (SEC) in 12/14 and mild pericardial effusion in 5/14.

Treatment with glucocorticoids was associated with clinical improvement and CRP normalisation in all dogs. cTnI normalised in 4/5 dogs and significantly reduced in 1/5 dogs. SEC resolved in 9/12 dogs and reduced in 3/12 dogs. Pericardial effusion resolved in all dogs.

These results show that cardiac changes are common in dogs with SRMA, and resolve with therapy in most dogs. Longer term follow-up of dogs with persistent cardiac changes is warranted.