Oral presentations

2D quantification and characterisation of the spinal cord dorsal horn neuronal population in Cavalier King Charles Spaniels with syringomyelia

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OBJECTIVES

Syringomyelia is characterised by fluid-filled lesions in the spinal cord. A classic sign of severe syringomyelia is 'phantom scratching', the pathogenesis of which is unclear. It has been associated with a large dorsolateral syrinx at the level of the C3 and C4 spinal segments with damage to the superficial dorsal horn. We compared populations of inhibitory and excitatory interneurons in

the dorsal horn of the middle cervical spinal cord segments between 'scratchers' and 'non-scratchers' to further investigate this.

METHODS

Using image analysis software and immunohistochemistry the constituents and neuronal populations of the middle cervical spinal cord segments of the dorsal horn for four cohorts were identified and compared. These four cohorts included dogs with symptomatic syringomyelia and phantom scratching, dogs with symptomatic syringomyelia, dogs with asymptomatic syringomyelia and dogs with neither syringomyelia nor phantom scratching.

RESULTS

'Scratchers' had significantly larger central cavities than 'non-scratchers'. There were significant differences in the distribution of inhibitory interneurons in the left and right dorsal horn of the spinal cord between the four cohorts. There were no significant differences in excitatory interneuron distribution.

STATEMENT (CONCLUSIONS)

The results suggest there are differences in the number of inhibitory interneurons in one or more laminae of the left and right dorsal horn between cohorts but does not identify in which lamina(e) the differences lie. Further complex statistical analysis and methodology alteration are required to grasp the true significance of these results in relation to the development of phantom scratching in dogs with severe syringomyelia.

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Behavioural and clinical signs of Chiari-like malformation and syringomyelia in Cavalier King Charles Spaniels

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OBJECTIVES

Chiari-like malformation (CM) and syringomyelia (SM) are associated with behavioural signs of pain and scratching. However there is poor data on which of these

non-specific signs are the most useful for indicating symptomatic disease and whether associated with CM or SM or both.

METHODS

The medical records of Cavalier King Charles Spaniels presenting with history of behavioural signs of pain and CM with or without SM were analysed. Dogs with other causes of pain or scratching were excluded. Maximum transverse diameter of the syrinx or central canal dilation (CCD) was measured and the dogs were divided into no SM (16 dogs); CCD<2 mm (12 dogs); SM 2–3.9 mm (23 dogs); SM≥4 mm (50 dogs).

RESULTS

The most common signs in all groups was vocalisation (spontaneous, changing head position, on rising, when lifting dog from under the sternum); scratching/rubbing the head/ears; unwilling or difficulty jumping/doing stairs; hyperaesthesia to palpation of the cervical, thoracic and/or lumbar spine; decreased exercise ability; lethargy and sleep disturbance. Phantom scratching,