Comparing antiepileptic drug effects on gait through quantification of ataxia in dogs with idiopathic epilepsy.

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Idiopathic epilepsy (IE) is often seen in first opinion practice and can be extremely distressing for dog, and owner. Studies into IE often focus on seizure frequency reduction when comparing drug choices; however studies in human medicine and into owner perceptions suggest that acceptable side effects are just as important as seizure frequency.

Antiepileptic drugs (AED) such as phenobarbitone, a licensed first line treatment, is associated with the side effect ataxia. In people balance is impaired in phenobarbitone users, but to the author’s knowledge this has yet to be objectively studied in dogs. The aim of this study is to evaluate the gait of dogs with IE who are being treated chronically with phenobarbitone, or imepitoin. It is hypothesized that dogs on phenobarbitone will show a larger variability in their gait parameters compared to imepitoin and control groups.

RESULTS

A collection of 50 stride parameters in walk have been taken from 10 age-matched control dogs, 5 imepitoin dogs with IE and 7 phenobarbitone treated dogs with IE. Mean length of time on phenobarbitone was 16 ± 2.1 months and serum levels averaged at 22 ± 0.34 μg/ml. Time on imepitoin had a larger range, with a mean value of 13 ± 3.5 months. The preliminary results show that the lateral distance between pelvic paw placements during a walking gait are significantly more variable in the phenobarbitone treated dogs. On the other hand this parameter did not differ significantly more variable in the phenobarbitone treated dogs. On the other hand this parameter did not differ between the different AEDs and how this affects the lateral position variability compared to controls and imepitoin treated dogs. A traction-responsive lesion can successfully be addressed by traction-stabilisation alone. We demonstrate a standardised, simple and controlled method for achieving vertebral distraction, also applicable in conjunction with other stabilisation techniques. In selected patients where spinal cord compression resolves during traction MRI, ventral slot is not required prior to stabilisation.

CONCLUSION

This study shows that cranial dorsal laminotomy “doffing of the axis is a safe and easy to perform surgical technique. Considering there were no morbidity or mortality directly related to this technique, we propose that “axis doffing” gives very good access to the dorsal aspect of cervical spinal cord within the axis without causing any instability.

Axis dorsal laminotomoy (doffing) in 8 dogs

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OBJECTIVE

To assess the postoperative morbidity/mortality of the elevation of the cranial dorsal process of the axis and evaluate the short and long term consequence of this procedure.

METHODS

Eight dogs diagnosed with variety of pathologies – subarachnoid diverticulum (5) syringohydromyelia (2) and GME (1) – effecting dorsal aspect of C2 spinal cord underwent C2 cranial dorsal process laminotomy in a similar manner. Following the specific procedure per the underlying pathology bone flap was then repositioned and fixed into place using absorbable suture material.

RESULTS

The technique was carried out without significant perioperative complications and all dogs survived to discharge from hospital and continued the medical treatment as indicated based on the underlying pathology. The follow up time was from 6 months to over 5 years. Six dogs improved neurologically, while 2 dogs were euthanised due to the persistency of the primary neurological diseases (post mortem examination in one of the dog confirmed correct anatomical placement of the bone flap). Two months post-operative radiographs confirmed correct placement in two dogs but no radiographic evidence of fusion was present.

CONCLUSION

A traction-responsive lesion can successfully be addressed by traction-stabilisation alone. We demonstrate a standardised, simple and controlled method for achieving vertebral distraction, also applicable in conjunction with other stabilisation techniques. In selected patients where spinal cord compression resolves during traction MRI, ventral slot is not required prior to stabilisation.

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Oral presentations