MAGNETIC RESONANCE IMAGING, COMPUTED TOMOGRAPHY, AND HISTOPATHOLOGICAL FEATURES OF A SUSPECTED CERVICAL SPINOUS HAMARTOMA IN A YOUNG DOG

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INTRODUCTION

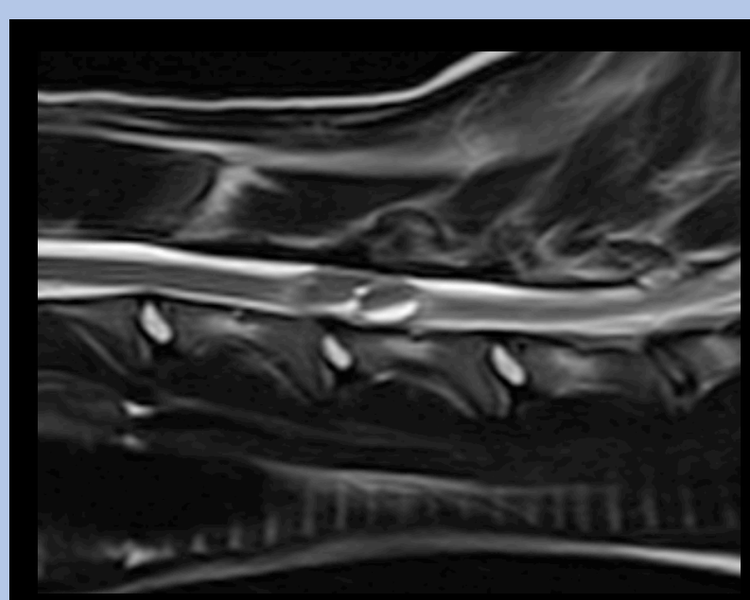
This report describes the clinical, MRI, CT, and post-mortem findings of an unusual presentation of a cervical intradural-extramedullary mass causing non-ambulatory tetraparesis in a young dog.

METHODS

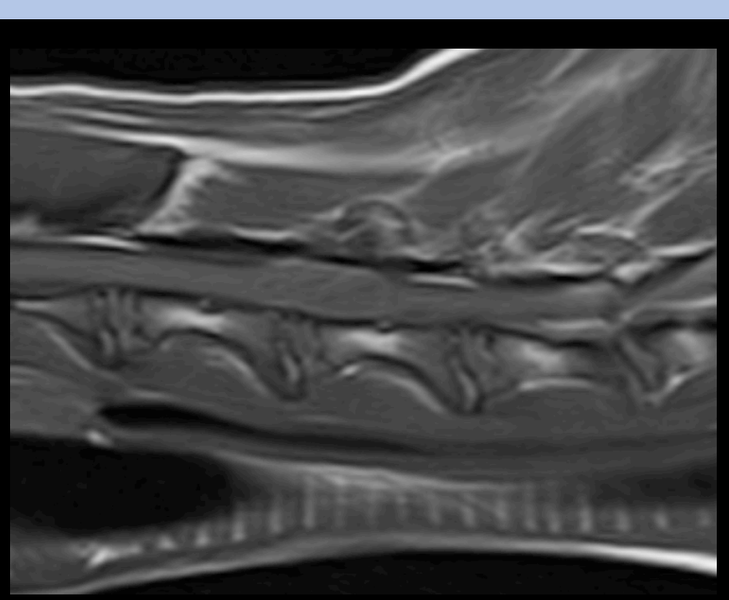
An eight-month-old female German Shepherd was presented with a two-month history of right sided hemiparesis progressive to non-ambulatory tetraparesis. A cervical spine MRI was performed using a 1.5T scanner, which included T2-weighted, T1-weighted pre- and postcontrast, T2-STIR and T2*-GE sequences. Additionally, dynamic CT-angiography and CT-myelography of the cervical spine were performed using a 64-row multidetector scanner. A cerebrospinal fluid sample was obtained after the CT. The patient was euthanased, and post-mortem examination and histopathology were performed.

RESULTS

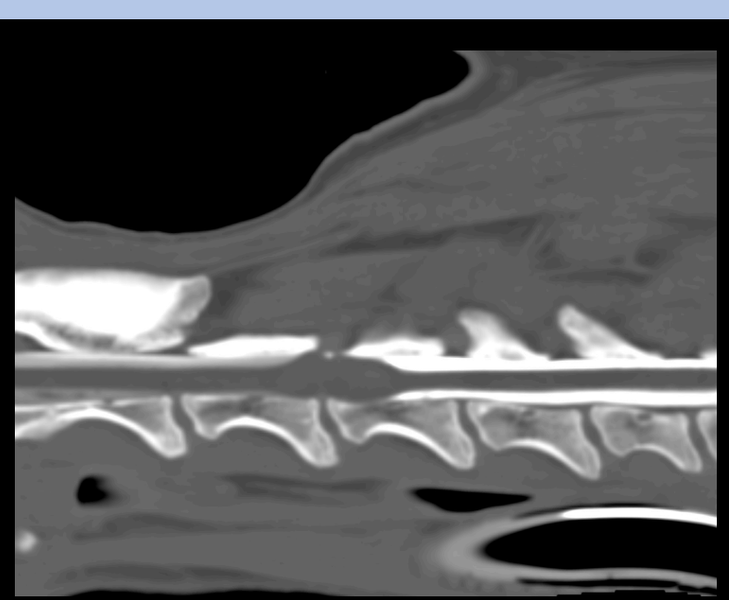
The MRI showed a multilobulated and faintly contrast-enhancing mass of mixed signal intensity occupying most of the cross-sectional area of the vertebral canal at the level of cervical vertebrae C3-C4. CT-angiography and CT-myelography revealed circumferential attenuation of the subarachnoid space by the mass, with no evidence of vascular involvement. Both imaging modalities suggested an intramedullary origin. Cerebrospinal fluid analysis revealed normal total cell count with an increased proportion of neutrophils and a mild increase in total protein concentration. Post-mortem examination and histopathology revealed an intradural-extramedullary mass comprising fibrous connective tissue composed of dense bundles of eosinophilic collagen with a low density of mesenchymal cells, small areas of adipose tissue and a few small foci of bone, with no evidence of inflammatory or neoplastic cells.



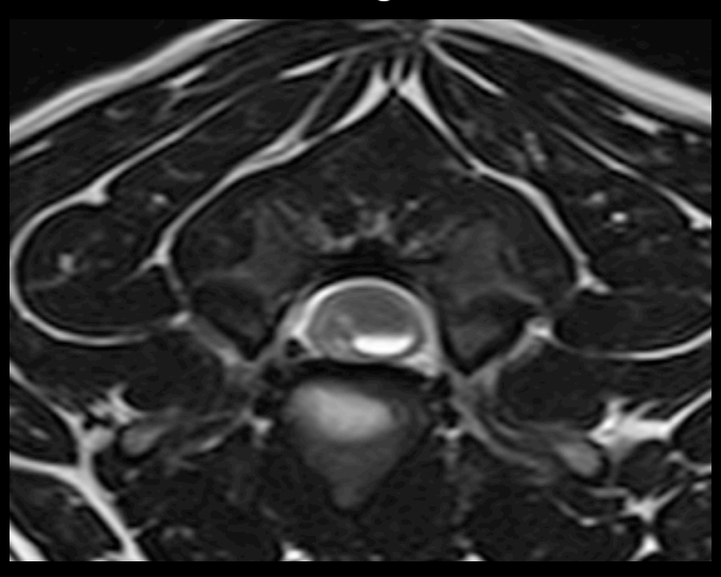
T2w Sagittal



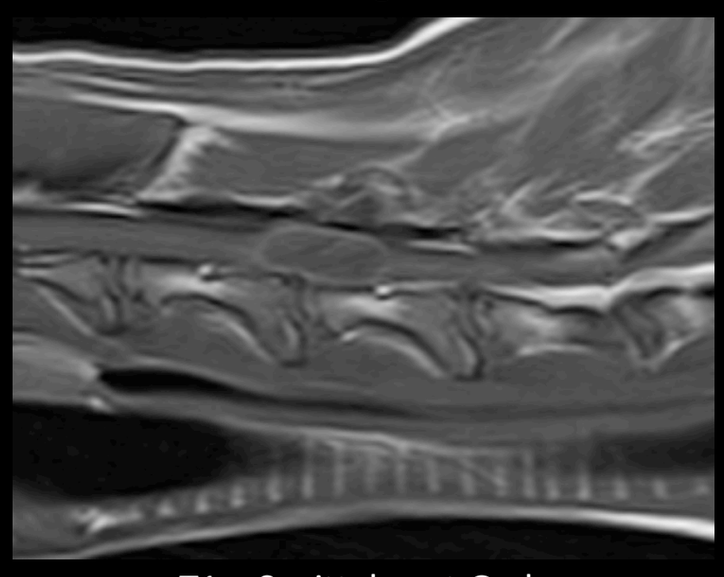
T1w Sagittal



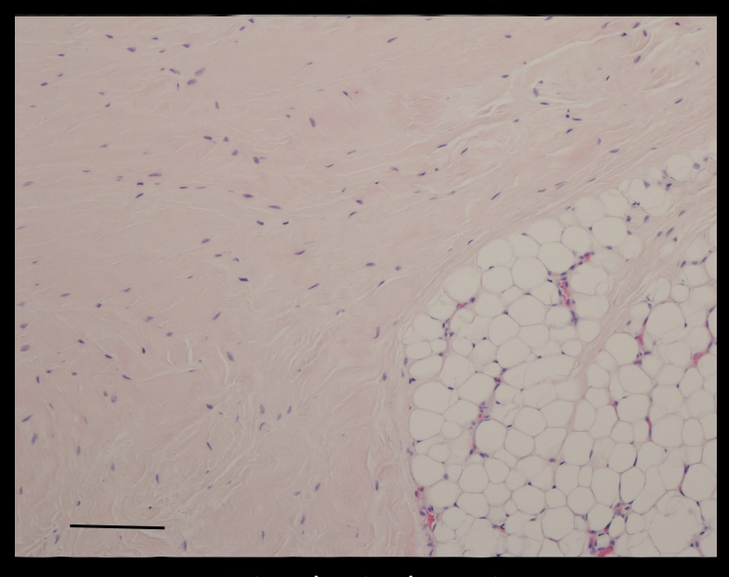
CT Myelogram Sagittal



T2w Transverse



T1w Sagittal post Gad



Histological section

DISCUSSION

The age of presentation and histopathological findings of this case are consistent with a fibrous hamartoma of infancy, an uncommon lesion described in the human literature,[1] which is rarely reported with spinal localisation and has been suspected as intramedullary based on imaging findings.[2] The intradural-extramedullary lesion suggests a meningeal or nerve root origin of the hamartoma, which is unusual. This case also highlights the difficulty in differentiating intramedullary from intradural-extramedullary lesions with MRI and CT. CT-myelography is considered the gold standard for classifying lesions as belonging to the subarachnoid space, but failed to do so in this case. Most likely this is due to the large size of the lesion, preventing the cerebrospinal fluid to encroach it.

REFERENCES

1. Ji Y, Hu P, Zhang C et al. Fibrous hamartoma of infancy: Radiologic features and literature review. BMC Musculoskeletal Disorders. 2019;20:356.
2. Yano S, Hida K, Nagashima K et al. Spinal fibrous hamartoma of infancy: Case report. Neurosurgery. 2004;55:712.

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