



SPINAL CORD COMPRESSION WITH HYDRATED NUCLEUS PULPOSUS EXTRUSION IN A DOG – CASE REPORT

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Abstract: A 4-month-old male cross-breed was presented to a small animal clinic for assessment of acute paraplegia in a traumatic episode caused by a car accident. On clinical examination, the dog presented proprioceptive deficits and paraplegia on the pelvic limbs. No modification of the spinal vertebrae was detected on the radiographic assessment. MRI had detected a disc extrusion located at T13-L1 that compressed the spinal cord. The MRI features showed a hydrated nucleus pulposus extrusion (HNPE). The case was referred for surgery of spinal cord compression and left hemilaminectomy was done. The material that was extruded was identified as a white gelatinous disc material. After surgery, the patient recovered his mobility and sensibility in the pelvic limbs and was discharged from the clinic in a couple of days. The re-check was conducted after 2 months and the owner reported normal walking without any neurological deficits.

Introduction

Intervertebral disc disease (IVDD) is one of the most common spinal diseases in dogs. Hydrated nucleus pulposus extrusion (HNPE) is a less common type of disc extrusion in dogs, represented by the rupture of the annulus fibrosus, following trauma or other factors, followed by extrusion of a part of the intact nucleus pulposus into the vertebral canal, causing spinal cord compression or not. The purpose of this study was to describe the neurological and imaging characteristics of a young dog that suffered severe spinal trauma.

Material and method

In the University Emergency Veterinary Hospital "Prof. Dr. Alin Bîrțoiu", Bucharest, a 4-month-old male, a cross-breed dog with a trauma from a car accident was presented. The patient underwent clinical, neurological and imaging examinations.

Results

The clinical examination followed the gait and the appearance of the thoraco-lumbar spine, pain on palpation in the lumbar area, distension of the urinary bladder and functional impotence on the hind limbs (Fig. 1).

The neurological examination presented a modified status. Gait evaluation revealed paraplegia and delayed proprioceptive deficits. Spinal reflexes, panniculus, perianal reflex, and tests involving nerves were normal.

The radiographic examination of thoraco-lumbar segment of the spine was without visible radiographic changes in the vertebral bodies, intervertebral spaces and holes, or vertebral articular processes (Fig. 2).

The MRI revealed the extrusion of a fragment of the hydrated nucleus pulposus (normal) at the T13-L1 level. The disc material, with hyperintense T2 signal and hypo-isointense T1, appears migrated caudally in the vertebral canal, creating a left median-paramedian extradural compression (Fig. 3). In the transverse planes, the degree of compression of the spinal cord was assessed at over 50%, which led to the establishment of the diagnosis of compressive HNPE.

Following surgery, the diagnosis of HNPE was confirmed, as a white gelatinous material was identified. All visible material was removed, and the spinal cord was decompressed along with the entire length of the hemilaminectomy.

In conclusion, the present study presented a rarer type of disc extrusion in dogs, represented by compressive HNPE, caused by severe acute trauma. The neurological evaluation, corroborated with the imaging examination (MRI) and the confirmation of the nature of the extruded disc material through surgical intervention, are the methods of choice in establishing the diagnosis of HNPE.

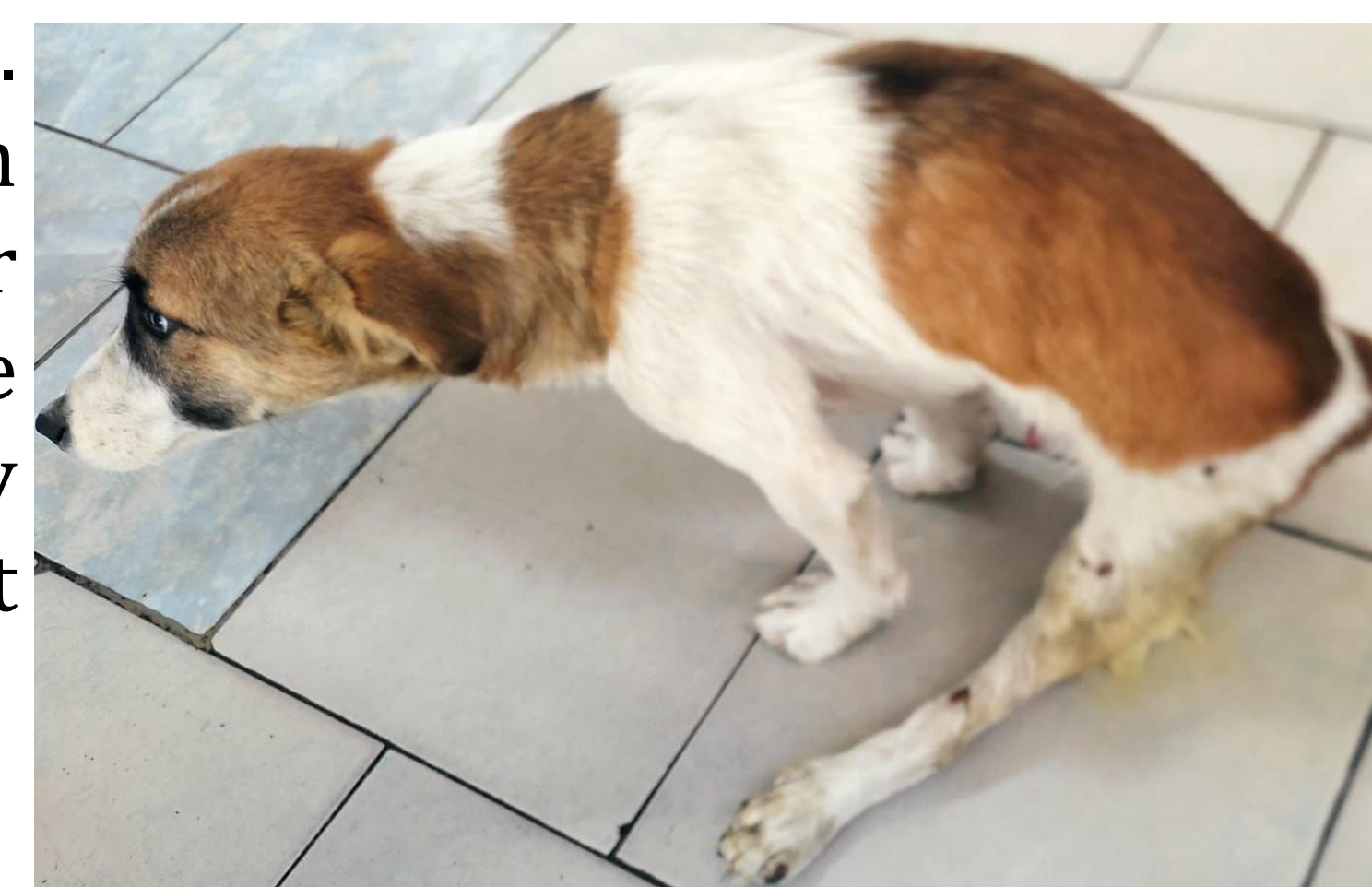


Fig. 1. A 4-month-old, male, cross-breed dog.



Fig. 2. Right lateral view of a 4 months old, male, cross-breed dog, at the thoraco-lumbar spine.

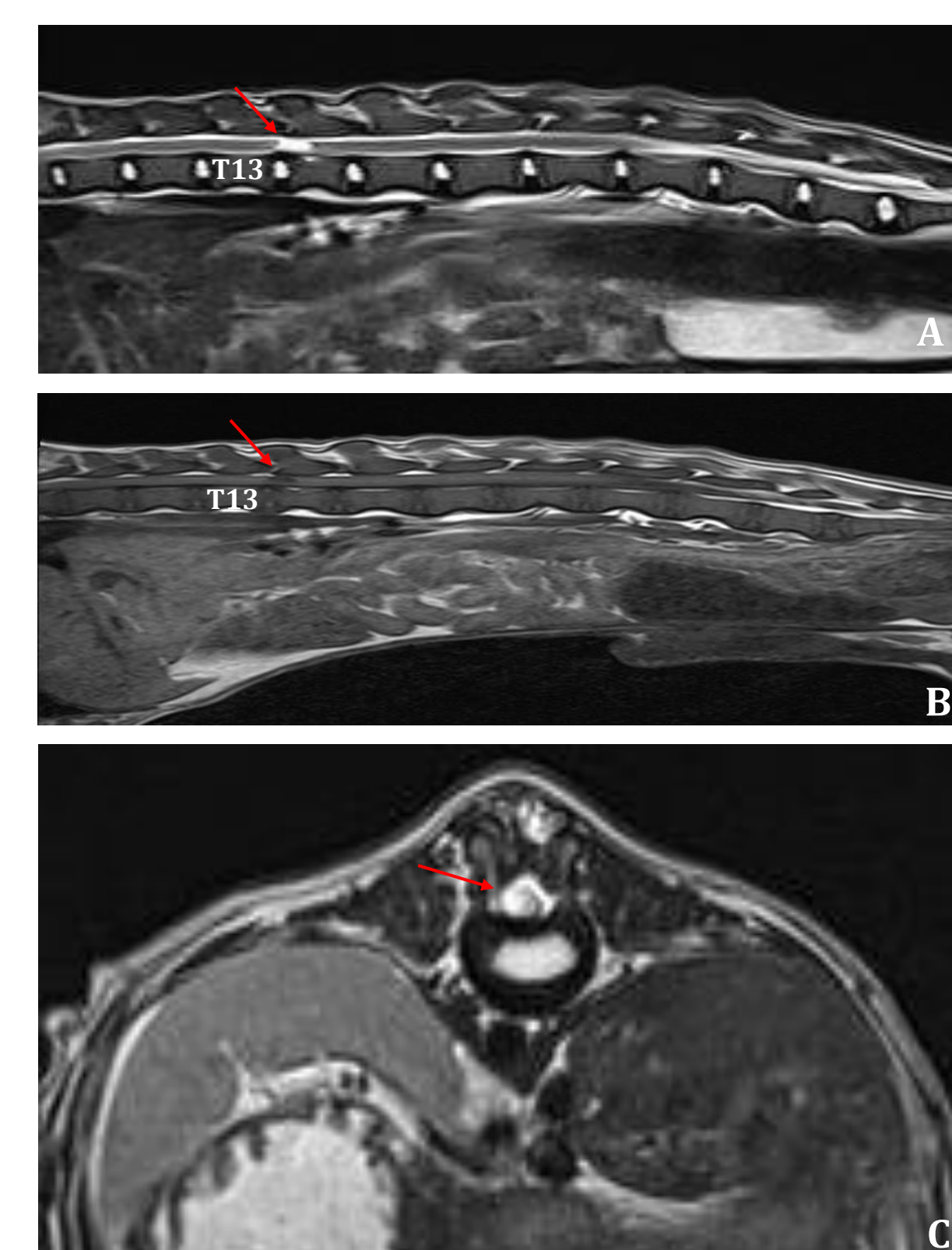


Fig. 3. Images in sagittal T2 sequences (A), sagittal T1 sequences (B) and transverse T2 sequences (C) planes, at the T13-L1 intervertebral space, can be observed a hydrated disc material (red arrow).