

HANSEN TYPE I INTERVERTEBRAL DISC DISEASE IN DOGS: CASE REPORT

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INTRODUCTION

Degeneration of the intervertebral disc and, consequently, disc herniation are the most common causes of neurological changes in dogs. Such causes can lead to compression of the spinal cord or nerve roots.¹ The intervertebral discs are made up of a fibrous outer layer, the fibrous ring, and the gelatinous center, the nucleus pulposus.⁷ The discs undergo chondroid metaplasia, resulting in spinal disease. intervertebral disc (DDIV) Hansen type I, which is the extrusion of the fibrous nucleus caused by dehydration and calcification of the nucleus pulposus, and Hansen type II, which is the protrusion of the fibrous ring, where the nucleus is dehydrated and replaced by fibrocartilage, not mineralizing, not externalizing the material but forming a protrusion.⁶ Currently, six more types of herniated disc are cited.³ Chondrodystrophic breeds are classified as the most affected by Hansen type I IVDD, however, non-chondrodystrophic breeds are also affected. ⁴ Clinical signs are commonly associated with neurological injuries, however, they can vary depending on the location and severity.⁷ The diagnosis is made through anamnesis, clinical examination and complementary tests, such as radiography, computed tomography, myelography and/or MRI. Treatment can be clinical or surgical, with its choice being based on the patient's neurological status and the progression of the disease.⁵ With this introduction in mind, the objective of this work was to present a case report of a dog diagnosed with herniated disc disease. intervertebral.

CASE REPORT AND DISCUSSION

The case in question refers to a French bulldog dog, 7 years old and weighing 13 kg, diagnosed with Hansen type 1 IVDD. The treatment took place on January 30, 2023, due to complaints of intense pain, intestinal

constipation and gait changes. The onset of the disease was acute and without recent trauma. Signs included changes in behavior and lack of gait, suggesting a possible spinal cord injury. Radiography and ultrasound examinations were requested, revealing opacification of mineral radiopacity and discoid shape in several vertebral topographies, in addition to spondylosis in other regions.

The dog was immediately referred to a veterinary clinic specializing in orthopedic surgery. After a new anamnesis, a detailed neurological physical examination was carried out, which indicated grade IV spinal cord injury, characterized by paraplegia, absence of superficial and deep pain, and proprioceptive deficit of the pelvic limbs in addition to urinary retention. Subsequent computed tomography identified an extrusion of the disc in the L3-L4 to L4-L5 region, compressing the ventral aspect of the spinal cord dural sac.

Given the test results and the severity of the condition, it was decided that surgical treatment was necessary. The dog underwent disc extrusion surgery using the laminectomy technique.

dorsal in L4. After the procedure, she remained in the clinic for 4 days, and was then released with recommendations for rest, a calm environment and the use of a yoga mat for spinal stability.

Post-surgical drug treatment included Pregabalin tabs 75mg BID, half a tablet orally for 30 days, Tramadol Hydrochloride 100mg, TID orally half a tablet for 5 days, Dipyrone monohydrate 500mg half a tablet TID for 5 days and Amoxicillin and clavulanate acid 250mg BID for 7 days. Weekly veterinary monitoring was maintained, and the patient's recovery was slow and progressive, with proprioception returning after 80 days. To assist in rehabilitation, acupuncture for pain and physiotherapy were recommended for strengthening and recovery from muscle

atrophy. The patient fully recovered after 120 days.

There are surgical treatments, including: dorsal laminectomy, in which the spinous processes, lamina and parts of the articular processes are removed, in order to expose the dorsal portion of the spinal cord and nerve roots; hemilaminectomy, where unilateral removal of the lateral or dorsolateral lamina occurs; fenestration, in which a window is created in the fibrous ring up to the level of the nucleus pulposus, in order to remove material from the intervertebral space.⁴ Surgical treatment is recommended when decompression significantly increases the viability and completeness of the patient's recovery.⁷

The decision to perform dorsal laminectomy at L4 was based on several factors. Firstly, the extent of the injury, with disc extrusion at L3-L4 and L4-L5, required precise decompression over a wider area of the spine. Laminectomy offers more extensive exposure of the spinal cord, allowing better access to the site of compression compared to hemilaminectomy, which offers more restricted access. Furthermore, the location of the ventral compression required a surgical approach that allowed broad and direct access to the affected region. Laminectomy,

by removing the dorsal process of several vertebrae, provided more complete access to the ventral region of the spinal cord, where compression occurred. Finally, laminectomy was preferred due to its ability to preserve spinal stability, as this technique preserves adjacent bony structures, offering better postoperative stability compared to hemilaminectomy, which can compromise the structural integrity of the spine.⁹

FINAL CONSIDERATIONS

Intervertebral disc herniation in dogs is a complex clinical condition that requires a multidisciplinary approach to diagnosis and treatment. The case presented highlights the importance of detailed clinical evaluation and imaging exams for precise intervention.

The choice of surgical technique, such as dorsal laminectomy at L4, proved to be effective in decompressing the spinal cord and preserving spinal stability. Furthermore, multimodal therapy, including medications and physical therapy, played a key role in the patient's complete recovery.

The management of herniated discs in dogs requires an individualized and collaborative approach between different veterinary specialties to ensure the best clinical results and quality of life for patients.

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