Case Report

Case Report of Fibrocartilaginous Embolic Myelopathy of the Spinal Cord in a Female Dog

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ABSTRACT

Introduction: Fibrocartilaginous embolic Myelopathy is a non-progressive injury in the spinal cord that can cause infarction in the veins of spinal parenchyma, leading to ischemia and necrosis.

Case report: Fibrocartilaginous embolic Myelopathy was diagnosed in a 4-year-old female Spitz dog using the clinical neurological examination. The dog was hospitalized, and the treatment, including supportive treatment and Cortone, was set up for 3 weeks. Then, Diazepam and Methocarbamol were added to the prescription, and treatment continued for 2 weeks. A general improvement was noted after 3 weeks, and the dog could stand perfectly after 5 weeks.

Conclusion: Three weeks of supportive treatment, Cortone therapy as well as the addition of Diazepam and Methocarbamol to the treatment could help the dog stand on its feet. However, it cannot be ignored that knowing about the history of the dog played an important role in its treatment procedure.

1. Introduction

Fibrocartilaginous embolic Myelopathy is an acute and non-progressive injury in the spinal cord, such as fibrous and cartilage, causing infarction in arteries and veins of spinal parenchyma followed by ischemia and necrosis. Pain is initially present at the onset of the disease; however, when the dog has no signs of pain during the clinical examination, the disease can be differentiated from conditions, such as disc hernia type 1, spinal fractions, and luxation of the vertebra. Subsequently, the patient experiences a sudden onset of paraparesis.

2. Case Report

In October 2020, a 4-year-old sterilized female spitz was referred to the Aria Veterinary Hospital, Mashhad, Iran. The owner claimed that the dog suddenly lost the ability to walk on her back legs the night before without any history of trauma. During the clinical and physical examination, the dog was quite alert, indicating paraparesis, perineal hyperreflexia, colonic patellar reflex, negative panniculus reflex, normal hopping and knuckling reflex in hands, hypertonia, and stiff muscle in hands on the lateral position as well as mild hypotonia and no deep pain in legs. The hematomalic reference ranges and the radiographs were also normal (Figure 1, radiographs were not archived).

According to the clinical neurological examination and the history, the animal was suspected to have Fibrocartilaginous Embolic Myelopathy (FCE) from T3 to L3 (Figure 2). The dog was hospitalized, and the treatment, including supportive treatment (fluid therapy for 5-6% dehydration, 10 ml of Dophalyte q12h) and Cortone (prednisolone at the dose of 1.1 mg/kg, taper off) was set up for 2 weeks. Then, the owner of the dog decided to change the veterinarian, and the second veterinarian added Diazepam and Methocarbamol to its prescription for a week. A general improvement was noted after 3 weeks, and the dog tried to stand on its feet. After 5 weeks, the dog could stand perfectly (Figure 3).
3. Discussion

Spinal cartilage fibrosis embolism is a severe spinal lesion, and can be observed in animals with an average age range of 3 to 5 years and a history of trauma or heavy activities. Cerebrospinal Fluid, Magnetic Resonance Imaging (MRI), and Computerized Tomography (CT) scan may usually be normal in these patients. Symptoms depend on the location and severity of the spinal cord injury. The lesions occur mainly in the thoracolumbar (T3-L3) and lumbosacral (L4-S3) regions. In T3-L3 spinal cord injuries, the hands are expected to be normal, but the legs show upper motor neuron signs. However, in severe injuries to this area, when the animal lies on its sides, the hands dilate due to the nerve amputation of ascending inhibitory axons originating from the cells of the spinal cord located in sections L1-L7 (Schiff Sherrington syndrome). The lower motor neuron symptoms in the legs can indicate spinal shock in the area.

According to the references, treatment for FCE includes nonspecific supportive measures, physiotherapy, and nursing care. For the animals brought to the medical hospitals during the first 6 hours, methylprednisolone sodium succinate can be suggested aggressively (as a treatment of acute spinal cord trauma). While corticosteroids can be used for the treatment of FCE (at the anti-inflammatory doses), intensive interventions with physiotherapy are needed to hinder bedsores and urinary tract infections.

In the present case report, although Diazepam and Methocarbamol were considered the key point of treatment after they were added to the protocol, they are not specifically mentioned for the treatment of FCE in any available references. Moreover, most clinical improvements usually occur within 7 to 10 days after the onset of clinical signs (even though it may take 6 to 8 weeks to complete rehabilitation). Therefore, more investigations in a larger sample size with an exact statistical analysis are required to prove the role of Diazepam and Methocarbamol in the improvement of the
lesions of FCE.

4. Conclusion

Fibrocartilaginous embolic Myelopathy is an acute condition in patients where a thorough patient history can be highly beneficial for diagnosis. The disease is usually self-limited, and general supportive measures, nursing care, and corticosteroids are often effective in its management. However, the specific impact of drugs like Diazepam and Methocarbamol on patients with this condition requires further investigation to establish their roles in treatment.

Declarations

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Competing interests

Authors declare no conflicts of interest.

Authors’ contribution

Sina Salavati, Muhammad H Kafrashi, and Mohammadreza Raznahan diagnosed the case and conducted the treatment. Daryoush Babazadeh supervised the whole procedure.

References