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Possible Participation of Canine Distemper Virus in the Development of Neuromuscular Disease in an Adult Dog

Rogério A Marcasso¹, Mônica V Bahr Arias², Ana Paula da Silva³, Ana Paula FRL Bracarense¹, Amauri A Alfieri³, Alice F Alfieri³ and Selwyn A Headley^{1*}

¹Laboratories of Animal Pathology and ³Virology, Department of Veterinary Preventive Medicine, Universidade Estadual de Londrina, Paraná, Brazil; ²Department of Veterinary Clinics, Universidade Estadual de Londrina, Paraná, Brazil

*Corresponding author: selwyn.headley@uel.br

Abstract

This report investigated the possible participation of canine distemper virus (CDV) in an eight-year-old, male, Akita dog with neuromuscular disease. Clinically, there was tetraparesis, muscular atrophy, generalized weakness, intolerance to exercise, and diminished or absent spinal reflexes. The dog was serologically negative for *Toxoplasma gondii*. Necropsy confirmed generalized muscular atrophy. Histopathology revealed white matter demyelinating encephalitis, generalized atrophy and fibrosis of skeletal muscle fibers, myocardial atrophy and fibrosis, loss and demyelination of peripheral nerve fibers, axonal degeneration, endoneurial fibrosis, and interstitial pneumonia. Immunohistochemistry identified CDV antigens within the cerebellum, spinal cord, skeletal muscle, lungs, and spleen. RT-PCR and direct sequencing amplified the CDV nucleoprotein gene from the cerebellum and sciatic nerves. Collectively, these findings suggest that this dog demonstrated systemic canine distemper that also affected the muscular system and probably triggered the manifestations of the neuromuscular disease observed in this case.

Key words: Immunohistochemistry, Infectious disease, Molecular biology, Neuropathology



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