

Investigation on lung and heart parasites of Newfoundland coyotes

Clare Henderson¹, Megan Jones^{1,2}, Shane Hann³, Chris Callahan³, Don Keefe³, Nina Germitsch¹

1. Department of Pathology and Microbiology, Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PEI
2. Canadian Wildlife Health Cooperative, Atlantic Region
3. Department of Fisheries, Forestry and Agriculture, Wildlife Division, Newfoundland and Labrador, Canada

Angiostrongylus vasorum, also known as French heartworm, is a metastronglyoid parasite of wild and domestic canids that resides in the right ventricle and pulmonary arteries of its definitive host. In Europe *A. vasorum* is widespread, increasingly reported, and spreading to new areas. *Angiostrongylus vasorum* is also prevalent in Newfoundland, the only longstanding endemic region in North America. Up to 56% of foxes in Newfoundland are infected with *A. vasorum*, but the prevalence in coyotes remains unstudied. The aim of this research was to determine the prevalence of *A. vasorum* and other lungworms (i.e., *Crenosoma vulpis* and *Capillaria aerophila*) in the Newfoundland coyote population. Adult coyotes were hunted between 2017 and 2020 (n=109) for a different project and their lungs and hearts collected. Samples were collected again between 2021 and 2023 (n=64). One hundred and seventy-three coyote hearts and lungs were dissected, and parasites identified and counted, over the course of two summers. The *A. vasorum* prevalence for the first coyote sample group was 56% (n=61) and the mean worm burden was 17. *Crenosoma vulpis* was identified in 5.5% (n=6) of coyotes. Two animals (3.1%) were infected with both *A. vasorum* and *C. vulpis*. For the second coyote sample group, the *A. vasorum* prevalence was 77% (n=49) and the mean worm burden was 15. *Crenosoma vulpis* was identified in 2% (n=1) of coyotes. One animal (2%) was infected with both *A. vasorum* and *C. vulpis*. No *C. aerophila* infections were detected in either sample group. We conclude that the *A. vasorum* prevalence in Newfoundland coyotes is high and comparable to the fox prevalence, whereas the *C. vulpis* prevalence was low compared to the known high prevalence (87%) in Newfoundland foxes. The *A. vasorum* prevalence seems to be increasing while *C. vulpis* seems to be decreasing in coyotes. Our findings furthermore confirm the lack of *C. aerophila* in Newfoundland canids.