

Triggers for Acute Polyradiculoneuritis in Dogs

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In the Literature

Martinez-Anton L, Marendia M, Firestone SM, et al. Investigation of the role of *Campylobacter* infection in suspected acute polyradiculoneuritis in dogs. *J Vet Intern Med*. 2018;32(1):352-360.

FROM THE PAGE ...

Acute polyradiculoneuritis (APN), or coonhound paralysis, causes sudden, progressive flaccid paralysis in dogs. APN has long been considered the canine model of an acute flaccid paralysis in humans known as Guillain-Barré syndrome (GBS).¹ Both APN and GBS result from an immune-mediated attack on the ventral nerve roots, resulting in flaccid paralysis. GBS has been suspected to develop in genetically prone humans who have been exposed to a secondary environmental trigger.^{1,2} *Campylobacter* spp infection has been identified as a major trigger for GBS in humans.³

The aim of this study was to identify risk factors, including *Campylobacter* spp infection, for the development of APN. *Campylobacter jejuni* is a commensal organism of the chicken gut and one of the leading causes of GI upset in humans worldwide.³ Consumption of raw or undercooked chicken by dogs is common in Australia, where this case-controlled study was conducted over a 2-year time period.

Paired fecal samples were obtained from 27 pet dogs with suspected APN and 47 healthy control dogs. An association was noted between APN dogs and *Campylobacter* spp-positive fecal samples. When considering only cases in which fecal samples were collected less than 7 days after clinical onset of signs, this association became significant. Consumption of raw meat—including chicken—and breed (ie, small vs large) were variables significantly associated with the development of APN in this population of dogs. Environmental variables (eg, contact with live birds, access to natural water sources), recent vaccination (within 6 weeks of onset of signs), sex, and age were not associated with the development of APN in this population of dogs.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** A thorough history (eg, recent travel, environmental variables) should be obtained for patients suspected of having acute polyradiculoneuritis, as acute polyradiculoneuritis is an immune-mediated disease that likely has an environmental trigger.
- 2** In the presence of consistent clinical signs, acute polyradiculoneuritis should be on the differential list for small-breed dogs and dogs that have a history of raw chicken consumption, as these variables have been significantly associated with the development of APN.
- 3** Chickens are a natural reservoir of *Campylobacter* spp, which are commonly transmitted to other animals and humans from consumption of raw or undercooked chicken. To reduce the risk for *Campylobacter* spp infection, clinicians should advise owners against feeding raw chicken to dogs.

References

1. Holt N, Murray M, Cuddon PA, Lappin MR. Sero-prevalence of various infectious agents in dogs with suspected acute canine polyradiculoneuritis. *J Vet Intern Med*. 2011;25(2):261-266.
2. Martinez-Anton L, Marendia M, Firestone SM, et al. Investigation of the role of *Campylobacter* infection in suspected acute polyradiculoneuritis in dogs. *J Vet Intern Med*. 2018;32(1):352-360.
3. Nyati KK, Nyati R. Role of *Campylobacter jejuni* infection in the pathogenesis of Guillain-Barré syndrome: an update. *Biomed Res Int*. 2013;2013:852195.