

# Craniocervical Junction Abnormalities in Chihuahuas

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## In the Literature

Kiviranta AM, Rusbridge C, Laitinen-Vapaavuori O, et al. Syringomyelia and craniocervical junction abnormalities in Chihuahuas. *J Vet Intern Med.* 2017;31(6):1771-1781.

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## FROM THE PAGE ...

*Chiari-like malformation* (CM) is a multifactorial craniocervical junction (CCJ) abnormality in dogs in which a portion of the cerebellum is herniated through the foramen magnum secondary to congenital hypoplasia of the supraoccipital bone. *Syringomyelia* (SM) is the development of fluid-filled cavities in the spinal cord parenchyma.<sup>1</sup> These malformations have been widely reported in Cavalier King Charles spaniels, Brussels Griffons, and other small-breed dogs.<sup>2</sup> This prospective study investigated the presence of SM and CCJ abnormalities and their associated clinical signs and neurologic deficits in 53 Chihuahuas.

The study found CM, SM, and other CCJ abnormalities to be prevalent in Chihuahuas. CM/SM-related clinical signs such as facial rubbing, spinal pain, vocalization, incoordination, weakness, and persistent scratching of the ears, shoulders, or cranial thoracic spinal area were observed in dogs with SM and other CCJ abnormalities such as atlanto-occipital overlapping.



Neurologic deficits, most commonly decreased postural reactions and ataxia, were noted in >50% of study subjects. The presence of postural reaction deficits was predictive of the presence of syringomyelia grade 2.

CM was observed in all 53 Chihuahuas. The presence of SM is thought to predispose animals to neuropathic pain, as pain correlates to syrinx width on MRI<sup>3</sup>; however, the CM/SM-related clinical signs, most commonly scratching and facial rubbing, were detected in dogs with and without SM. The large number of dogs that did not have SM but did have CM/SM-related clinical signs suggestive of neuropathic pain (ie, scratching, facial rubbing) may indicate that other CCJ abnormalities play an important role in the development of neuropathic pain. Seventy percent of study dogs had presence of atlanto-occipital overlapping, but this was not associated with CM/SM-related clinical signs, presence of SM, or severity of CM. Other CCJ abnormalities included medullary kinking and dorsal spinal cord compression.

## ... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** CM and SM have been reported in many breeds, most notably Cavalier King Charles spaniels, Brussels Griffons, and Chihuahuas.
- 2** SM, CM, and other CCJ abnormalities appear to be prevalent in Chihuahuas. These conditions should be considered in Chihuahuas with scratching of the ears, shoulders, or cranial thoracic area; facial rubbing; vocalization; spinal cord pain; ataxia; and/or postural reaction deficits.
- 3** Advanced imaging (eg, MRI, CT) is necessary to achieve diagnosis; thus, referral may be necessary.

## References

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