

Imaging Findings of Atlantoaxial Instability by Dens Fracture of Axis in 3 Dogs

Sooyoung Choi, Sooji Lim, Jiyoung An, In Lee, Sejoon Ahn, Younghan Kwon, Hojung Choi,
and Youngwon Lee*

*Department of Veterinary Medical Imaging, College of Veterinary Medicine,
Chungnam National University, Daejeon, Korea*

Signalment: A 2-year-old Maltese and a 5-month-old Yorkshire terrier showed ataxia. Tetraparesis was observed in a 9-year-old Yorkshire terrier. The locations of the lesion were determined to brain or cervical spinal cord by the neurological examination, and the following images were achieved: radiography, computed tomography(CT), and magnetic resonance imaging(MRI).

Results: On radiography, the malalignment between atlas(C1) and axis(C2), absent dens of axis, and increased space between the dorsal arch of C1 and spinous process of C2 were found. The discontinuation between dens and C2 vertebral body was identified through CT images. The hyperintense lesions and the spinal cord compression on T2-weight MR images were represented in two dogs with ataxia and tetraparesis, and the other dog represented only spinal cord compression. Three dogs were diagnosed as atlantoaxial instability (AAI) by dens fracture of C2. The dog with tetraparesis had the guarded prognosis, was euthanized. The others were recovered completely.

Clinical relevance: It is difficult that AAI by dens fracture of C2 differentiated from abnormal dens such as agenesis and hypoplasia. We thought that CT is very useful to evaluation the dens of C2 and differentiate the causes of AAI, and MRI make the evaluation of prognosis of AAI more precise.

Key words: AAI, dens fracture, dog, CT, MRI