Received: 7 December 2017 | Accepted: 12 January 2018

DOI: 10.1002/jgf2.156

IMAGES IN CLINICAL MEDICINE

Journal of General and Family Medicine Open Access WILEY

Anterior spinal cord syndrome—"owl's eye sign"

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KEYWORDS: anterior spinal cord syndrome, owl's eye sign, spinal cord infarction

A 68-year-old Japanese woman who presented with abdominal sensory loss was admitted to our hospital. Three days prior to admission, the patient experienced sudden onset of right lower chest pain and weakness in both legs, along with bladder and rectal disturbances. Although touch and proprioception were intact, physical examination revealed impaired sensitivity to pinpricks and temperature of her abdomen and thighs. On magnetic resonance imaging (MRI), a sagittal T2-weighted image (T2WI) indicated abnormally high signal intensity in the thoracic cord, extending from T5 to T10 and affecting the anterior two-thirds of the cord (Figure 1A; arrows). Further, an axial T2WI revealed the classical "owl's eye sign" involving central-anterior cord substance (Figure 1B; arrow).[1] The patient's clinical symptoms and imaging results were consistent with those of anterior spinal cord syndrome. Although the etiology of the syndrome was undetermined, anterior spinal artery infarction was suspected on the basis of her clinical characteristics, such as the sudden onset of symptoms.

Anterior spinal cord syndrome is caused by the damage or obstruction of anterior spinal artery, which provides the major blood supply to the anterior two-thirds of the spinal cord.[2] This syndrome is rare, which accounts for only 8% of all myelopathies, and is characterized by paralysis of the extremities, dissociated sensory loss, bowel and bladder dysfunction, and acute pain located at the level of the spinal cord lesion.[2] The etiology is varied and includes infarction, vasculitis, surgery, aortic dissection, and acute trauma, while it remains unclear in the 20%-30% of the patients.[3] Typical findings on MRI are hyperintense lesions on axial T2WI in the anterior horns demonstrating the "owl's eye" configuration.[2] This finding on MRI is also rare, and only a few cases have been described in the literature. Our case is unique because the diagnosis of the rare disease was successfully made on the basis of clinical and imaging findings. Clinical diagnosis of anterior spinal cord syndrome is difficult to establish; however, it may be determined by careful clinical examination supported by MRI findings.

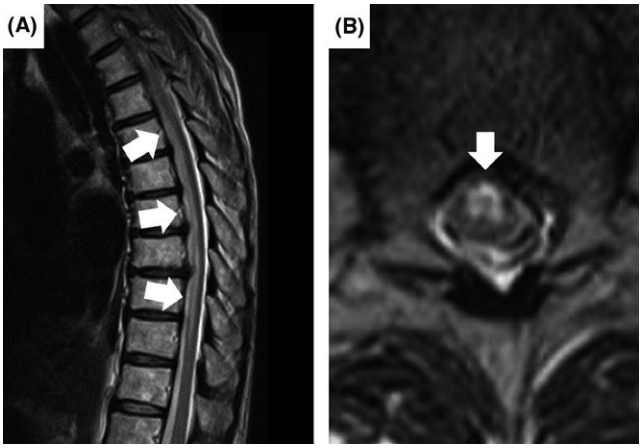

FIGURE 1 (A) Magnetic resonance imaging revealing abnormally high signal intensity in the thoracic cord, extending from T5 to T10 on a sagittal T2-weighted image. (B) An axial T2-weighted image showing "owl's eye sign" involving central-anterior cord

CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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How to cite this article: Harada K, Chiko Y, Toyokawa T. Anterior spinal cord syndrome—"owl's eye sign". *J Gen Fam Med*. 2018;19:63–64. https://doi.org/10.1002/jgf2.156