

CLINICAL QUIZ

Sudden Onset of Paraplegia With Rapid Progression to Tetraplegia in a Middle-Aged Man: What is the Diagnosis?

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ANSWER

MRI revealed an owl-eyes sign at the axial view (Figure 1), anterior predominant pointed edge, and hyperintense lesion at the cervical and upper thoracic cord level (Figure 2). A magnetic resonance angiogram ruled out vertebral arteries and aorta dissection. Another stroke investigation for him was non-revealing. Antiplatelet and statin were initiated as secondary stroke prevention.

At one month post-event, there was a slight improvement in his upper limbs with MRC power of 2/5 distally, his reflexes became brisk, and blood pressure and heart rate have since normalized. His final diagnosis was **anterior cord syndrome due to a spinal cord infarct**. The aetiology for his spinal cord infarct was unknown.

Anterior spinal cord infarction is a rare clinical entity, despite being commonly encountered in medical literature and board examination. The reported incidence of anterior spinal cord infarct was one per cent of all strokes (Diehn & Krecke, 2021). As a result, experience among clinicians for this stroke syndrome is limited, often leading to misdiagnosis (Romi & Naess, 2016).

The owl-eyes sign seen at the axial view of the spinal cord (Figure 1) is a result of anterior horns infarction. In the sagittal view of the spinal cord (Figure 2), the signal abnormality

occupied the anterior two-thirds of the cord with a tapering end, akin to the tip of a pencil (Saber & Gaillard, 2021). These imaging features coupled with acute tetraplegia; should alert the clinician to an anterior spinal cord infarct.

In doubtful cases, we suggest expert neurology and neuroradiology consult, with good clinical correlation. Other treatable mimickers, like inflammatory transverse myelitis, need to be considered while waiting for confirmatory testing (i.e., Aquaporin-4 antibody). The Aquaporin-4 antibody for this unfortunate man came back as negative.

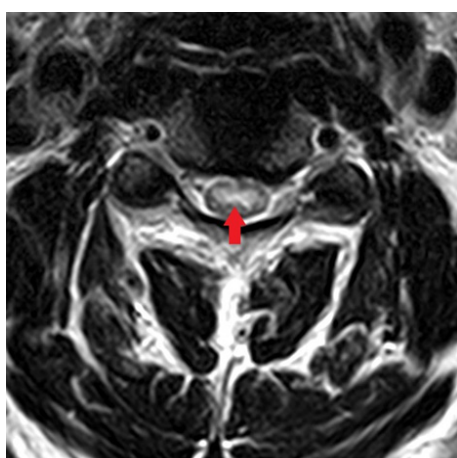


Figure 1 Axial T2WI MRI (magnified view) at the cervical cord level demonstrated the abnormal high T2 signal abnormality of the anterior spinal cord with the owl-eyes sign (red arrow)



Figure 2 Sagittal T2WI MRI demonstrating abnormal high T2 signal intensity of the anterior cervical cord horns with 'tipping' at the upper end; a pencil sign (red arrow)

CONFLICT OF INTEREST

The authors declare that they have no competing interests in publishing this case.

CONSENTS

Written informed consent for this paper (including images, case history and data) was obtained from the patient for publication of this case. A copy of the written consent is available for review by the Chief Editor.

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REFERENCES

- Diehn, F. E., & Krecke, K. N. (2021). Neuroimaging of spinal cord and cauda equina disorders. *Continuum (Minneapolis, Minn.)*, 27 (1), 225 – 263. <https://doi.org/10.1212/CON.0000000000000926>
- Romi, S., & Naess, H. (2016). Spinal cord infarction in clinical neurology: A review of characteristics and long-term prognosis in comparison to cerebral infarction. *Eur Neurol*, 76 (3 – 4), 95 – 98. <https://doi.org/10.1159/000446700>
- Saber, M., & Gaillard, F. (2021) Acute spinal cord ischemia syndrome. *Radiopedia*. Retrieved from <https://radiopaedia.org/articles/acute-spinal-cord-ischaemia-syndrome?lang=us> on 1 April 2021.