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Imaging highlights of anterior spinal cord infarction: Owl's eye sign

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A 31-year-old man without any premorbid illness was brought to the emergency department with the history of acute onset weakness of all four limbs with urinary retention following lifting of heavy weight above shoulder level. He had neck pain, upper backache, and deficits reached nadir in less than one hour of onset.

Neurological examination revealed flaccid quadriparesis with grade 0 power in both lower limbs and grade 3 in upper limbs. Sensory level was observed over upper chest with impaired pin prick and temperature, and normal proprioception and vibration. Cardiovascular system and other general examination was unremarkable.

Magnetic resonance imaging (MRI) of spine revealed features of spinal cord infarction in anterior spinal cord extending from C6 to D4. Sagittal diffusion weighted and apparent diffusion coefficient (ADC) sequences showed diffusion restriction (Figure 1, A and B). Corresponding axial images revealed hyperintensity with restricted diffusion in the anterior spinal cord depicting Owl's eye sign (Figure 1, C and D). Short Tau Inversion Recovery (STIR) sequence sagittal and axial (Figure 1, E and F) images revealed subtle hyperintensity.

Extensive etiological work-ups including prothrombotic profile, cardiac evaluation, and cerebrospinal fluid analysis was normal. Fasting lipid profile revealed dyslipidemia. In addition to good supportive care, he received deep vein thrombosis prophylaxis, ecosprin 150 mg daily, and atorvastatin 80 mg daily, as well as physiotherapy.

Spinal cord infarction is an uncommon cause of acute myelopathy with significant morbidity. Among spontaneous spinal cord infarctions, the majority are idiopathic.[1] History of preceding weight lifting makes the possibility of fibrocartilaginous embolism or arterial dissection more likely. Hyperacute onset, pain at onset, anterior central pattern, owl's eye sign on MRI, vertebral body infarction, diffusion restriction without enhancement on contrast, and normal

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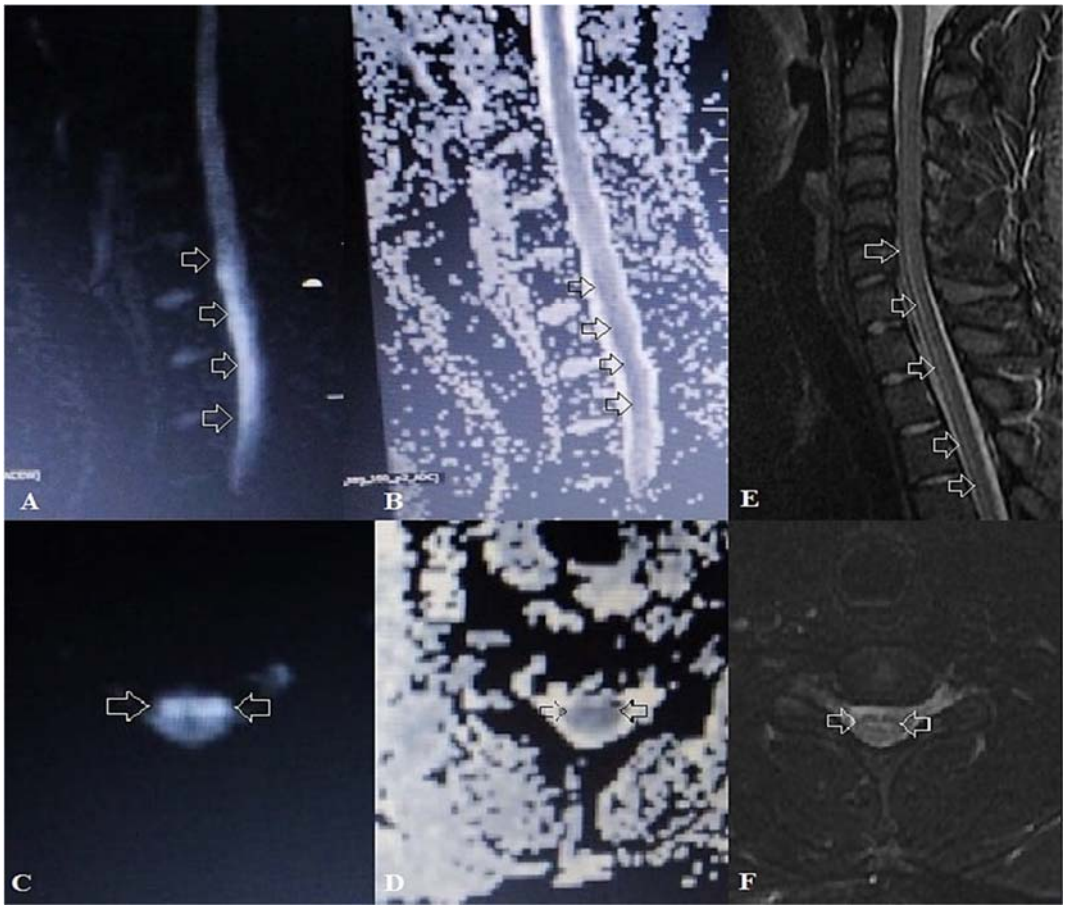

Figure 1. Magnetic resonance imaging (MRI) spine sagittal, diffusion weighted (A), and apparent diffusion coefficient (ADC) (B) sequences show long segment signal change in anterior spinal cord extending from C6 to D4 level with restricted diffusion. Corresponding axial images (C and D) depict diffusion restriction in anterior horns of spinal cord suggesting owl's eye sign. Sagittal and axial short tau inversion recovery (STIR) (E and F) images show subtle hyperintensity.

cerebrospinal fluid (CSF) cell count makes spinal cord infarction more likely than demyelination.[2]

Owl's eye sign and pencil-like T2 hyperintensities are described in anterior spinal artery syndrome; however, they are not very specific or mandatory for the diagnosis.[1,3] Rarely, in slowly progressive disorders like flail arm syndrome, owl's eye sign is observed, too.[4] In conjunction with typical clinical features, these classical imaging findings help in timely diagnosis of spinal cord infarction.

Conflict of Interests

The authors declare no conflict of interest in this study.

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