

Spinal Cord Infarction due to Aortic Atherosclerosis

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A 70-year-old man with hypertension presented with sudden bilateral leg weakness, paresthesias, and bladder dysfunction. Neurological examination revealed lower limb strength of 2/5 (right) and 4/5 (left) on the Medical Research Council scale with sensory loss below the L1 dermatome. New diagnoses of diabetes mellitus and hyperlipidemia were made. Spinal magnetic resonance imaging revealed a T2 hyperintense lesion in the anterior spinal artery territory at the T12 level (Figs. 1A and 1B). This lesion had high signal intensity on diffusion-weighted imaging (DWI, Figs. 1C and 1D) and low signal intensity on apparent diffusion coefficient (Figs. 1E and 1F), consistent with

spinal cord infarction (SCI). In addition, aortic computed tomography angiography revealed complex atherosclerotic plaques (≥ 4 mm thick) in the aortic arch (Fig. 1G). As no cardioembolic source was identified by transthoracic echocardiography or 24-hour Holter ECG monitoring, we postulated that artery-to-artery embolism from the complex aortic arch atheroma was the mechanism of SCI. After treatment with antiplatelet agents and rehabilitation, some of his symptoms improved.

The diagnosis of spontaneous SCI can be challenging.¹ The incorporation of DWI is essential to facilitate the identification of SCI.^{1,2} It is critical to identify the cause of SCI,

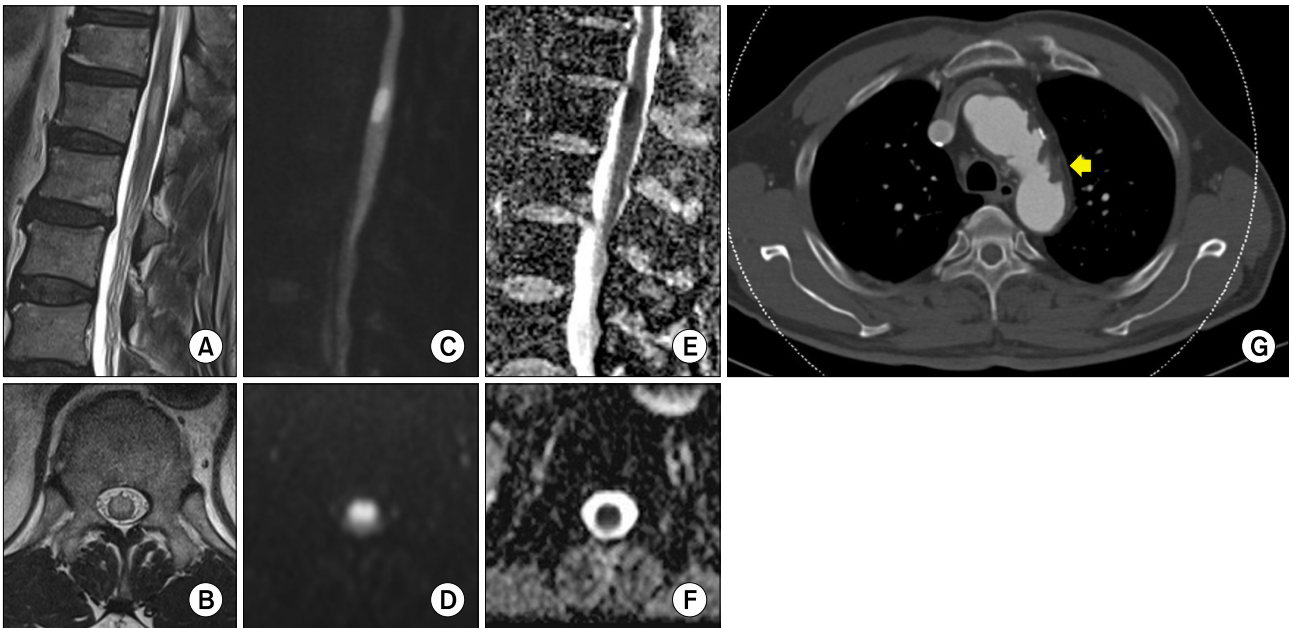


FIG. 1. Sagittal (A) and axial (B) magnetic resonance imaging of the spine showing a T2 hyperintense lesion within the anterior spinal artery territory at the T12 level. This lesion shows high signal intensity on diffusion-weighted imaging (C, sagittal image; D, axial image) and low signal intensity on apparent diffusion coefficient (E, sagittal image; F, axial image). In addition, aortic computed tomography angiography shows the presence of complex atherosclerotic plaques (≥ 4 mm thick) in the aortic arch (G, contrast-enhanced axial image, indicated by arrow).

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as this can significantly influence treatment decisions. Causes can be classified into several categories, including aortic disease (e.g., atherosclerosis, dissection), cardioembolism, systemic hypoperfusion, vasculitis, other determined causes (e.g., fibrocartilaginous embolism, bacterial meningitis, vertebral or subclavian artery dissection), or causes that remain undetermined.³ In individuals with vascular risk factors, aortic atherosclerosis is often found to be the primary cause of SCI.² Aortic computed tomography angiography plays a critical role in detecting atherosclerotic plaque, while also providing valuable insight into the underlying cause.²

CONFLICT OF INTEREST STATEMENT

None declared.

REFERENCES

1. Zalewski NL, Rabinstein AA, Krecke KN, Brown RD Jr, Wijdicks EFM, Weinschenker BG, et al. Characteristics of spontaneous spinal cord infarction and proposed diagnostic criteria. *JAMA Neurol* 2019;76:56-63.
2. Leys D, Pruvo JP. Spinal infarcts. *Rev Neurol (Paris)* 2021;177:459-68.
3. Thomas G, Alakbarzade V, Sammaraiee Y, Cociasu I, Dalton C, Pereira AC. Spontaneous spinal cord infarction: a practical approach. *Pract Neurol* 2022;22:497-502.