Dissecting aneurysm of the thoracic posterior spinal artery

Case illustration

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This 55-year-old man suffered acute abdominal pain followed rapidly by complete tetraplegia. On presentation he had no lower-extremity motor function and a T-11 sensory level (American Spinal Injury Association [ASIA] Grade A; ASIA motor score 50). A small bowel obstruction had been diagnosed 1 week prior to presentation, and he had undergone a laparotomy and lysis of adhesions for similar pain; there had been no other features of a bowel obstruction. The patient’s medical history was significant for hypertension. His surgical history was significant for having undergone an open cholecystectomy for cholecystitis 15 years prior to the current event. There was no history of connective-tissue disorders in the patient or his family. Spinal magnetic resonance (MR) imaging demonstrated a subdural and intramedullary hemorrhage in the lower thoracic spine (Fig. 1A).

Spinal angiography revealed an aneurysm arising from the posterior spinal artery at T-12 (Fig. 1B). Surgical exploration confirmed the subdural hematoma and an area of hemorrhage within the left posterior aspect of the spinal cord, and the fusiform aneurysm was identified in the hemorrhage cavity (Fig. 1C). The aneurysm was resected. Histopathological analysis revealed a disrupted elastic lamina and organized thrombus in the media and adventitia, consistent with a ruptured aneurysm. The vessel lumen and sac are filled with an organizing thrombus and a recent blood clot (lower-left portion of the image). Van Gieson, original magnification × 40.

Intraspinal aneurysms are rare lesions and have been identified in association with arteriovenous malformations and vessels collateralizing around a thrombosed vessel, suggesting that they may form as a result of high-flow states in the vessel of origin. The most common vessel of origin is the anterior spinal artery, and the most common region of involvement is the cervicomedullary region. This case is unique in that the aneurysm arose from the thoracic posterior spinal artery and it was secondary to a dissection. Several features suggest a dissection as the cause. These include the history of hypertension, at least two episodes of acute severe abdominal pain, the fusiform nature of the aneurysm, and the histological features of the lesion.

References


Fig. 2. Photomicrograph demonstrating that the internal elastic lamina (arrowheads) was focally disrupted (arrow), consistent with a ruptured aneurysm. The vessel lumen and sac are filled with an organizing thrombus and a recent blood clot (lower-left portion of the image). Van Gieson, original magnification × 40.