Teaching NeuroImages: Lower cervical spine dural arteriovenous fistula presenting as subarachnoid hemorrhage

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A 39-year-old man presented with sudden neck pain and headache. CT showed subarachnoid hemorrhage around medulla oblongata. Diagnostic angiography demonstrated a rare spinal dural arteriovenous fistula at the level of C5. The fistula recruits additional spinal pial arteries from the anterior spinal artery as feeding artery, most likely due to the venous sump effect induced by the dural shunt.[1] A spinal pial aneurysm, potential cause of hemorrhage, was presumed to be related to the hemodynamic stress produced by the high flow through the shunt (figure 1).[2] Endovascular embolization of the aneurysm and surgical interruption of the fistula was performed successfully (figure 2).

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Disclosure
The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

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Name	Location	Role	Contribution
Peng Gao, MD	Xuanwu Hospital of Capital Medical University, China	Author	Designed the study, analyzed the data, drafted the manuscript for intellectual content
Shiwei Du, MD	Xuanwu Hospital of Capital Medical University, China	Author	Data collection and analysis, drafted and revised the manuscript
Jian Ren, MD	Xuanwu Hospital of Capital Medical University, China	Author	Data collection and analysis, drafted and revised the manuscript
Guilin Li, MD	Xuanwu Hospital of Capital Medical University, China	Corresponding author	Critically reviewed and revised the manuscript
Hongqi Zhang, MD	Xuanwu Hospital of Capital Medical University, China	Author	Critically reviewed and revised the manuscript

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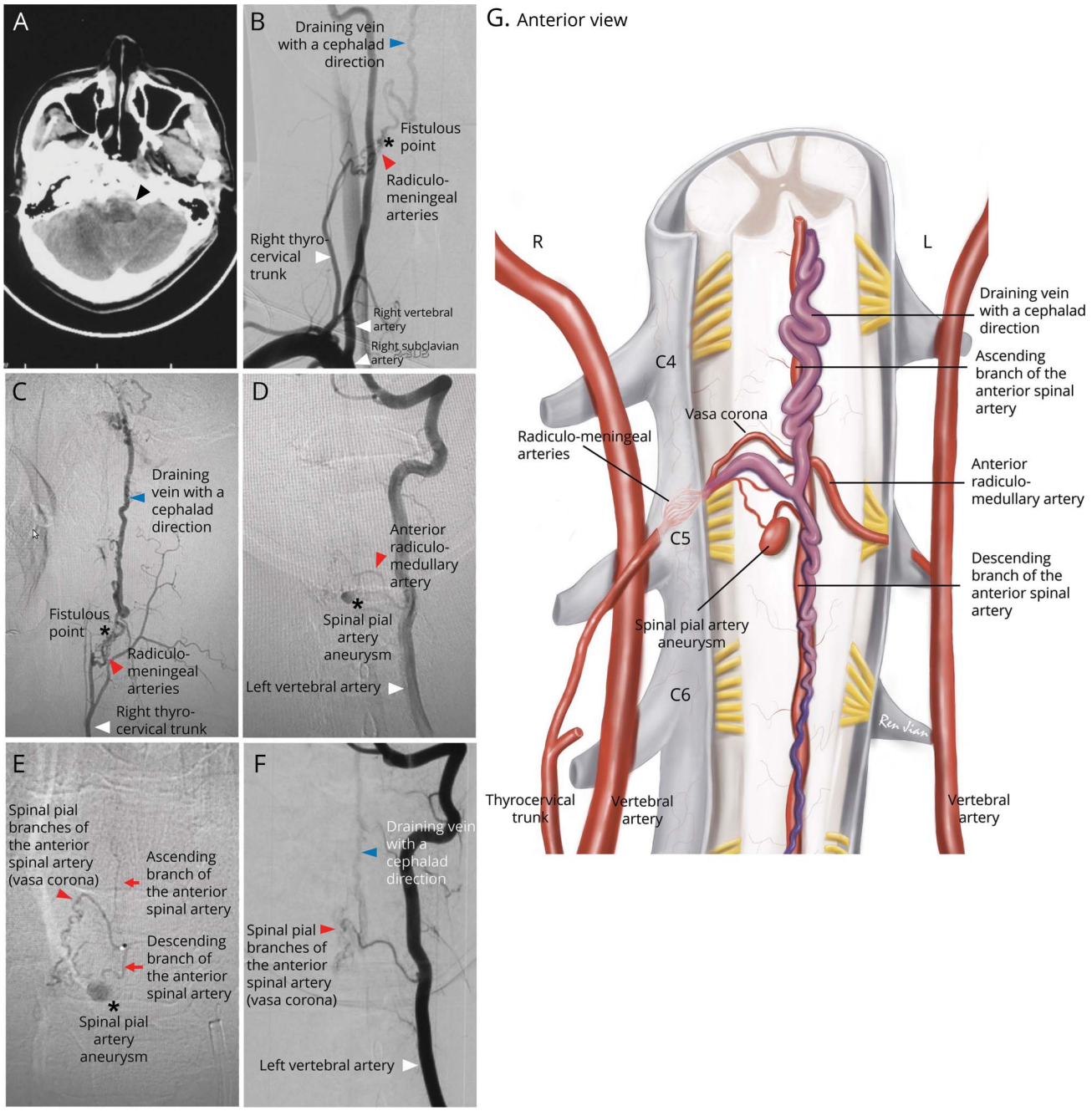
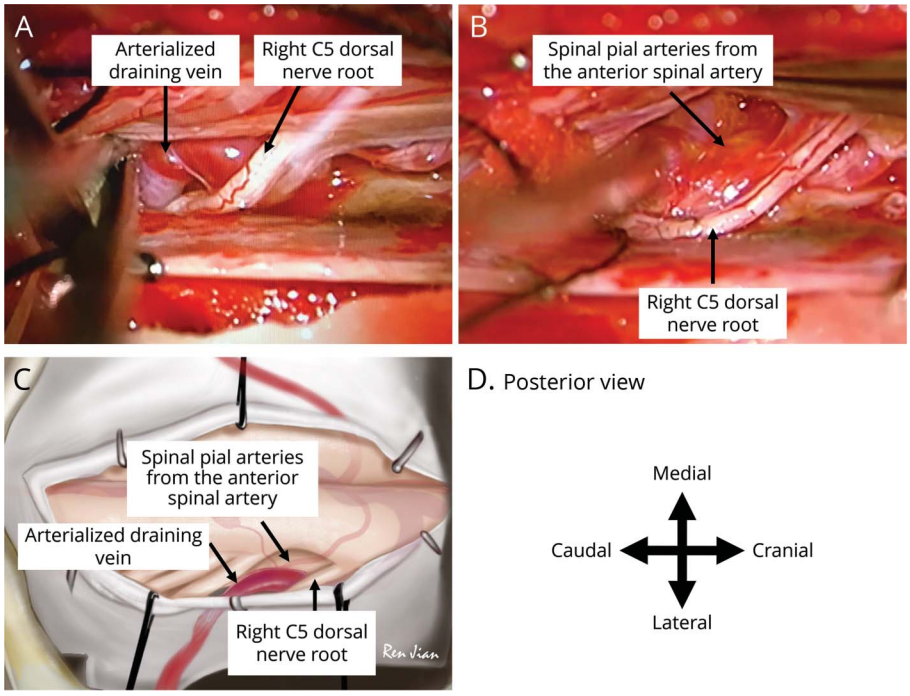
Figure 1 CT, angiography, and illustration



(A) Subarachnoid hemorrhage on CT (black arrowhead).Anterior (B) and lateral view (C), angiography of right thyrocervical trunk. (D) Angiography of left vertebral artery. (E) Superselective angiography of anterior radiculo-medullary artery. (F) Control angiography after aneurysm embolization. (G) Schematic illustration. Illustration by author Jian Ren, MD.

Figure 2 Intraoperative findings, illustration, and surgical orientation



(A, B) Intraoperative findings. (C) Illustration. (D) Surgical orientation. Illustration by author Jian Ren, MD.

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