



*Figure. Lateral vertebro-basilar angiogram shows a distal occlusion of the left vertebral artery (VA), with recanalization of the basilar artery via retrograde flow from the anterior spinal artery (arrow) (A), and shows a recanalization of the postocclusive segment of the right VA by spiral vessels without filling of the true lumen of the VA (arrow) (B).*

### Collateralization of vertebral arteries

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A 60-year-old man with a history of smoking, hypertension, and dyslipidemia had recurrent vertebro-basilar TIA. He was treated with aspirin. Results on T2- and diffusion-weighted MRI were normal. Perfusion-weighted imaging showed hypoperfusion in the vertebro-basilar territory. Cerebral arteriography revealed an atherosclerotic occlusion of the distal portion of the right and left vertebral arteries (VA). The basilar artery (BA) was exclusively filled by retrograde flow through the anterior spinal artery (ASA) (figure, A). There were no collaterals through the posterior com-

municating arteries. Thin and spiral vessels originating from the preocclusive segment of the right VA filled the distal portion (see figure, B). The patient was treated with warfarin and became asymptomatic.

The recanalization of the BA through the ASA in case of distal occlusion of both vertebral arteries has been described.<sup>1</sup> Conversely, recanalization of an occluded distal VA via dilatation of the vasa-vasorum has not. There are three similar cases described after atherosclerotic occlusion of the internal carotid artery.<sup>2</sup> The term "spring sign" was proposed.<sup>2</sup> It is interesting that the patient's symptoms continued while on aspirin yet resolved with warfarin, because the vascular picture suggests a hemodynamic rather than a thromboembolic process.

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