Lateral spinal artery aneurysm associated with a posterior inferior cerebellar artery main trunk occlusion

Case illustration

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Spinal artery aneurysms are rare in intracranial lesions, and lateral spinal artery (LSA) aneurysms have been reported in only two cases.1 We describe the first case of an LSA aneurysm developing after posterior inferior cerebellar artery (PICA) occlusion.

This 59-year-old woman was admitted to our hospital with sudden-onset severe headache and consciousness disturbance. A computerized tomography (CT) study revealed subarachnoid hemorrhage (SAH) in the posterior fossa, mostly around the medulla oblongata. Initial and subsequent angiographic studies demonstrated no vascular malformation (Fig. 1A). Fourteen days after admission, a new angiographic study showed a small aneurysm near the PICA, but its precise origin was not obvious. At 25 days, a fourth angiographic study revealed complete occlusion of the ipsilateral PICA, in which small collateral arteries were seen (Fig. 1B). During surgical exploration we found that the aneurysm was located on the LSA that contributed to the distal revascularization of the PICA (Fig. 2). After isolating the aneurysm, the lesion was excised. A ventriculoperitoneal shunt was placed to treat the hydrocephalus. Posttreatment, the patient’s disturbed consciousness gradually improved.

The LSA arises from the PICA or vertebral artery (VA) and descends beside the spinal cord posterolaterally, entering into the posterior spinal artery (PSA).1,2 To our knowledge, there have been only a few reports of aneurysms of the LSA or of the PSA.3–5 If the VA or PICA is occluded, resulting in changing hemodynamic forces, the LSA occasionally plays an important role as a collateral artery. Although LSA aneurysms are rare, in cases involving posterior fossa SAH and an initially negative angiogram, one must persist with further angiography with particular attention to distal branches of the posterior circulation, like the LSA, which can harbor an aneurysm.

References


Fig. 1. Admission angiographic studies. A: Neither the PICA nor the aneurysm was clearly visible on the right VA angiogram. B: Right VA angiogram (left oblique view) showing a 4 × 4-mm aneurysm with a well-demarcated round shape (arrowhead) 25 days after admission. The PICA main trunk (arrow) is not visible.

Fig. 2. A: Intraoperative view of the LSA aneurysm. B: Artist’s drawing in which the suction tip and dissector have been erased. The collateral vascular network on the posterolateral surface of the medulla oblongata supplied the blood flow to the distal PICA territory. a = aneurysm; b = LSA; c = PICA; d = occlusive PICA; e = VA; f = collateral artery.

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