Exclusion of these ruptured aneurysms can be accomplished endovascularly or microsurgically by sacrificing the parent artery, but revascularization of the PICA territory can only be accomplished microsurgically.

In situ bypass with a side-to-side anastomosis between the caudal loops of PICA bilaterally is an attractive option for these aneurysms.

Among the variations of vertebral artery dissecting aneurysms (VDAs), VDAs involving the posterior inferior cerebellar artery (PICA), especially ruptured and high-risk unruptured aneurysms, are the most difficult to treat.

Shi et al. used the PubMed database to review recent research concerning VDAs that involve the PICA, and found that treatments for VDAs involving the PICA include (i) endovascular treatment involving the reconstruction of blood vessels and blood flow, (ii) occluding the aneurysm using an internal coil trapping or an assisted bypass, (iii) inducing reversed blood flow by occluding the proximal VDA or forming an assisted bypass, or (iv) the reconstruction of blood flow via a craniotomy. Although the methods effectively treat VDAs involving the PICA, each method is associated with both a high degree of risk and specific advantages and disadvantages. The core problem when treating VDAs involving the PICA is to retain the PICA while occluding the aneurysm. Therefore, the method is generally selected on a case-by-case basis according to the characteristics of the aneurysm. In this study, we summarize the various current methods that are used to treat VDAs involving the PICA and provide schematic diagrams as our conclusion. Because there is no special field of research concerning VDAs involving the PICA, these cases are hidden within many multiple-cases studies. Therefore, this study does not review all relevant documents and may have some limitations. Thus, they have focused on the mainstream treatments for VDAs that involve the PICA [1].

A video demonstrates trapping and side-to-side anastomosis of a ruptured proximal PICA aneurysm. This 28-yr-old woman presented with sudden headache and nausea, and angiography demonstrated a fusiform dissecting aneurysm at the left PICA origin measuring approximately 6 mm in diameter. A left far lateral craniotomy exposed the left PICA aneurysm, and it was not amenable for direct clipping or end-to-end reconstruction. Key technical points of the PICA–PICA in situ bypass include the following: extensive arachnoidal dissection to bring the p3 segments together without tension; arteriotomies 3 times the diameter of the arteries; continuous intraluminal suturing of the first suture line; continuous extraluminal suturing of the second suture line; and preservation of medullary perforators. Indocyanine green videoangiography confirmed patency of the bypass; the aneurysm was trapped and excised. The patient tolerated the operation well and made an excellent recovery (modified Rankin Scale score 0 at 6 mo). The PICA–PICA in situ bypass is an effective option when end-to-end reanastomosis is not possible, and it has a lower risk profile than PICA reimplantation onto the vertebral artery [2].

[1]
Shi L, Xu K, Sun X, Yu J. Therapeutic Progress in Treating Vertebral Dissecting Aneurysms Involving the Posterior Inferior Cerebellar Artery. Int J Med Sci. 2016 Jun 30;13(7):540-555. eCollection 2016. Review. PubMed PMID: 27429591.
[2]
Arnau Benet, MD, Nicola Montemurro, MD, Michael T. Lawton, MD; Management of a Ruptured Posterior Inferior Cerebellar Artery (PICA) Aneurysm With PICA–PICA In Situ Bypass and Trapping: 3-Dimensional Operative Video. Oper Neurosurg (Hagerstown) 2017; 13 (3): 400. doi: 10.1093/ons/opw022

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