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End-to-end revascularization between the occipital Artery(OA) and the p1 segment of posterior inferior cerebellar Artery(PICA) for a patient with posterior circulation ischemia via a far-lateral approach:2-Dimensional Operative video

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ABSTRACT

Vertebral artery (VA) Aneurysms involving the origin of the posterior inferior cerebellar artery (PICA) ,occasionally, induce cerebellum and brainstem infarction due to intraluminal thrombus and calcific VA stenosis. At times, vessel occlusion and revascularization is necessary for successful obliteration of these aneurysms.2 The occipital artery (OA) is often the preferred donor graft for lesions of the posterior fossa. Although most OA-PICA bypasses can be performed using the p3 segment as the recipient site for an end-to-side anastomosis, a more feasible alternative to conventional OA-p3 PICA bypass in cases of high-riding caudal loops , aberrant anatomy or p3 multiple perforators is to free the p1 PICA, transpose it away from the lower cranial nerves, and perform an end-to-end OA-p1 PICA bypass instead. This video captures the dissection of the OA using an orientational anterograde harvesting technique and the end-to-end anastomosis of the OA to the PICA at the p1 segment. This was performed in a 56-year-old man who presented with posterior circulation ischemia from a fusiform aneurysm with calcific vertebral artery stenosis located at the origin of the right PICA. The patient tolerated the procedure well and suffered no major complications related to the operation. He did experience some mild, posterior neck rigidity at the time of his 6-month follow-up, likely due to nerve injury that occurred while harvesting the OA. Overall, the patient remains in good neurologic status 1 year after the operation. The operation proved the feasibility of end-to-end bypass in OA-p1 PICA.

Vertebral artery (VA)Aneurysms involving the origin of the posterior inferior cerebellar artery (PICA),occasionally, induce cerebellum and brainstem infarction due to intraluminal thrombus and calcific VA stenosis.[1] At times, vessel occlusion and revascularization is necessary for successful obliteration of these aneurysms.[2] The occipital artery (OA) is often the preferred donor graft for lesions of the posterior fossa.[3,4] Although most OA-PICA bypasses can be performed using the p3 segment as the recipient site for an end-to-side anastomosis, a more feasible alternative to conventional OA-p3 PICA bypass in cases of high-riding caudal loops, aberrant anatomy or p3 multiple perforators is to free the p1 PICA, transpose it away from the lower cranial nerves, and perform an end-to-end OA-p1 PICA bypass instead.[5] This video captures the dissection of the OA using an orientational anterograde harvesting technique and the end-to-end anastomosis of the OA to the PICA at the p1 segment. This was performed in a 56-year-old man who presented with posterior circulation ischemia from a fusiform aneurysm with calcific vertebral artery stenosis located at the origin of the right PICA. The patient tolerated the procedure well and suffered no major complications related to the operation. He did experience some mild, posterior neck rigidity at the time of his 6-month follow-up, likely due to nerve injury that occurred while harvesting the OA.[6] Overall, the patient remains in good neurologic status 1 year after the operation. The operation proved the feasibility of end-to-end bypass in OA-PICA (p1).

CRediT authorship contribution statement

Xiaolong Wang: Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft, Visualization. **Lixiong Xue:** Supervision, Validation. **Li Han:** Resources, Software. **Xinmin Ding:** Conceptualization, Funding acquisition, Supervision, Writing – review & editing.

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Abbreviations

OA	Occipital artery
PICA	Posterior inferior cerebellar artery
VA	Vertebral artery
SOM	Superior oblique muscle
INL	Inferior nuchal line
SNL	Superior nuchal line

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.wnsx.2024.100288.

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