



## Occipital Artery Harvesting and Anastomosis to P3 Segment of Posterior Inferior Cerebellar Artery: Operative Video

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### Key words

- Anastomosis
- Aneurysm
- Bypass
- Cerebrovascular
- Harvest
- Occipital artery
- Posterior inferior cerebellar artery

### Abbreviations and Acronyms

**OA:** Occipital artery

**PICA:** Posterior inferior cerebellar artery

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Aneurysms involving the origin of the posterior inferior cerebellar artery (PICA) have a greater incidence of fusiform morphology, intraluminal thrombi, and wall calcifications. At times, a complex treatment strategy with vessel occlusion and revascularization using a bypass graft is necessary for successful obliteration of these aneurysms. The occipital artery (OA) is often the preferred donor graft for lesions of the posterior fossa because of its proximity to the target recipient vessels. However, dissection of an OA can be challenging, given its anatomically tortuous path and the presence of thick surrounding muscles. This video captures the dissection of the OA using an unconventional, “inside-out” harvesting technique and the end-to-side anastomosis of the OA to the PICA at the p3 segment. This was performed in a 58-year-old man who presented with a subarachnoid hemorrhage (Hunt and Hess grade IV) from a ruptured fusiform aneurysm located at the origin of the right PICA. Major steps in Video 1 during this case include 1) dissection and harvesting of the OA using the “inside out” technique, 2) placement of 2 temporary clips occluding the PICA and isolating the P3 segment, 3) end-to-side OA-P3 anastomosis, and 4) removal of the temporary clips and confirmation of the PICA’s patency using intraoperative indocyanine green. Due to the potential for infarction of the brainstem, the patient was started on dual antiplatelet therapy postoperatively. The patient tolerated the procedure well and suffered no major complications related to the operation or from being placed on dual antiplatelet therapy. He did experience some mild, posterior neck pain and rigidity at the time of his 3-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. Complex fusiform aneurysms at the origin of PICA can be successfully treated via an OA-PICA bypass.

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