**Title:**

Fukushima EC-IC Bypass in Treating Cavernous ICA Mycotic Aneurysm

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**Abstract:**

This is a 55-year-old gentleman who presented with fulminant sphenoid sinusitis leading to cavernous sinus thrombosis. An enlarging right cavernous internal carotid artery (ICA) mycotic aneurysm was found after a long course of antibiotics. Endovascular treatment with stenting or coiling was considered but in fear of septic emboli secondary to foreign body placement, open trapping of the cavernous ICA segment was the remaining choice.

Right petrous ICA to radial artery (RA) graft to right middle cerebral artery (MCA) high flow bypass was performed followed by cavernous ICA trapping with clips placed at the petrous and clinoidal ICA. The procedure was smooth, and the patient gradually recovered without added neurological deficit. Follow-up Computed Tomography Angiography (CTA) confirmed successful trapping of the diseased cavernous ICA segment.

This was our first extracranial-intracranial (EC-IC) high flow bypass using the petrous ICA as the site of proximal anastomosis hence sparing a neck incision. The challenges we faced included firstly the difficulty in achieving adequate vascular control within the skull base, secondly to perform petrous ICA anastomosis at a depth within the Glasscock and Kawase triangle, and thirdly in order to maintain the patency of ophthalmic artery we applied the distal clip at the clinoidal ICA segment after dissecting the proximal and distal dural ring.

The famous Fukushima bypass (petrous to supraclinoid ICA) is doable and can be considered in treating cavernous ICA segment pathology as demonstrated by our operative video.