7th Bi-Neurovascular Symposium

September 23-23, 2023 / SIGNIEL, Busan, Korea

Surgical clipping of a giant aneurysm that recurred after stent-assisted coil embolization

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Purpose:

Retreatment of recurred large/giant aneurysm after coil embolization is challenging because endovascular treatment cannot warrant complete occlusion and surgical clipping is technically difficult. Here, we show a surgical treatment of a recurred giant intracranial aneurysm that was initially treated by stent-assisted coil embolization.

Methods:

A 50-year old woman experienced a rupture of a giant anterior communicating artery aneurysm measuring 25mm and was treated by stent-assisted coil embolization. She fortunately recovered without neurologic sequalae. However, 1-year follow-up brain magnetic resonance angiography showed regrowth of the aneurysm, and cerebral angiography confirmed the aneurysm regrowth (measuring 29mm in diameter) and coil compaction. Surgical clipping was decided for complete occlusion of the aneurysm.

Results:

Bicoronal craniotomy extended to the right pterional area was performed. Via the right pterional corridor, proximal control of the bilateral A1 was achieved, and via interhemispheric approach, aneurysm dissection was attempted. Due to its large size, aneurysm dissection and neck remodeling seemed impossible without removing the coils inside the aneurysm. By temporarily clamping the bilateral A1 and A2, aneurysmectomy was performed but the coil mass could not be easily removed, as it was strongly stuck to the fibrous tissue inside the sac. The coiled mass had to be cut with scissors into small pieces for removal. After removing most of the coil mass and a part of the aneurysmal sac, the aneurysm was clipped with multiple clips. Postoperative cerebral angiogram showed a complete obliteration of the aneurysm and total occlusions of the bilateral A1, with ACA territories filled by leptomeningeal collateral flow from middle cerebral arteries. Brain MRI showed left caudate nucleus infarction but the patient was discharged without any neurologic sequalae.

Conclusions:

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