

Treatment of Giant Carotid Artery Aneurysm With Endovascular Flow Diverter Stenting

The treatment of giant intracranial aneurysms (>2.5 cm) remains extremely challenging. Sacrifice of the parent artery (parent artery occlusion) was commonly done in past to treat such aneurysms. But recently with availability of flow diverter stents such aneurysms can be safely treated with preservation of parent artery.

History: A 64-year-old female, k/c/o hypertension was experiencing on and off headache for about a year. She started developing double vision for past 6 months. On examination she had right 6th cranial nerve palsy. (Fig. 1) MRI brain and CTA showed a large right ICA Clinoid aneurysm. (Fig. 2)

Cerebral Digital Subtraction Angiography (DSA): A giant wide neck paraclinoid aneurysm over right ICA of size 3.2 cm x 3.5 cm x 3.4 cm with 1.7 cm neck, directed inferolaterally and posteriorly with smooth surface. (Fig. 3)

Patient was successfully treated with endovascular placement of flow diverter stent across the aneurysm.

FRED 4.5x 45x39 Flow Diverter stent was deployed under fluoroscopic guidance across the aneurysm (from right M1 to petrous part of right ICA). Check DSA showed excellent opening of stent with normal flow across and stasis in aneurysm sac. Distal flow into MCA was normal. (Fig. 4 and Fig. 5)

Patient did well and was discharged in stable clinical condition after 3 days.

Flow Diverters: Flow diversion, in its present state, is based on the placement of a wire mesh stent within the parent vessel across the neck of the aneurysm. The wire mesh has the effect of reducing flow into the aneurysm without interfering with flow in normal arterial branches that the stent also crosses. It also provides a scaffold for intimal flap repair and reconstruction of the vessel wall. By exerting a low intrinsic radial force, these stents may help to stabilize the vessel wall and compress dissected layers to maintain a patent lumen. (Fig. 6)

Clinical team:

Dr Vishal A Chafale, Consultant, Interventional Neurology

Dr. Shekhar Patil, Consultant, Neurology

