Letter to the Editor

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Letter by Rustemi et al Regarding Article, "Flow Diverters for Intracranial Aneurysms: The DIVERSION National Prospective Cohort Study"

To the Editor:

We read with great interest the DIVERSION study (Flow Diverters for Intracranial Aneurysms).[1] This national prospective observational cohort study enrolled patients in whom a flow diverter (FD) was implanted for intracranial aneurysms with or without additional embolic coils, based on the neuroradiologists' selection. Four hundred twelve procedures representing 398 patients with 458 unruptured and 19 acutely ruptured aneurysms were enrolled. Sixty-six (16%) of the 412 interventions had a complication, and 10 of them caused a neurological deficit. Analysis for location was performed in the 49 middle cerebral artery aneurysms with 17.4% complication rate. Eighty-three percent of the interventions had a follow-up of at least 9 months. During the 12-month follow-up, 13 deaths were observed, of whom 10 for unruptured aneurysms. Excluding 3 deaths for other causes, the resting 10 (10.2%) included cerebral hemorrhagic or ischemic causes, although 5 (1.2%) of them were directly related to the procedure and flow diverter. A total of 21.8% of interventions experienced at least 1 morbidity during the 12-month follow-up. Among the serious events, 5.9% were considered permanent and related to the procedure.

There was a satisfactory aneurysms occlusion in 22% postprocedural angiograms and 79.9% at 12-month follow-up. Data are available for 291 aneurysms and missing for the 39% of the aneurysms.

Intrastent stenosis >50% and occlusion of a covered collateral was found in 3.5% and 9.9% at 12 months, respectively.

Most of the aneurysms were <10 mm in diameter. Larger aneurysms, high baseline blood pressure, and diabetes mellitus were associated with a higher occurrence of neurological deficits.

The study was observational, and there was not a randomized assignment to FD. The subjective neuroradiologists' selection resulted in an expansion of the aneurysm locations suitable for FD.

Concerning the complications, the study offers only the middle cerebral artery location analysis. The authors acknowledge that for bifurcation aneurysms clipping is the standard of care,[1] especially in complex or thrombosed ones.[2] Flow diversion is common in proximal unruptured aneurysms of the internal carotid artery, where surgery would be more complex. However, FD could be problematic in other internal carotid artery locations such as in posterior communicating artery aneurysms. In these cases, there is a competitive flow from the posterior communicating artery in nonfetal type, and the posterior communicating artery is to be preserved in the fetal type, as it resembles a bifurcation location. The non-negligible intrastent stenosis, collateral occlusion along with an incomplete occlusion make retreatment difficult. Thus, location analysis would be of practical interest. We would encourage the authors for an ad hoc analysis of results based on the aneurysms' location. Many technical advances have been made in the surgical treatment[3–5] for anterior circulation aneurysms, and FD has still to be compared with clipping for unruptured small anterior circulation aneurysms. The study includes a low number of ruptured aneurysms, and the authors recognize that FD is not the standard treatment for them.

Disclosures

None.

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