Hybrid approach to aortic arch aneurysms: surgical supra-aortic vessels transposition and endovascular stent-graft placement.

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BACKGROUND The treatment of aortic arch aneurysms represents a challenge for cardiologists and surgeons. To date, surgical repair has represented the only effective approach, but the need of deep hypotermic circulatory arrest contraindicates it in high risk patients. Recently, endovascular approach (EVAR) has become a new, less-invasive, option. EVAR applicability to the aortic arch is limited by the presence of the origin of supra-aortic vessels. Hybrid approach consisting in a surgical supra-aortic vessels transposition (total or partial) combined with endovascular stent-graft placement in the arch. This less-invasive approach extends EVAR indications to arch aneurysms. We report our experience with this technique. METHODS From August 2004 to June 2010, 24 patients (women n=3; men n=21, mean age 71 years) with aortic arch aneurysm involving the origin of the cerebral vessels were referred to our center. Patients were treated by sequential transposition of the left carotid artery into the right common carotid artery (5 pts) or by reversed bifurcated vascular prosthesis from the ascending aorta to the brachiocephalic trunk as well as to the left common carotid artery (14 pts). One patient received an ascending aorta and arch reconstruction with brachiocephalic trunk, left carotid and right subclavian artery re-implant. One patient underwent arch replacement with the elephant trunk technique. Subsequently the patients underwent endovascular stent-graft placement into the aortic arch or arch plus descending segment. RESULTS Endo-graft deployment and aneurysm exclusion were successful in all cases. No case of paraplegia was recorded. One major stroke occurred; this patient died during follow-up. Two type I and one type III endoleaks were observed at discharge; two revolved during follow-up. Two new onset type II endoleaks were recorded during follow-up. CONCLUSIONS Hybrid approach to aortic aneurysms repair seems to be feasible and safe. Long term follow-up is necessary to confirm the stability of this technique.

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