

ENDOVASCULAR AND HYBRID TREATMENT OF THE THORACIC AND THORACOABDOMINAL AORTIC ANEURYSMS AND DISSECTIONS

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Aims

The aim of the work is to evaluate the immediate and long-term results of endovascular treatment of the thoracic and thoracoabdominal aorta.

Methods

A total of 59 patients were treated with various pathologies of the thoracic and thoracoabdominal aorta. 38 - planned intervention, 21 - emergency. Among them: 5 aortic dissection type I; 5 aortic dissections type IIIa; 26 - IIIb by M.E. De Bakey; 21 - true aortic aneurysm; 2 - mega-aorta. All patients underwent preoperative MSCT angiography. 35 patients required the creation of fixation zone, for which the following hybrid operations were performed: visceral debranching (n = 3) for zone 4; left SubCA to LCCA bypass (n = 10) for zone 2; left SubCA+LCCA to right SubCA bypass (n = 9) or into right CCA (n = 5) for zone 1; total aortic arch debranching (1); ATA prosthetics with aortic arch reconstruction (6); frozen elephant trunk + visceral debranching (1) for zone 0. The "Chimney" technique was used in 5 cases: in aortic arch aneurysm (n = 4), in type I TAAA (n = 1). Stent grafting was performed in 19 patients, with overlap of the left SubCA ostium in 6 of them.

Results

Technical success was 100%. The average debranching time was 280.4±70.4 min. Clamping time during debranching: for the carotid artery was 8±3.8 min, visceral and renal arteries 15.2±4.8 min. The interval between operations was 24.9±19.6 days for planned operations, and during one operation for emergency ones. Average time of stent grafting was 179.2±60.7 min. TEVAR was performed in 55 patients (%), TEVAR-EVAR in 4 (%). Early postoperative complications: temporary paraplegia 3.3% (n = 2); phrenic nerve neuropathy after debranching zone I (n = 6); bleeding from anastomosis % (n = 2); Stroke after TEVAR 3.3% (n = 2), in one case it was associated with overlapping of the left SubCA; Dissection of the ATA was observed in 1.7% (n=1) after TEVAR. Observed endoleaks: type I n=5 (8.4%); type II n=2(3.3%); type III n=2(3.3%).



Developing of steel-syndrome was occurred in 1 case, that lead to replacing the left SubCA into LCCA. A total of 2 immediate complications developed during left SubCA overlapping: steel-syndrome and stroke. Hospital mortality was 8.4% (n=5): 2.6% (n=1) after planned operation and 12.2% in emergency (n=4). Causes of mortality: PE(n=1); stroke(n=1); DTA rupture along the distal edge of a stent graft (n=1); pneumonia (n=2). 2 patients died during the first year of observation (oncology, PE), the survival rate was 96.2%. 2 patients (50% of 4 cases of visceral debranching) died during the waiting time for the stent grafting (2 and 4 months) after first stage of hybrid operation - debranching of the abdominal aorta. Repeated operations performed in 3 patients: 3 years after TEVAR with overlap of left SubCA the sharp vision decrease has occurred, the transposition of left SubCA into CCA was performed(n=1); 2 years after TEVAR the expansion of DTA due to endoleak was managed by the abdominal aorta dissection elimination with prosthetics of the DTA was performed(n=1); 7 months after the total aortic arch debranching and TEVAR for RTAD, the ATA prosthesis was performed(n=1).

Conclusions

Hybrid operations on the aortic arch and descending thoracic aorta are safe and effective treatment with a high level of survival - 96.2%. The time between the stages of hybrid reconstruction should be less than 1 month due to up to the 50% risk of aortic aneurysm rupture.