Mid-term results of hybrid aortic Arch Repair
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BACKGROUND
Current approaches imply the involvement of endovascular techniques for aortic aneurysm repair using stent grafts. But endovascular repair of the aortic arch is complicated by its specific anatomical and physiological features, in this way the use of interventional techniques only is often insufficient. Hybrid procedures allow to avoid traumatic access to reduce the risk of perioperative complications, to accelerate postoperative rehabilitation.

PURPOSE
The purpose of the report is to analyze the immediate and mid-term results of hybrid surgical treatment in patients with aortic arch aneurysm.

METHODS
- From December 2016 in Clinic of the Vascular and Interventional Surgery Department Almazov National Medical Research Centre 23 patients with aortic arch aneurysm were treated. Mean age was 70.4 ± 6.4. The significant concomitant pathology and risk factors were: arterial hypertension, CAD, dyslipidemia, smoking (Table 1).
- Preprocedural computer tomography (CT) angiography was done to confirm aneurysm morphology (Table 2).

RESULTS
Technical success was 100%.
- In the early postoperative period there was no neurological complications, renal failure, 1 patient after TEVAR with dislocation and overlapping of the left common carotid artery origin developed TIA and left upper extremity ischemia, which required the stenting the left common carotid artery origin.
- The 30-day mortality rate was 0%.
- There were no endoleaks or signs of dissection intraoperatively and according to the results of control CT-scan in 9-12 months after the procedure.

The hybrid procedures were carried out in two stages:
- first stage for all patients was extraanatomic bypass of brachiocephalic arteries for increase proximal landing zone;
- second stage was TEVAR in Z1-Z2 zones.

Case presentation:
A 78-year-old man with dysphagia, chest pain, hoarseness. Computed tomography (CT) angiography showed a saccular aneurysm (95mm x 61 mm) immediately distal to the ostium of the left common carotid artery (CCA) (Figure 1).

Surgical strategy:
- Open repair of the aortic aneurysm was associated with extremely high risk of postoperative complications due to the advanced age, comorbidities (COPD and stroke in history), location of the aneurysm, and specific features of proximal aortic branches.

CONCLUSION
The results show that treatment of aortic arch aneurysm with hybrid techniques has potential benefits, such as the absence of massive operating trauma and blood loss, reduced risk of complications, reduction of the patient’s in-hospital stay with good long-term results.