ENDOVASCULAR TREATMENT OF TRAUMATIC ARTERIOVENOUS FISTULAS IN DIFFERENT LOCATIONS

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• Vascular injuries in peacetime is comparable to that in the period of wars and varies from 0.2% to 4% of the total number of injured. While at 48.9 - 68.7% of the cases subsequently formed peripheral aneurysms and arteriovenous fistulae*

• Depending on the size of the fistula, its location and duration of existence, the discharge of blood can lead to significant hemodynamic**

*B.V. Petrovsky. Surgery of aneurysms of peripheral vessels, 1970
Material and methods

• From 2003 to 2016 years endovascular intervention in TAVF were performed at 29 patients.
• Men – 23, women – 6. Age from 19 to 83 years old (41,2±16.7 years).

TAFV localized:
- external temporal artery – 1,
- the first segment of the subclavian artery – 2, vertebral artery – 2,
- right internal thoracic artery – 1, the ascending aorta – 1,
- between the aorta and the left renal vein – 2,
- splenic artery – 1, the left gastric artery – 1,
- renal artery – 2, hepatic artery – 1, internal iliac artery – 2,
- the superficial femoral artery – 3,
- deep artery of the thigh – 2,
- artery of tibia – 8
Material and methods

• For the duration of the existence: 2 day – 2, up to 1 year – 6, from 1 year to 5 years – 8, from 5 to 10 years – 6, over 10 years – 7.
• Causes of arteriovenous fistulas were the following types of damage: in 7 cases – iatrogenic, 12 – stab, 5 gunshot wounds, 4 – blunt force trauma, 1 – explosive trauma
• All 8 patients with involvement of lower extremity arteries was a violation of the support function, pain, trophic disorders.
• In long-existing arteriovenous discharges developed severe heart failure – 8 cases: TAVF deep artery of the thigh – 2 patients, internal iliac artery – 2, anastomosis between the aorta and the left renal vein – 1, the ascending aorta – 1, the right internal mammary artery -1 and in one case of fistula of the subclavian artery in the first segment.
• In one patient with arteriovenous fistula of the splenic artery was severe portal hypertension.
• In all cases (100%) was achieved angiographic and clinical success.
• During the execution of the interventions and in the immediate postoperative period were the following complications. When dividing TAVF deep artery of the thigh was migration occlusive coil via arteriovenous fistula in the pulmonary artery, from where it was extracted using Dormia`s basket.
• In the early postoperative period in 2 cases (up to two weeks) was showed thrombosis of the self-expanding stent-grafts installed in the SFA and in arteria tibialis anterior, which, however, did not lead to the deterioration of the patients and did not require additional treatment.
• After occlusion of the TAVF between the aorta and the left renal vein in one case, had a thrombosis of the Vena cava inferior, which required the installation of a cava filter and thrombectomy.
Self-expandable stent-grafts
Balloon-expandable stent-grafts
Conclusion

- TAVF, regardless of their size, location, and time of existence should be divided.
- The continued existence of arteriovenous discharge of the blood leads to the formation of heart failure, persistent changes in the cardiovascular system, therefore, surgical intervention for the elimination of arteriovenous fistulas should be performed as early as possible.
- Modern technologies and tools, used in endovascular interventions, allow even under difficult anatomical options to ensure reliable separation arteriovenous fistulas.
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