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An active surgical approach of treatment of embologenic venous thromboses in the basin of the lower vena cava

ABSTRACT

Surgical approach of treatment of embologenic venous thromboses in the inferior vena cava segment is presented. The most part of patients are operated in the first days of admittance. They were mainly in the subacute period of venous thrombosis that testifies to insufficiently effective work of primary surgical link and surgical departments. Operations were performed on iliac segment, inferior vena cava, including either thrombectomy from the suprarenal inferior vena cava or thrombectomy from the right heart or embolectomy from pulmonary arteries in temporary occlusion of vena cava, bandaging of the infrarenal vena cava segment, nephrectomy, alloprosthesis of the suprarenal vena cava segment. The active surgical approach of treating patients with floating thromboses of the inferior vena cava segment allows to save patients in 98% cases.

Keywords: venous thrombosis, venous thromboembolism, pulmonary thromboembolism (PTE).

The problem of venous thrombosis and pulmonary thromboembolism is an interdisciplinary problem, typical medical facility of any type. Frequency of venous thrombosis and thromboembolic complications is 100 - 160 cases per 100 000, with a frequency of fatal thromboembolism 60 cases per 100 000 population. Mortality from thromboembolic complications in the general population ranges from 2.1 to 6.2%. According to our information 5.4%, which is 0.8 per 1000 population per year [1, 2, 3, and 5]. According to the literature, 10% of patients develop massive pulmonary embolism caused by total occlusion of the pulmonary trunk, where the time factor does not allow saving the patient from death in our investigation 20% of patients died in the first day since the beginning of the disease [4]. Most of these fatal cases are diagnose only at autopsy [6, 7, and 8]. The timely prevention of migration floating thrombus can prevent sudden death from a massive pulmonary embolism.

The aim of the research: to reduce mortality from massive PE by developing scientific direction in the surgical treatment of thrombosis embologenic basin inferior vena cava.

MATERIALS AND METHODS

Based on innovations of Saharyuk A.P., Tarasyuk E.S., Verevetinova A.N. issued by the Medical University Amur GMA Russian Ministry of 08.06.2014 № 1878 "Organization of prevention and treatment of venous thromboembolic complications in the hospital"; №1881 "The

treatment of venous thrombosis embologenic"; № 1879 from 08.06.2014 "Initiate implementation of informed consent for the prevention of venous thromboembolic events (VTEC) in hospital"; № 1888 from 07.08.2014 "The role of thrombosis and pulmonary embolism sources in patients with venous thromboembolic complications"; № 1887 from 07.08.2014 "Curation of postoperative surgical patients"; № 1883 "Terms of mortality from venous thromboembolic complications in the hospital"; № 1890 from 07.08.2014 "The structure of mortality from venous thromboembolic complications in the hospital" we have investigated gender and age characteristics of patients, the timing of surgical treatment of venous thrombosis after hospitalization period, thrombus flotation level, the character of surgery, complications and outcomes.

RESULTS OF THE RESEARCH

Over 5 years - 2009-2013 at the Department of Vascular Surgery of the Amur Regional Clinical Hospital performed 4193 operations, while 147 (3.5%) patients were operate on for various localization of floating thrombosis. The number of patients by gender was the same: M - 72, W - 75, the average age was 52.4 years. 3/4 patients (75%) were operated in the first day of admittance: 60 (41%) to 6:00, 50 (34%) to 24 hours. 1/4 patients 37 (25%) were operated over a day or more after hospitalization. One-third - 42 (29%) were registered with the acute phase of venous thrombosis, two-thirds of 105 (71%), sub acute in 53 (35.8%) - more than a third of patients, floating thrombus was in the ilio-caval segment of basin inferior vena cava: inferior Vena cava - 9 (6.1%), common iliac Vena - 4 (2.7%), external iliac vena - 40 (27%) patients. IVC flotation level of suprarenal was present in 7 patients (4.7%), 2 patients (1.4%) on the renal level segment. Two-thirds of patients 93 (63.5%) flotation thrombus localized at the level of the femoropopliteal segment: common femoral Vena - 44 (30%), superficial femoral - 26 (18%), greater saphenous Vena - 12 (8.1%), popliteal Vena - 11 (7.4%). At one patient (0.7%) continued floating thrombosis reached the pulmonary heart.

Every third patient 51 (34.9%) had operation on the iliac segment, including ligation of the external iliac vein - 45 (31%), retrograde thrombectomy of iliac segment - 1 (0.6%), retrograde thrombectomy of iliac segment imposition of arteriovenous fistula at hip level - 1 (0.6%), isolated ligation of the common iliac vein - 4 (2.7%). Every fourth patient ligated superficial femoral Vein 38 (25.6%), including 3 (2%) in combination with crossectomy major saphenous vein, 1 (06%) crossectomy small saphenous vein opposite limb. As fourth patient 33 (22.8%) made thrombectomy common femoral vein, including 4 (2.7%) was isolated, 16 (10.8%) in



combination with ligation of the superficial femoral vein, 11 (8%) combined with crossectomy major saphenous vein and 2 (1.3%) in conjunction with ligation of the superficial femoral and major saphenous veins. Every fifth patient - 29 (20.3%) made crossectomy the major saphenous vein, including 13 (9%) in isolation. In 13 patients (9.3%) combined with a thrombectomy of the common femoral vein 11 (8%), and 2 patients (1.3%) and a superficial vein ligation. 3 (2%) patients only crossectomy combined with ligation of the superficial femoral vein.

Eleven operations (7.6%) were performed on the inferior vena cava. It includes 8 thrombectomy of the suprarenal region of the inferior vena cava, including in conjunction with: thrombectomy of the pulmonary heart - 1 (0.6%); embolectomy from the pulmonary artery in a temporary occlusion of the vena cava, ligation of the infrarenal region of inferior vena cava - 1 (0.6%); infrarenal ligation of the inferior vena cava - 1 (0.6%); nephrectomy - 4 (2.6%); alloprosthetics of suprarenal region of inferior vena cava - 1 (0.6%). Three patients (2%) were operate on again, on the retroperitoneal hematoma. 3 patients are die (2%) of re-thrombosis basin inferior vena cava and recurrent pulmonary embolism.

DISCUSSION

Experience of the Department of Vascular Surgery can recommend active treatment policy of floating venous thrombosis, which are the lot of young persons and working-age population in practical healthcare. Pathology is urgent, and 75% of patients operated at the first day of hospitalization, with this 71% of patients were in the sub acute stage of venous thrombosis, so we may talk about not effective work of the primary surgical care and surgical departments. 35.8% patients the level of the proximal thrombus flotation was at ileoCaval segment, 63.5% at the level of the femoropopliteal segment. One patient (0.7%) continued floating thrombosis reached the pulmonary heart. less than half of the operations 62 (42.5%) performed on ileokaval segment and 85 (57.5%) in the femoropopliteal. About embologenic complications of varicose veins performed on 29 (20.3%) operations. Eleven operations (7.6%) made on the inferior vena cava. This include 8 thrombectomy of the suprarenal of the inferior vena cava. Three patients (2%) were operate on again, on the retroperitoneal hematoma. 3 patients are dye (2%) of re-thrombosis basin inferior vena cava and recurrent pulmonary embolism.

CONCLUSIONS:



1. Embologenic venous thrombosis is the pathology of young, working-age people (average 52.4 years).
2. Three quarters of the patients, (75%) were operated during the first day of hospitalization, thus avoiding the massive, fatal pulmonary embolism in 98% of patients.
3. Not effective work of primary care confirmed that 71% of the patients were in the sub acute stage of thrombosis.
4. Interventions at ileoCaval segment of the inferior vena cava to 42.5% require high professionally of cardiovascular surgery and the development of targeted research direction in solving this problem.
5. Operations on the femoropopliteal segment were performed in 57.5%, they are positively predictable and can reliably prevent pulmonary catastrophe.

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