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# DIRECT RESULTS OF TREATMENT OF THROMBOSIS AND EMBOLISM OF THE MAGISTRAL ARTERIES OF THE LIMBS AND TOPS

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**Introduction.** Acute thrombosis and embolism of major arteries in the lower and upper limbs pose a significant threat to limb viability and overall patient health. These conditions can lead to severe ischemia, tissue necrosis, and, ultimately, limb loss if not treated promptly and effectively. Surgical and conservative management approaches aim to restore blood flow, prevent complications, and improve patient outcomes. This study investigates the immediate outcomes of different treatment strategies, providing valuable insights into their effectiveness and implications for clinical practice.

**Relevance of the Topic.** The management of arterial thrombosis and embolism remains a critical challenge in vascular surgery and emergency medicine. Early diagnosis and appropriate intervention are essential to prevent irreversible ischemic damage. Given the increasing prevalence of cardiovascular diseases and associated risk factors such as diabetes mellitus, hypertension, and cardiac arrhythmias, understanding optimal treatment approaches is crucial. This research contributes to the ongoing efforts to enhance treatment protocols, reduce morbidity and mortality, and improve quality of life for affected patients.

Objective: To investigate the immediate outcomes of treatment for thrombosis and embolism in the major arteries of the lower and upper limbs.

Materials and methods. The results of surgical and conservative treatment were analyzed in 96 patients aged 38 to 86 years with thrombosis and embolism of major arteries. 19 patients were under 50 years old, and 77 patients were over 51 years old. There were 62 men and 34 women. Thrombosis and embolism of major arteries in the upper extremities were diagnosed in 17 patients, while 79 patients had thrombosis and embolism in the aorto-iliac-femoral-popliteal-tibial segment. The cause of acute ischemia was thrombotic occlusion in 42 patients and embolic arterial blockage in 54 patients. To establish a diagnosis and assess the results of surgical and conservative treatment, a detailed medical history was collected, and clinical examination, duplex angioscanning with Doppler ultrasonography, multispiral echocardiography, and computed tomographic angiography were performed. Patients also underwent ECG and other examinations, and were consulted by an endocrinologist, nephrologist, and cardiologist. Concomitant diseases identified included diabetes mellitus, renal failure, arterial hypertension, post-infarction cardiosclerosis, and various types of heart rhythm disturbances

(extrasystoles, atrial fibrillation). Doppler ultrasonography, CT angiography, and intraoperative examination revealed varying degrees of atherostenotic changes in the arteries of the lower extremities. Parameters of hemostasis and hemorheology were studied.

Results: Based on clinical examination, ultrasound Doppler, and CT angiography, acute occlusion was diagnosed in the following segments: aorto-iliac in 4 patients, iliac in 6 patients, ilio-femoral in 21 patients, femoro-popliteal in 34 patients, popliteo-tibial in 14 patients, subclavian-axillary in 11 patients, and axillary-brachial in 6 patients. Acute limb ischemia was diagnosed as grade IIA-B in 52 patients, grade IIIA-B in 34 patients, and grade IV in 10 patients. After brief preparation and examination by an anesthesiologist, endocrinologist, nephrologist, and cardiologist, the following procedures were performed: thrombectomy or embolectomy in 45 patients, thrombectomy or embolectomy with fasciotomy in 10 patients, thrombectomy with limb amputation in 3 patients, and thrombectomy with autovenous bypass in 2 patients. Due to irreversible soft tissue changes, 12 patients underwent limb amputation at the mid-thigh level, and 4 patients at the proximal third of the lower leg. One patient underwent angioplasty. Thromboembolectomy and thromboembolectomy with fasciotomy were performed under local anesthesia, while limb amputation and autovenous bypass were done under spinal or epidural anesthesia. Four patients refused the proposed limb amputation surgery and conservative treatment. One 78-year-old patient died immediately after admission to the intensive care unit from acute coronary insufficiency. Following 146 operations (thrombectomy, amputation), 4 patients died, and 1 patient died during conservative treatment. The cause of death was acute coronary insufficiency. Fifteen patients received conservative treatment (anticoagulants, antiplatelet agents, metabolism correction in the ischemic limb, epidural blockade, ozone therapy, vasoprostane, etc.). In these patients, the cause of acute ischemia was thrombosis of the popliteo-tibial segment against a background of chronic limb ischemia.

Discussion. During the perioperative period and conservative treatment, special attention was paid to correcting blood sugar levels, hemostasis and hemorheology indicators, and heart rhythm disturbances. Adequate management of these parameters contributed to a smooth postoperative course - no rethrombosis or recurrent thromboembolism was observed. We focused particularly on the prevention and treatment of reperfusion syndrome (pharmacological therapy, extracorporeal detoxification, laser therapy, ozone therapy). Intraoperative assessment of antegrade and retrograde blood flow plays a crucial role in preventing arterial reocclusions. Accurate determination of the degree of limb ischemia allows for the selection of an appropriate type of intervention - revascularization, primary limb

amputation, or conservative treatment. Underestimation of these factors leads to reocclusion in the early or late periods and recurrence of acute limb ischemia.

Conclusions. Restoration of blood flow in the ischemic limb in cases of arterial thrombosis and embolism is the optimal method for limb preservation and maintaining an active lifestyle for patients. Timely referral of patients to specialized clinics, adequate correction of homeostasis parameters and functions of other organs during the perioperative period, and proper assessment of antegrade and retrograde blood flow are key factors in ensuring optimal outcomes.

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