

ENDOVASCULAR TREATMENT FOR CRITICAL LOWER LIMB ISCHEMIA IN PATIENTS WITH DIABETIC FOOT SYNDROME

Safoev Bakhodir Barnoevich
MD, Professor of the Department of General
Surgery of the Bukhara State Medical Institute

Jamshid Radjabboevich Nazarov
An Independent Researcher of the Department of General
Surgery of the Bukhara State Medical Institute, Republic of Uzbekistan

INTRODUCTION

According to the calculated data of our researchers, from 3 to 10% of the population suffers from occlusive diseases of the arteries of the lower extremities, increasing to 15-20% among patients older than 70 years [1,3]. A third of patients with critical lower limb ischemia develop critical ischemia 6-8 years after the appearance of the first signs of the disease. According to some epidemiological studies, the incidence of peripheral artery diseases in patients with diabetes ranges from 10 to 40%, and in the presence of ulcerative foot defects reaches 50% [4,5]. In Uzbekistan, chronic ischemia of the lower extremities has been diagnosed in more than one hundred thousand people. Vascular atherosclerosis is the cause of chronic lower limb ischemia in 80-90% of cases. This pathology is especially often observed in people over 60 years of age[2].

The aim of this study is to improve the results of treatment of patients with critical lower limb ischemia with diabetic foot syndrome through a differential treatment approach taking into account endovascular interventions.

MATERIAL AND METHODS OF RESEARCH

The work is based on the data of examination and treatment of 47 patients with critical lower limb ischemia with diabetic foot syndrome who received inpatient treatment at the clinical base of the Bukhara State Medical Institute of the Bukhara Multidisciplinary Regional Medical Center for the period 2019 to 2022. The patients underwent surgical treatment: taking into account angiographic examination using endovascular. The surgical tactics of the patients were determined taking into account the results of the angiographic studies. Based on the results of the X-ray contrast angiographic examination, as well as the depth of the lesion of the purulent-necrotic process, the methods of minimally invasive endovascular interventions of each individual patient were determined. Based on the clinical examination, further treatment tactics were determined, depending on vascularization.

RESULTS AND THEIR DISCUSSIONS

When determining the tactics of surgical treatment of patients, endovascular X-ray contrast diagnostics of the vessels of the lower leg and foot was performed. Taking into account the results of angiographic diagnostics, the method of choosing an endovascular minimally invasive surgical intervention to eliminate the blood flow of the affected vessel was determined. To differentiate the approach of endovascular surgical interventions, taking into account the size of the vessels, we divided the foot vessels into three levels.

Level I is the upper level of the foot. Up to the level of the medial ankle. The lumen of the vessels is up to 2.5 mm. (Distal part of the peroneal and posterior tibial arteries).

Level II – the average level of the foot. The lumen of the vessels is up to 2.0 mm. (The posterior, medial subclavian artery of the foot).

Level III is the distal level of the foot. The lumen of the vessels is up to 1.5 mm. (Arched, dorsal, metacarpal arteries).

The main diagnostic method for assessing the condition of blood vessels was X-ray contrast angiographic studies. Angiographic studies were performed after appropriate preparation under local anesthesia in an angiographic office. The complex of conservative measures included, in the same way as in the control group, the treatment of concomitant diseases and the correction of violations of the rheological properties of blood. The study of the blood sugar level showed that by the time of admission to the clinic, on average, it was 12.7 ± 2.1 mmol/l. Against the background of complex conservative and surgical treatment, the elimination of a purulent-necrotic focus, carried out in the postoperative period, contributed to a decrease in the blood sugar level of patients to the upper limit of the norm by 6-7 days of treatment.

X-ray contrast angiographic examination revealed lesions of the vessels under the knee artery and the I level of the vessels of the foot in 55.3% of patients (Distal part of the peroneal and posterior tibial arteries). 11 (23.4%) patients had stenosis and occlusion at the II level of the vessels of the foot (Dorsal, medial subclavian artery of the foot). Vascular lesions in the form of stenosis and occlusion up to the III level of the foot vessels were noted in 10 (21.2%) patients. Of 26 patients with foot level I lesion, 12 (46.1%) underwent vascular stenting of the distal part of the fibular and posterior tibial arteries. The indication of stenting of these vessels was: the occurrence of residual vascular stenosis up to 45-50% and the ineffectiveness of transluminal balloon angioplasty.

Of 26 patients with level I vascular lesions of the foot, 14 (53.9%) patients due to chronic lower limb ischemia caused by occlusive-stenotic lesions of the arteries of the vessels of the foot underwent balloon angioplasty followed by reversal of the affected vessels. Balloon angioplasty was performed to perform manipulation. Subsequently, stenting of the affected areas was carried out according to the above-mentioned method. As noted above, out of 47 patients, 11 (23.4%) patients had stenosis or occlusion of the II level of the vessels of the foot (dorsal, medial subclavian artery of the foot). Of these, 4 (36.3%) underwent stenting of the affected vessels. In 7 (63.7%) patients, vascular recanalization with balloon angioplasty was performed as indicated. To do this, after establishing the level and degree of vascular damage, vascular recanalization was performed.

In 10 patients with vascular lesions of the foot and level III (arched, dorsal, metacarpal arteries). In 4 (40%) patients, recanalization surgery with balloon angioplasty was performed. In 6 (60%) patients, due to a severe form of chronic ischemia of the lower extremities caused by occlusive-stenotic lesions of the arteries of the 3rd level of vessels, they were limited to performing recanalization of the affected vessels.

The use of angioendovascular diagnostics and the differential approach of endovascular surgery with the separation depending on the size of the vessels of the foot on 3 levels has changed the indicators for the better after surgical complications and research results.

CONCLUSION

All of the above allows us to recommend a method of surgical treatment with the use of angiographic examination taking into account the 3rd level of the size of the vessels of the foot, to conduct

endovascular intervention using minimally invasive methods of recanalization, balloon angioplasty and stenting of distal vessels. At the same time, stenting and balloon angioplasty should be used for lesions of the I-th level of the vessels of the foot up to 2.5 mm in size, which often coincides in the projection of the distal part of the fibular and posterior tibial arteries. In case of damage to the second level of the vessels of the foot with dimensions up to 2.0 mm (the posterior, subclavian medial artery of the foot), the use of stenting with angioplasty with reconalization is more effective. With occlusion and level III vessels of the foot with dimensions up to 1.5 mm (arched, dorsal, metacarpal arteries), the use of reconalization and balloon angioplasty is more optimal.

LIST OF LITERATURE

1. Savelyev V. S., Koshkin V.M., B. A. Karalkin, Tarkovsky A. A. Critical ischemia of the lower extremities: definitions of the concept and hemodynamic characteristics //Agiol. and the vessel, surgery. 1996. No. 3. pp. 84-90.
2. Safoev B.B., Nazarov J.R., Boltaev T.Sh., Khamroev Sh.M. The result of traditional treatment of diabetic foot syndrome in patients with critical lower limb ischemia// New day in medicine. Bukhara. – 2022, - №6(44). – P. 167-173koshkin
3. Adam, D.J. Bypass surgery in comparison with angioplasty in severe lower leg ischemia (BASIL): a multicenter randomized controlled trial [Text] / D.J. Adam, J.D. Beard, T. Cleveland [et al.] // Lancet. - 2005. - No. 366. - pp. 1925-1934.
4. Lipsky, B.A. Guidelines for clinical practice of the American Society of Infectious Diseases for the diagnosis and treatment of diabetic foot infections [Text] / B.A. Lipsky, A.R. Berendt, P.B. Kornia [et al.] // Clinical infection. – 2012. – 54. – pp. 132-173.
5. Pham H., Armstrong D.G., Harvey K., Harkless L.B., Jurini J.M., Veves A. Screening methods for identifying people at high risk of developing diabetic foot ulcers: a prospective multicenter study // Treatment of diabetes. -2000. -Vol.23. -pp. 606-611.