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TEN-YEAR RESULTS OF VARICOSE VEINS TREATMENT

Abstract

The objective: To study the quality of life of patients with varicose veins of the lower extremities treated between 2007 and 2016 by surgical methods, including the RFO method.

Materials and methods. Our study is based on the medical records of the patients of the surgical department, summary data from the department of statistics at the NGHCI branch hospital, Tyumen Station, OAO Russian Railways, and data on the venous duplex ultrasound of lower extremities. We used the following research methods: statistical methods, expert clinical analysis, and the systematic approach. The degree of chronic venous insufficiency of lower extremities was determined using the clinical section of the international classification of CEAP (1995).

Results and discussion. We analyzed the quality of life of patients with varicose veins who underwent surgical treatment between 2007 and 2016. It was found that the overwhelming majority of patients (83%) had a hereditary factor from the etiologic factors of the disease. Obesity was reported in 57% of cases, and patients reported long-term static loads in 44% and use of hormonal contraceptives in 5% of cases. We gave a subjective evaluation of the results of surgical treatment using the classical method (phlebectomy) and the method of radiofrequency obliteration of veins. The mean duration of temporary disability of railway workers after crossectomy and phlebectomy was (18 ± 2.5) days, while after the RFO the majority of patients (70.5%) returned to normal life on the day of surgery, 23.5% — 2 days after surgery, and 8.8% — 3 days after surgery. It is shown that when planned operations are conducted promptly before complications of varicose veins can develop certain aspects of the patient's quality of life significantly improve.

Conclusion: The process of rehabilitation of patients is reduced 3 times if surgical treatment is performed by the method of endovenous segmental radiofrequency obliteration of veins.

Keywords: *varicose veins, quality of life, radiofrequency obliteration of veins*

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GSV — the great saphenous vein, RFO — radiofrequency obliteration, TD — trophic disorders, VU — venous ulcer, CVI — chronic venous insufficiency.

Relevance

More than 20% of the world's population suffers from chronic lower extremity venous disease. According to Hanevich M. D., 2003, in Russia there are more than 35 million of such patients,

and up to 35% of them are members of the working-age population. More than 50% are elderly senior citizens. The prevalence of trophic disorders (TD) and venous ulcers (VU) in chronic venous insufficiency (CVI) is 5–8%, while the rate of venous trophic ulcers incidence increases

with age and reaches its maximum after 60 years (Kirienko A. I., 2007). Surgery is considered to be curative and the most effective method of treatment of varicose veins (Losev R. Z., 2005). Today, a variety of surgical methods of treatment remain one of the most effective tools for combating varicose veins. Timely surgery is able not only to eliminate all of the manifestations of varicose veins, but also to prevent the development of dangerous complications of the disease. The surgical methods for treating varicose veins, which are used at the NGHCI branch hospital, Tyumen Station, OAO Russian Railways, are: combined phlebectomy, invaginated phlebectomy, ultrasound-guided sclerotherapy of great saphenous vein, and endovenous radiofrequency segmental obliteration (RFO). The latter method has been most actively used since 2016, and it has already established itself as an alternative to crossectomy and stripping. Radiofrequency vein obliteration is ultrasound-guided from the moment of vein puncture to the completion of the procedure. Since the varicose vein is affected by radio waves, it is heated; it collapses and is subsequently replaced by connective tissue. This procedure has many advantages: it is carried out under local anesthesia, it does not require a long stay in the hospital, it is not traumatic, and it has a good cosmetic outcome.

The objective of the study was to explore the life quality of patients with varicose veins, which was surgically treated between 2007 and 2016, including the RFO method of treatment.

Materials and Methods

The following research methods were used: statistical method, clinical and expert analysis, and systematic approach. The degree of chronic venous insufficiency of the lower extremities was determined using the clinical section of the international classification CEAP (1995). It should be noted that the vast majority (77.8%) of patients had II degree CVI (CEAP: C3, Ep, As, p, Pr, 2,18, LII); and 20% of patients had III degree CVI.

Results and Discussion

We conducted a retrospective analysis of the medical records of 861 patients (378 of them were railway workers and 483 were not). Railway employees accounted for 44.7% of all patients treated, and the vast majority of them were women (206 — 52.7%); the percentage of men was 47.3%. According to the professional status, the distribution of varicosis among male railway workers was as follows: in 20% of cases they were handymen, and 13% (51 people) were rolling stock repairman. The group of train drivers and their assistants accounted for 14.3% of all patients. Among female railway workers, the distribution based on socioprofessional status was as follows: 20% were train dispatchers and operators, 18% were service personnel on the trains (conductors of passenger trains, conductors of cargo escort and special cars, etc.), and the rest worked in the maintenance officer group.

The mean age of patients who underwent operations was 51.1 years old, where the youngest age was 22 and the oldest was 83. There were 605 operations on one lower extremity (70.3%) and 256 operations on both lower extremities (29.7%). Among the etiological factors, a hereditary factor was discovered in the vast majority of patients (83%). The remaining in frequency of occurrence were: obesity (57%), long-term static load (44%), and use of hormonal contraceptives (5%). The average duration of the disease was 11.8 years. According to vascular ultrasound imaging, the maximum diameter of the great saphenous vein (GSV) was 27 mm, and the minimum diameter of GSV was 12 mm.

The venous duplex ultrasound of lower extremities was the main instrumental diagnostic method, and it was performed in all cases to clarify the localization, nature and extent of the venous pathology. The number of concomitant diseases as well as their severity determined the patient's condition. Surgery and anesthesia risk was assessed according to the American Society of Anesthesiologists (ASA) physical status

classification system. Surgical treatment in 2/3 of patients was carried out under spinal anesthesia and under intravenous anesthesia. Endovenous segmental radiofrequency obliteration (ESRFO) of varicose veins of the lower extremities was performed in 68 patients mainly under local anesthesia (a “paravasal tumescent pillow” was created using special VNUS introducers and ultrasound guidance). Vein coagulation was carried out using a radiofrequency catheter, with a margin of 2 cm from the saphenofemoral and/or saphenopopliteal junction anastomosis. In 36% of cases RFO was supplemented using dissection of insolvent perforator veins from a short-scar incision. The extent of intervention was determined while taking into account the degree of chronic venous insufficiency of the affected lower extremity and the severity of patient’s condition, as well as the severity of inflammatory infiltration in the area of thrombotic varicose veins. Surgery contraindication was extremely high surgery and anesthesia risk due to decompensated diabetes mellitus revealed in two elderly patients.

We would like to point out that crossectomy, invagination phlebectomy of the great saphenous vein on the hip with subsequent occlusion of the great saphenous vein on the lower leg; ligation of perforating veins from a short-scar incision according to Mueller, the ligature dissection of the saphenous and perforating lower extremity veins were prevailing surgical methods prior to the introduction of the ESRFO method into clinical practice. Since 2016 ESRFO combined with miniphlebectomy and sclerotherapy has been the most popular surgical procedure.

29 patients out of all those who underwent surgery in the near postoperative period from the intervention had postoperative inguinal hematoma. Longer after the operation 11% of patients noted tactile sensitivity disorder. The average duration of temporary disability of railway workers after surgical treatment of varicose veins was (18 ± 2.5) days, while after RFO the majority of patients (70.5%) returned to normal life on the

day of surgery, 23.5% — 2 days after surgery, 8.8% — 3 days after surgery.

In order to assess the quality of life of patients after vein surgery was carried out, we used the CIVIQ questionnaire, which includes such criteria as the severity of pain, compromises to work or everyday life, sleep disorders, and impairment to physical and social functioning. It turned out that 17% of patients after classical phlebectomy experienced restrictions in their physical and social functioning, and 12% noted psycho-emotional distress. On the other hand, after RFO 53% of patients did not experience any restrictions in their physical and social functioning, and 73% claimed that “they did not even feel like they had underwent surgery”, and there was absolutely no deterioration in the psycho-emotional background.

At the same time, all patients were asked to give their own assessment of the surgical treatment results, focusing on the success of the elimination of varicose and edematic syndromes, as well as such CVI symptoms as pain, heaviness, and fatigue in the legs, and night cramps. The vast majority of patients after ESRFO (65.0%) evaluated the effect of the operation as “excellent”, noting the elimination of varicose syndrome, reduced swelling, night cramps, pain, and the disappearance (or reduction) of trophic disorders on lower leg. No patient assessed the results of repeated surgical treatment as unsatisfactory.

Conclusion

Lower extremity endovenous segmental radiofrequency obliteration (ESRFO) is thus the most advanced and minimally invasive method that significantly reduces perioperative stress during preoperative period and improves the life quality of the vast number of patients.

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