

MODERN METHODS OF TREATMENT OF VARICOSE VEINS OF THE LOWER
EXTREMITIES (Literature review)

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Varicose veins of the lower extremities (LVLD) is the most common pathology of peripheral vessels [1, 5, 17].

Modern data indicate that the detection rate of chronic venous diseases (CVD) among the adult population is at least 25% [4, 15, 18]. A number of studies also present higher figures, indicating the prevalence of the disease with a frequency of up to 50% or more [2, 9].

Many studies have been devoted to the study of the pathogenesis of varicose veins, and to date, an impressive amount of knowledge has been accumulated about the events accompanying varicose vein transformation at different levels, including genetic and molecular changes [8, 10]. Factors influencing this process include changes in hemodynamics - a decrease in laminar blood flow velocity and the appearance of turbulent blood flow, an increase in venous pressure and associated stretching of the vein walls, hypoxia, oxidative stress, endothelial activation and inflammation [6, 7, 8, eleven].

Clinicians attach leading importance in the pathogenesis of VVVB to trunk and perforant venous reflux [14, 15]. It should be noted that a number of authors consider the insufficiency of perforating veins in VVBI as a consequence, and not the cause of the disease [16].

This point of view is supported by several facts. First, there is no evidence that PV ligation improves surgical outcomes [12, 14]. Secondly, it has been established that isolated intervention on perforating veins does not improve the hemodynamic characteristics of venous blood flow [3]. Thirdly, data from some studies demonstrate an increase in the frequency of detection of failed PVs with increasing severity of the disease [13].

Currently time in surgery practice wide implemented minimally invasive thermal methods treatment : endovasal laser obliteration (EVLO) and radiofrequency obliteration (RFO). These methods are recognized as the gold standard in eliminating pathological reflux in VBNK and are recommended as preferable to open surgical treatment and scleroobliteration [15, 18]. In Russian-language literature various terms are used , recognized synonyms : “coagulation”, “obliteration” and “ablation”.

When choosing between EVLO and RF, none of these methods is recommended as preferable, since no significant differences have been obtained between these two methods in terms of effectiveness and long-term results [4, 6, 9]. The results of five-year observations demonstrated the frequency of GSV obliteration of 92.2% for EVLO and 91.9% for RFO [6, 7, 15].

Natural becomes question about risk venous thromboembolic complications (VTEC). Thus, a systematic review of publications on thermoobliteration of veins indicated the absence of reports of fatal complications, and the incidence of severe VTEC did not exceed 1% [6, 7, 18]. At that same time frequency of VTEC after combined phlebectomy reaches 5.3% [42]. By data *Barker et al* . frequency of VTEC after combined phlebectomy and endovenous methods amounted to 0.15–0.35% in the first 30 days , 0.26–0.50% within 90 days and 0.46–0.58% within 1 year []. In 2005 *P. pittaluga et al* . reported high efficiency vein-preserving surgery [63]. Authors named method removal varicose veins subcutaneous veins with leaving insolvent BPV *ASVAL* barrel (*Ablation Selective des Varices sous Anesthesia Locale*). The term firmly entrenched in phlebological circles

The technique was first proposed by P. Pittaluga et al . in 2008. After removing only the tributaries of the incompetent GSV, it was noted that, according to the USAS, pathological

reflux disappears in most cases [11, 12, 15]. In their work, the authors studied the results of isolated removal of varicose veins in 195 lower extremities in 151 patients (128 women and 25 men). The age of the patients ranged from 22 to 88 years (average – 56.8). In 82.1% of cases, class C2 was recorded. The average follow-up period in the postoperative period was 24.4 months. (median 27.3 months, range 8 to 34.8). The evaluation criteria were the frequency of persistence of pathological reflux and the frequency of recurrence of VLNK. Pathological reflux through the SPS persisted in two cases (1.8%), its disappearance was recorded in the GSV in 69.6% of cases after isolated miniphlebectomy . Relapse of VBNK developed in 7 cases (6.3%). Researchers observed the disappearance of reflux in the GSV in 69.6% of cases after isolated miniphlebectomy [16, 18]. In 2017, Tsukanov Yu.T. presented the results of treatment of 65 patients with VLNK. All patients underwent miniphlebectomy as surgical treatment . After a month, pathological reflux disappeared in 79.3%, and after 12 months it was absent in 77.0% of patients [14, 18]. The virtual complete absence of data on the frequency of relapse in the medium term and in the long term after isolated removal of varicose veins is one of the unresolved issues regarding the possibilities of vein-preserving surgery. Thus, the ASVAL technique today, being the least traumatic and the safest of all the proposed surgical options, unfortunately, has the least evidence base. Proponents of this vein-preserving approach rely on data from single non-comparative studies. The optimal indications for using the method need to be clarified, just as the long-term results of interventions should be studied. First of all, it is necessary to study the frequency of recurrence of VLNK, as the most reasonable evaluation criterion.

Currently, *ASVAL* is noted in clinical recommendations for the treatment of patients with varicose veins dilatation of veins and can be considered both as an independent method and as part of a set of measures in the treatment of varicose veins [5]. Modern advances in the study of issues pathogenesis of varicose veins of the lower extremities, increasing the competence of surgical specialists in methods of diagnosing and identifying the causative factors of lower varicose veins limbs makes it possible to provide surgical care to patients at any stage of the disease: from the appearance of subcutaneous varicose nodes before the formation of vertical or horizontal reflux. Modern methods of surgical treatment varicose veins of the lower extremities are directed not only to accurately eliminate the symptoms of the disease and prevent their causes , but also to minimize surgical invasiveness , reduce the likelihood of relapses and reduce rehabilitation time period.

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