

Evaluation of Clinical Results after Surgical Treatment of The Varicose veins of Lower Limbs

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ABSTRACT

Stripping is the standard surgical treatment method in case of lower limb varicose veins however, universal transplant material for arterial reconstructions, as *v. saphena magna*, loses. In this study various organ-sparing methods of surgical treatment are suggested, however their efficiency is not completely detected yet. The present work was aimed to compare the clinical results of stripping and CHIVA-surgery. A total of 178 operated limbs (stripping - 62 and CHIVA-surgery - 116) have been investigated. Preoperative diagnostics was achieved with the use of color duplexsonographical cartography. Post-operative study of clinical results was evaluated by means of CEAP scoring scale. According to the results of carried out investigation no significant difference in clinical results was detected using the traditional surgical treatment method (stripping) and organ-sparing (CHIVA-surgery) method. CHIVA-strategy provides limitation of postoperative complications (cosmetic problems) and period of disability. The negative side effect of the method is that it requires multifold duplexsonographical examination for timely detection of reflux progression through the core of *v. saphena magna*.

KEYWORDS: *varicose veins, stripping, CHIVA-surgery*

The lower limb varicose veins is one of the widespread diseases, which is expressed in 10% to 22% of adult population. Moreover, the results of the latest years epidemiological investigations indicate rejuvenescence of the disease and sharp increase of clinical manifestations in school children population. The radical treatment method of varicose veins is surgical. Although, the ligation of veins has a long-term history, the stripping still remains as a matter of dispute, because it is accompanied by various complications.

In case of stripping the neuropathy due to disorder of *n. saphena* is quite frequent manifestation. During the crural segment stripping the medial lymph collector is affected that may result in prolonged edema formation. Along with that loses the universal transplant material for arterial reconstructions, which is very important and valuable in case of coronary surgery. The major problem in stripping is prevention of cosmetic defects, which promoted necessity for elaboration of less-invasive and less-traumatic surgical methods.

In 1988 Franschesci suggested the new method - CHIVA-surgery for varicose veins treatment. The essence of the method is detection of veno-venous shunts via the color duplexsonographical cartography, simultaneously the goal-directed surgical intervention provides shunt liquidation and fragmentation of orthostatic venous column.

The work was aimed to evaluate the clinical efficiency of surgical treatment methods in case of varicose veins - stripping and CHIVA-surgery.

MATERIAL AND METHODS

A total of 178 limbs of 146 patients were analyzed, because each limb is independent hemodynamic unit.

102 patients were women, and 44 - men with a mean age of 41 years (range 19 to 63 years). In all cases the prime varicose veins was diagnosed. All patients suffered with saphena-femoral insufficiency and reflux in vena saphena.

The patients were subdivided into two major groups: the group I involved 62 limbs with traditional operation - stripping, and the group II involved 116 limbs with phlebectomy (the method CHIVA)

The duplexsonographical examinations (ACUSON-128XP-10 transducer 7,5 mHz) were performed in upright position of patients. The saphena-femoral reflux was assessed by Valsalva, and the state of superficial and deep veins systems - by Parana's manoeuvre. The latter has several advantages compared to compressive test: it is easy to perform, effective, has the hemodynamic resemblance to real situation, so reflects such changes of blood flow in deep veins which is detected during walk.

Duplex-sonography provides information about superficial and deep veins' preoperative anatomic-functional picture. On the basis of these findings, the operational tactics by the method CHIVA principles is defined.

Stripping has been performed when varicose veins process spreads through the core of the vena saphena till femoral middle 1/3 level or when its diameter exceeds 9,5 mm. In other cases the reflux was removed at the point of its origin using the ligation and section in vena saphena and collaterals.

In case of stripping the general or peridural anesthesia was used and in case of CHIVA - only local anesthesia. In postoperative period patients are allowed to walk actively.

		STRIPPING N=62				CHIVA1 N=49				CHIVA2 N=67			
		Pre	4w	12w	24w	Pre	4w	12w	24w	Pre	4w	12w	24w
Pain	0	6	18	49	57	4	34	38	42	8	32	27	46
	1	22	35	11	4	24	12	10	6	21	17	19	15
	2	34	9	2	1	21	3	1	1	31	18	21	6
Edema	0	14	19	20	28	12	14	14	26	5	19	11	28
	1	19	21	25	23	16	17	20	15	41	29	38	27
	2	31	22	17	11	21	18	15	8	21	19	20	12
LDS*	0	35	37	40	41	40	41	42	42	56	56	58	59
	1	15	16	14	15	1	0	1	2	3	4	3	3
	2	12	9	8	6	8	8	6	5	8	7	6	5
Venous claudication	0	55	57	58	60	43	46	47	47	57	63	59	65
	1	4	4	3	2	3	2	1	1	6	2	5	1
	2	3	1	1	0	3	1	1	1	4	2	3	1
Pigmentation	0	18	21	21	25	13	15	16	18	21	22	17	24
	1	15	13	15	14	17	15	16	17	19	20	24	22
	2	29	28	26	23	19	19	17	14	27	25	26	21

*LDS - Lipodermatosclerosis

Tab.1 Distribution of absolute indices of clinical symptoms.

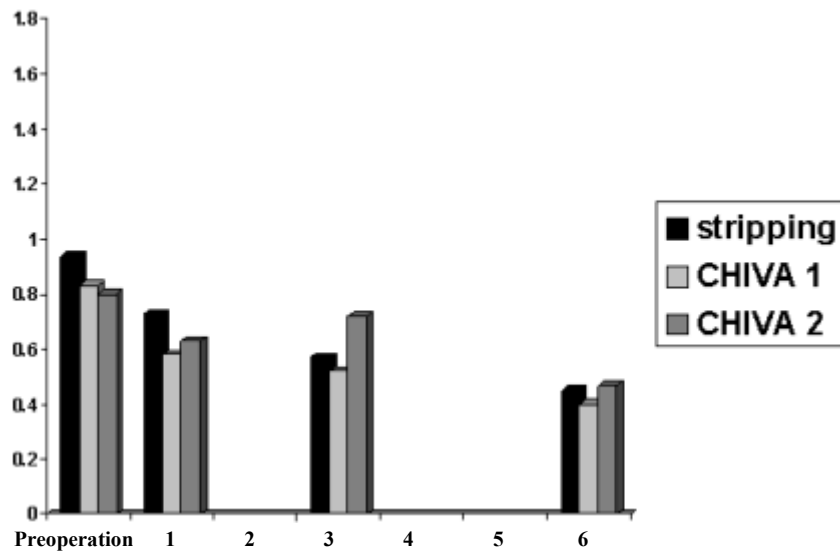


Fig.1 The results of clinical changes by CEAP clinical scoring scale

In postoperative period the patients were examined after 4,12 and 24 weeks. The clinical results were evaluated with the use of CEAP scoring scale.

The difference between the groups according to parameters was analyzed statistically with the use of Student's t-test.

RESULTS AND DISCUSSION

Investigation involved such 178 cases that were under observation during the period of 24 weeks. According to the CEAP classification the patients distribution in

stripping and CHIVA-surgery groups is presented in *Tab.1*.

116 limbs underwent insufficient collaterals disconnection (the first stage), in 67 cases (second stage) crosssection was necessary, since duplex-sonographical examination in postoperative period showed increase in dynamics of vena saphena diameter (CHIVA-2). In 49 cases operation included only liquidation of pathological shunts at the point of reflux origin with the use of ligation (CHIVA-1).

According to the CEAP classification, the diagnosis was formed as follows: C2-4EpAsPr

As far as the patients with trophic disorders were not involved in study population (C5-C6), clinical assessment was achieved by 5 parameters: pain, edema, lipodermatosclerosis, venous claudication, and hyperpigmentation. Graphical expression of clinical symptoms reduction according to groups have shown in Fig.1.

In 5 cases from the stripping group (8%) neuropathy due to disorder of n. saphena was detected. In 8 cases (13%) lymphatic edema on the cruris that underwent regression within several months, was manifested as well. 17 patients (27%) revealed subcutaneous firm region on the femur through the canal of vena saphena (hematoma) that resolved within 2 to 5 weeks.

3 patients from the group CHIVA (2,5%) was with lymphatic edema at the crural level.

CONCLUSION

According to the results of our investigation no significant difference in clinical results was detected using the traditional surgical treatment method (stripping) and organ-sparing (CHIVA-surgery) method. CHIVA-strategy provides limitation of postoperative complications and period of disability. The negative side effect of the method is that it requires multifold duplexsonographical examination for timely detection of reflux progression through the core of *v. saphena magna*.

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Клинические результаты после хирургического лечения варикозной болезни вен нижних конечностей

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РЕЗЮМЕ

Стриппинг является стандартным методом хирургического лечения варикозного заболевания вен нижних конечностей. Однако при этом теряется такой универсальный трансплантат для реконструктивной хирургии, как *v. saphena magna*. Предложены разные органосохраняющие методы хирургического лечения, но их эффективность доказана еще не полностью. Целью работы являлось сопоставление клинических результатов стриппинга и CHIVA-хирургии. Обследовано 178 оперированных конечностей (стриппинг-62, CHIVA-хирургия-116). Предоперационная диагностика осуществлялась цветным ультразвукографическим картированием. Постоперационное изучение клинических результатов производилась с помощью клинической оценочной шкалы по CEAP. Анализ полученных данных показал, что нет статистически достоверного различия в ближайших клинических результатах стриппинга и CHIVA-хирургии при хирургическом лечении варикозного заболевания вен нижних конечностей. Вместе с тем, при осуществлении CHIVA-хирургии до минимума доведены период нетрудоспособности и косметические проблемы. Отрицательной стороной CHIVA-хирургии является обязательный ультразвукографический скрининг для своевременного выявления прогрессирования рефлюкса по стволу *v. saphena magna*.

КЛЮЧЕВЫЕ СЛОВА: *варикозная болезнь, стриппинг, органосохраняющие методы*