

CONVENTIONAL *VERSUS* ENDOVENOUS TREATMENT IN CHRONIC VENOUS DISEASE - A COMPARATIVE STUDY BASED ON QUALITY OF LIFE

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CONVENTIONAL *VERSUS* ENDOVENOUS TREATMENT IN CHRONIC VENOUS DISEASE - A COMPARATIVE STUDY BASED ON QUALITY OF LIFE (Abstract): Chronic venous disease (CVD) modern treatment has to meet efficiency criteria, minimal invasiveness, aesthetical criteria, has to be used in both primary and recurrent treatment and allows the patient to resume normal activities as soon as possible. Alongside the proven effectiveness of the endovascular technique using LASER thermal ablation, a constant concern remains the benefit of improving the patient's quality of life. The patient perceives the aggressiveness of the procedure and the post-procedural recovery differently when treated through conventional method than through endovenous procedures. **Material and methods:** In the present paper we resume a comparison between the surgical treatments of chronic venous disease, conventional versus endovenous LASER thermal ablation. A prospective study was performed on two groups with equal number of patients and similar clinical staging. VEINES and CIVIQ-20 questionnaires were applied pre- and postoperatively (10 days, one month and two months intervals). **Results:** The Global Score Index calculated for all patients preoperatively and postoperatively showed increases in each of the 3 postoperative assessments, proving the therapeutic indication and efficacy of both surgical procedures. **Conclusions:** The recording of higher values for patients treated with endovenous procedure compared to patients treated with the traditional procedure support the hypothesis of this study that quality of life is higher in the group treated with endovenous LASER therapy. **Keywords:** QUESTIONNAIRES, VENOUS DISEASE, CONVENTIONAL *VERSUS* ENDOVENOUS.

Chronic venous disease (CVD) is a common clinical problem which has a significant impact on patient quality of life

(Qol) (1). Reflux in the great saphenous vein (GSV) is the most frequent causes of primary CVD. Saphenofemoral ligation and

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stripping of the GSV is considered to be the standard procedure for GSV incompetence with high rate of success and the low rate of recurrence. Although efficient, the conventional procedure is associated with considerable morbidity (2). Among common complications relevant for the impact on the QoL are postoperative pain, paresthesia due to saphenous nerve injury, hematoma and bruising.

Modern CVD treatment must meet several criteria: to be minimally invasive, to be aesthetic, to be effective in the treating the reflux and its consequences, to be effective in recurrences treatment, to allow the resumption of the patient's usual activities in the shortest possible time.

New endovenous procedures have proved their efficacy. Among these procedures endovenous thermal ablation has comparable efficiency with conventional treatment (3, 4, 5).

MATERIAL AND METHODS

The aim of this prospective study was to compare the improvement in QoL in patients undergoing great saphenous vein (GSV) ligation and stripping versus endovenous LASER thermal ablation. Included in this study were 60 patients, divided into 2 equal groups. The patients, with primary varicose veins and GSV incompetence, coming from 2 different vascular surgery units (Department of Vascular Surgery of the Iasi "Sf. Spiridon" County Clinical Emergency Hospital and Epimedica Clinic) were enrolled after informed consent. They already had surgical treatment indication and previously established type of procedure, either endovenous or conventional. Patients underwent Duplex evaluation. Patients with a tortuous GSV or GSV diameter exceeding 10 mm were not includ-

ed. Each enrolled patient would have been suitable for both procedures and the choice between them belonged to the patient.

The groups included patients with similar demographic (sex distribution, age median, provenience) and medical characteristics (associated pathologies, clinical stages of CVD). All the patients had the same pre- and postoperative recommendations (medication and compressive stockings).

QoL was assessed prior to surgery and for several different intervals over 2 months postoperatively using 2 questionnaires, CIVIQ-20 and VEINES QoL/Sym (6, 7).

CIVIQ-20 questionnaire included 20 questions covering the patient evaluation on 4 aspects: pain characteristics, physical assessment, psychological assessment, social implications. Every item had 5 answer options resulting in 20 items. The final score ranges from 20 to 100 and it is used to calculate an index (GIS index) quantifying the QoL. GIS index stands for: the difference between the final score obtained and the minimum possible score divided by the difference between the maximum possible score and the minimum possible score, all multiplied by 100.

$$GIS = 100 - [(final\ score - 20)/80] * 100$$

The other used questionnaire was VEINES QoL/Sym, a specific questionnaire adapted to CVD. This included 26 items regarding CVD symptoms (10 items), CVD related limitations in daily activities (9 items), psychological impact (5 items), assessment of the CVD progression in the last year (1 item), period of the day when the pain intensifies (1 item) (8).

RESULTS

Patient general characteristics are summarized in table I.

Clinical aspects are shown in table II.

TABLE I.
Patient general information

Patient characteristics	Study group (60 ps)	Conventional procedure (30 ps)	Endovenous procedure (30 ps)
Sex			
M	20%	0%	12 (40%)
F	80%	30 (100%)	18 (60%)
Age			
median	51 years	54 years	47 years
Provenience			
R	24 (40%)	15 (50%)	9 (30%)
U	36 (60%)	15 (50%)	21 (70%)
Affected lower limb			
unilateral	33 (55%)	17 (56.67%)	16 (53.33%)
bilateral	27 (45%)	13 (43.33%)	14 (46.67%)
Previous venotonic medication	45 (75%)	26 (86.66)	16 (53.33%)
Previous compression stockings wearing	35 (58.33%)	14 (46.67%)	11 (36.67%)

TABLE II.
Clinical classification

Clinical classification	Study group (60 ps)	Conventional procedure (30 ps)	Endovenous procedure (30 ps)
C0	0	0	0
C1	0	0	0
C2	9 (15.00%)	3 (10.00%)	6 (20.00%)
C3	31 (51.66 %)	17 (56.67%)	14 (46.67%)
C4	6 (10.00%)	3 (10.00%)	3 (10.00 %)
C5	8 (13.33%)	3 (10.00%)	5 (16.67%)
C6	6 (10.00%)	4 (13.33%)	2 (6.67%)

Majority of patients were female, with unilateral affected limb, in C3 clinical class, previously on venotonic medication (tabs. I, II).

For both groups we evaluated the CIVIQ-20 score and VEINES QoL/Sym at specific periods of time: before the procedure, after the procedure at 10 days, 1 and 2 months. The results are as following.

The average CIVIQ-20 score for the entire lot, calculated to evaluate the QoL before the procedures was 61.19 points. The score evaluated 10 days after the procedures dropped to 53.15, due to postproce-

dural discomfort. The postprocedural score range was 22.5-96.25 points. The higher the score, the better the patient perceived the QoL. A significant improvement was noticed at 1 and respective 2 months after the procedure (67.44 points, respective 75.59 points) (fig.1).

When we compared the improvement of QoL between groups, we noticed that the average GIS score at each postoperative evaluation timing was higher for the endovenous group (fig. 2). There was no significant difference between the preoperative evaluation of the groups, certifying the

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groups were comparable. Patients had similar perception over the preprocedural QoL. The comparison data that proved to differ

significantly between groups were the scores calculated at 30 days and 2 months (p<0.05) (tab. III).



Fig. 1. GIS score on the study group

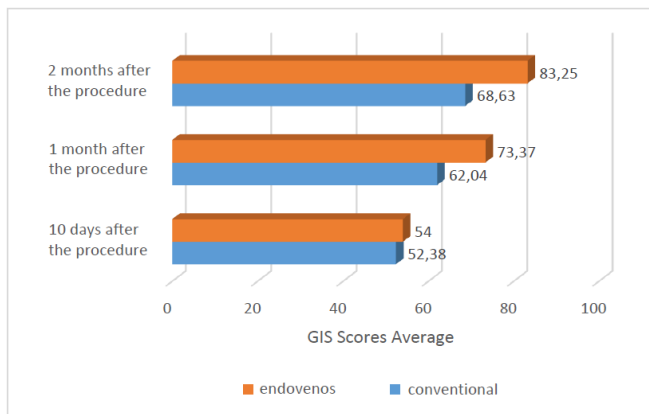


Fig. 2. Comparison between endovenous and conventional average GIS scores

TABLE II.

GIS score comparison between endovenous and conventional

	GIS score before the procedure		GIS score 10 days after the procedure		GIS score 1 month after the procedure		GIS score 1 months after the procedure	
	C	E	C	E	C	E	C	E
Average	55.90	67.00	52.38	54.00	62.04	73.37	68.63	83.25
Standard deviation	22.00	14.90	20.15	18.68	15.36	14.01	14.19	9.32
Maximum score	88.75	96.25	76.25	81.25	80.00	100.00	88.75	100.00
Minimum score	22.50	48.75	8.75	30.00	31.25	51.25	43.75	72.50
Chi test	p=0.098445		p=0.425792		p=0.047343		p=0.006269	

*C=conventional, E=endovenous LASER ablation

Similar to CIVIQ-20 score, the overall analysis of patient responses on VEINES Qol/Sym questionnaire indicates an improvement in postoperative quality of life by achieving higher scores (fig. 3).

The average VEINES Qol/Sym score before the procedures was 54.286 points and remained almost unchanged 10 days after the procedures (55.19 points). After 1

and respective 2 months the scores increased significantly (67.667 points, respective 71.333 points). Endovenous group patients scored higher also in VEINES Qol/Sym ($p < 0.05$) (fig. 4).

If we compare the results in both types of questionnaire we find similarities in preprocedural evaluation and the postprocedural data trend (figs. 1, 2, 3, 4).

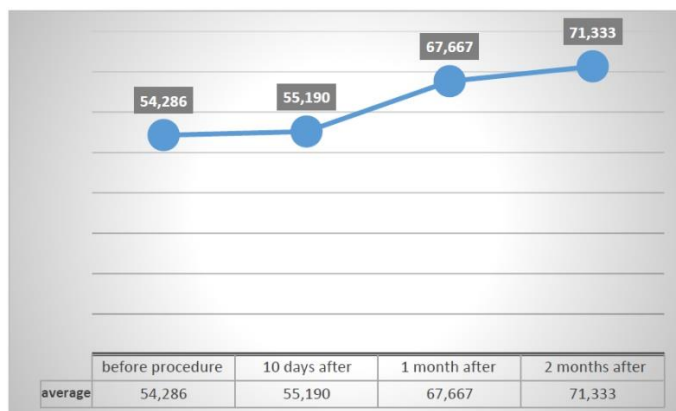


Fig. 3. VEINES Qol/Sym score on the study group

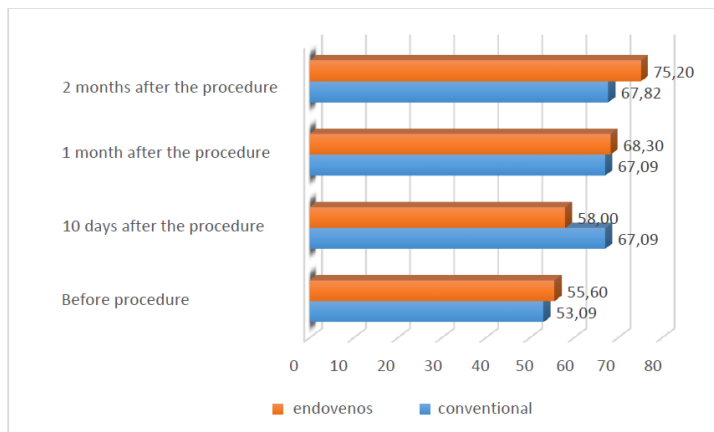


Fig. 4. Average VEINES Qol/Sym score-comparison between endovenous and conventional

DISCUSSION

Enrolling patients both from the private clinic and the hospital allowed us to form 2

comparable groups without taking into consideration the financial aspects that might influence the patients in deciding

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between the types of procedures. Patients included in the study had previously established indication of treatment and were suitable for both procedures, conventional or endovenous. Groups characteristics were similar. According to CEAP classification, patient included in clinical class 3 were predominant in both groups.

Lower preoperatively scores are interpreted in the context of CVD symptoms. A correlation between the clinical class and the Qol remain to be investigated. Higher score recorded after any of the procedures prove the efficiency in relieving symptoms for both treatment techniques. A number of studies that refer to patients Qol, including a Cochrane review, concluded that both therapies led to improvement. The present study advocates the same. Recurrence of venous reflux, adverse effects, occurrence of hematomas, neo-vascularization, ulcers, persistence of ecchymosis, recorded lower occurrence rates in patients treated through endovenous therapy (9). This aspect supports the results of the study, which show a significant increase in Qol scores.

Endovenous self-assess higher postoperative scores, with faster reintegration into daily activities is supported through this study and was addressed by several other studies. A retrospective study involving 182 patients who underwent endovenous or conventional surgery, concluded that patients were more satisfied after endovenous procedures. Symptoms of CVD reappeared more often in those who underwent conventional surgery. Also, those who underwent endovenous intervention were shown to have their health condition improved (10).

Evaluating the Qol through questionnaires can be suspected of subjectivity, but

by getting similar results through 2 different questionnaires validates the results.

It is important to continue the study after 1 year to see if different perception upon the Qol modifies with time. The presumption is that after a longer period the differences between the 2 procedures are no longer significant.

CONCLUSIONS

CVD is a frequent pathology, with significant impairment on the Qol. Interventions for reflux in the great saphenous vein result in significant clinical improvement, increases the Qol, and may be associated with economic benefits.

In this study, compared CVD treatment procedures proved efficient in improving the Qol. The improvement was obvious and significantly higher in the case of endovenous treated patients in comparison with conventional treated patients. This advocates for better results, with faster recovery, less intense postoperative pain, faster social reintegration for patients treated through endovenous procedure. Conventional surgical treatment is effective and improves the quality of life, but due to the invasiveness of the procedure and the long duration of postoperative recovery, it registers lower postoperative scores

In a rapidly evolving field, non-thermal, non-tumescent options such as mechanochemical ablation or cyanoacrylate adhesive closure are the latest advances and may improve the Qol even more.

CONFLICT OF INTEREST AND FUNDING

The authors declare that there is no conflict of interest, and they received no specific funding regarding this scientific research.

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