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Original Article

PREVALÊNCIA CLÍNICA-EPIDEMIOLÓGICA DOS PACIENTES CIRÚRGICOS DE VARIZES EM MEMBROS INFERIORES

CLINICAL-EPIDEMIOLOGICAL PREVALENCE OF PATIENTS UNDERGOING LOWER LIMB VARICOSE VEIN SURGERY

PREVALENCIA CLÍNICO-EPIDEMIOLÓGICA DE PACIENTES QUIRÚRGICOS CON VARICESEN MIEMBROS INFERIORES

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RESUMO

Objetivo: investigar a prevalência clínica-epidemiológica dos pacientes submetidos à cirurgia de varizes dos membros inferiores. **Método:** estudo transversal. Aplicou-se um questionário de qualidade de vida semiestruturado, adaptado do *Venous Insufficiency Epidemiological and Economic Study* , previamente à cirurgia e, após 40 dias da cirurgia, utilizou-se Teste de Qui-quadrado de Pearson e teste exato de Fisher, com correção de Bonferroni. As variáveis bivariadas foram consideradas significativas, quando geraram valor de p <0,05. **Resultados:** em 75,8% das mulheres havia veias perfurantes, antes da cirurgia, e 66 % delas permaneciam com veias varicosas, após a cirurgia. 80% dos homens não apresentavam limitações, no trabalho, e 61,7% das mulheres não mostravam limitações em casa e no trabalho, no pós-cirúrgico. Uma prevalência de 72% dos participantes, que tinham trombose venosa profunda, foi associada à hipertensão arterial e ao diabetes (p<0,05). **Conclusão:** os resultados apontaram para a necessidade de uma vigilância epidemiológica sistemática e ativa dos pacientes, que permaneceram com veias varicosas, mesmo após terem sido submetidos à cirurgia de varizes, em algum dos membros inferiores. A alta prevalência desses pacientes levou a um aumento do risco potencial de desenvolver trombose venosa profunda e consequente aumento dos eventos adversos físicos e psicológicos.

Descritores: Trombose; Procedimentos Cirúrgicos Vasculares; Indicadores (estatística); Epidemiologia; Enfermagem baseada em Evidências; Insuficiência Venosa.

ABSTRACT

Objective: to investigate the clinical and epidemiological prevalence of patients undergoing varicose vein surgery. **Method:** cross-sectional study. A semi-structured quality of life questionnaire adapted from the Venous Insufficiency Epidemiological and Economic Study was applied prior to surgery and 40 days after surgery. The Pearson's chi-square test and Fisher's exact test with Bonferroni correction were used. Bivariate variables were considered significant when p < 0.05. **Results:** a total of 75.8% of women had perforating veins before surgery and 66% of them still had varicose veins after surgery. Among men, 80% had no limitations at work, while 61.7% of the women had no limitations in home and work activities after surgery. A prevalence of 72% of the participants with deep vein thrombosis was associated with hypertension and diabetes (p < 0.05). **Conclusion:** the results pointed out the need for systematic and active epidemiological surveillance of patients who remained with varicose veins after varicose vein surgery in lower limbs. The high prevalence of these patients led to an increased potential risk for developing deep vein thrombosis and consequent increase in physical and psychological adverse events.

Keywords: Thrombosis, Vascular Surgical Procedures; Indicators (Statistics); Epidemiology; Evidence-based Nursing; Venous Insufficiency.

RESUMEN

Objetivo: investigar la prevalencia clínica y epidemiológica de pacientes sometidos a cirugía de venas varicosas. **Método:** estudio transversal. Se aplicó un cuestionario semiestructurado de calidad de vida, adaptado del Estudio Epidemiológico y Económico de Insuficiencia Venosa, antes de la cirugía y después de 40 días de la cirugía. Se utilizaron la prueba de chi-cuadrado de Pearson y la prueba exacta de Fisher con corrección de Bonferroni. Las variables bivariadas se consideraron significativas cuando p <0.05. **Resultados:** 75,8% de las mujeres tenían venas perforantes antes de la cirugía y 66% de ellas tenían venas varicosas después de la cirugía. El 80% de los hombres no tenían limitaciones en el trabajo y el 61,7% de las mujeres no tenían limitaciones en el hogar ni en el trabajo después de la operación. Una prevalencia del 72% de los participantes con trombosis venosa profunda se asoció con hipertensión y diabetes (p <0,05). **Conclusión:** los resultados señalaron la necesidad de una vigilancia epidemiológica sistemática y activa de los pacientes que permanecieron con venas varicosas, incluso después de someterse a una cirugía de venas varicosas en cualquiera de las extremidades inferiores. La alta prevalencia de estos pacientes condujo a un mayor riesgo potencial de desarrollar trombosis venosa profunda y al consiguiente aumento de eventos adversos físicos y psicológicos.

Descriptores: Trombosis; Procedimientos Quirúrgicos Vasculares; Indicadores (Estadística); Epidemiología; Enfermería Basada en la Evidencia; Insuficiencia Venosa.

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INTRODUCTION

Chronic Venous Insufficiency (CVI) causes an impact on public health worldwide and generates financial costs for health services, increases morbidity and mortality, reduces quality of life, and increases absenteeism[1]. In the United States, about seven million Americans are affected by CVI, which corresponds to 70 to 90% of all lower limb ulcers in the population[1].

In Brazil, CVI occupies the 14th position in the reasons for work leave and may even lead to early retirement[2]. Epidemiological data indicate a prevalence of CVI of 35.5% in the population, of which 1.5% is affected by venous ulcers[3].

Chronic venous insufficiency is known as a set of clinical phenomena resulting from a functional imbalance of the venous system caused by venous hypertension, reflux generation, and venous flow obstruction[3]. This imbalance may have a congenital or acquired nature and may reach superficial and deep venous systems. Venous system hypertension is responsible for the onset of clinical symptoms of this disease[4].

Studies point out that CVI can cause functional impairment and affect the quality of life due to vital signs and symptoms, such as pain, edema, lipodermatosclerosis, and difficulty in walking and performing activities of daily living[3-5].

Quality of life is related to functional independence, which, in turn, refers to autonomy and the ability to interact with the environment[3]. Increasing age is one of the common risk factors for CVI and associated factors such as venous ulcers, as it can lead to decreased functional and productive capacity[6].

Because of ineffective actions to reduce morbidity and mortality and the lack of repercussion of health care benefits in the manifestation of chronic venous disease (CVD), the search for scientific and clinical knowledge of the disease and its associated factors has increased significantly in Brazil[7]. The goal is to reduce expenses arising from the treatment of this pathology, and the incidence of its severe forms through early and efficient evaluation.

Another relevant aspect is that although the increase in the prevalence and severity of CVD is a worldwide reality, studies on the intensity of symptoms and impairment of the quality of life of individuals with CVD are still scarce[3,5,7]. Moreover, although studies indicate that the use of a validated questionnaire as the VEINES QoL/Sym® enables an in-depth investigation of the quality of life of individuals with CVI and of the functional, psychological and social impact caused by this problem[4,6], few studies address the severity of clinical signs and the development of the disease of individuals affected by this pathology[4,6].

However, there is a gap in scientific knowledge when it comes to describing the epidemiological profile of pre- and postoperative patients, as well as the impact of treatment on their quality of life. Thus, the present study had the objective to evaluate the clinical and epidemiological profile of patients submitted to lower limb varicose vein surgery.

METHOD

Cross-sectional study conducted in a philanthropic hospital in the countryside of Minas Gerais. The selection of participants was made for convenience, among patients diagnosed with CVI and surgical treatment, hospitalized in the period from August 2017 to November 2018.

During the study period, 260 patients with CVI were hospitalized, but 62 participants who underwent vascular surgery were included in this study.

The sample size was calculated considering a cross-sectional methodological design, using Epidat version 4.1 (Pan American Public Health Organization), setting the following parameters: expected proportion of 50% because of the heterogeneity of the variables to be measured; tolerable margin of error of 5%; and confidence level of 95%. The sample size was adjusted for finite populations and an additional of 30% was included to compensate for possible losses or refusals, and of 20% to increase the statistical power of the tests comparing proportions.

The inclusion criteria for this study were: participants diagnosed with CVI and with indication for surgical treatment (CEAP classification system for chronic venous disorders 2 to 6); age between 25 and 85 years; and people of both sexes.

The exclusion criteria were: participants who were evaluated by the cardiologist or anesthesiologist in the pre-anesthetic evaluation as belonging to the American Society of Anesthesiologists (ASA III or above), that is, those with severe systemic diseases, disabling or not, and life-threatening conditions, and participants diagnosed with cognitive impairment.

A semi-structured questionnaire was applied, adapted from the Venous Insufficiency Epidemiological and Economic study (VEINES QoL/Sym®)[3-5], in two moments: preoperative and 40 days after surgery.

For this study, the following preoperative variables were considered: a) Sociodemographic: gender, age, presence of previous deep vein thrombosis (DVT), systemic arterial hypertension (SAH), diabetes, history of previous surgery, smoking habit, alcohol consumption, physical exercises; b) Clinical classification: 1 - CEAP: C0: without visible or palpable signs of the disease; C1: telangiectasias and/or reticular veins; C2: varicose veins; C3: varicose veins plus edema; C4: hyperpigmentation, edema, lipodermatosclerosis or white atrophy; C5: healed venous ulcer; and C6: active ulcer; 2 - Etiology: congenital, primary, secondary or indefinite cause. 3 - Anatomy: superficial, deep or perforating veins. 4 - Pathophysiology: reflux, obstruction, reflux and obstruction. c) Physical classification: pain, presence of varicose veins, edema, hyperpigmentation, open ulcer and compressive therapy. d) Limitations in domestic tasks; e) Psychological factors present in VEINES QoL/Sym[3-5] such as preoccupation with appearance, preoccupation with tipping over objects, and feeling of being a burden to the family.

For the application of the questionnaires, undergraduate medical and nursing students from the Federal University of Jequitinhonha and Mucuri Valleys (UFVJM) were properly trained by a specialized professional. The training was structured in the following steps: theoretical reading and discussion of texts of the instruments used, and observation of clinical and physical examinations with an angiologist.

The questionnaire was applied in a private room and the confidentiality of the identity of the participants was guaranteed. The questionnaires were coded, so that the participants did not reveal their identity. After these procedures, those who accepted to participate in the research signed the Informed Consent Term (ICT).

The analyses were performed with the aid of the IBM SPSS® Statistics software version 20. The Pearson's chi-square test and Fisher's exact test were used to carry out comparisons. The results were considered significant when the significance level (p) was less than 0.05. In the case of variables with more than two significant categories, the Bonferroni correction test was used. This study was approved by the Research Ethics Committee of UFVJM, under the Opinion 2,282,654 and CAAE 7215741700005108.

RESULTS AND DISCUSSION

In the present study, it was found that CEAP was significantly ($p < 0.003$) different in the pre- and postoperative period. Most of the research participants were C2; 87.2%, in the preoperative period, 12.8% in the postoperative.

Surgical patients who were C6 (4.8%) moved to clinical classification C5 after surgery. This is a reality that can occur when DVT patients postpone surgery and the clinical condition of varicose veins worsens. The surgical procedure may not eliminate the problem in many cases, especially when an open and active ulcer in the lower limbs is already installed.

The pathophysiology was significant ($p < 0.08$), with decreasing prevalence of reflux from 60% (48/80) to 40% (32/80). The prevalence of reflux and obstruction remained the same, but overall, varicose veins did not have more reflux after surgery.

A prospective study evaluated female CVI patients after surgery[1]. There was an improvement in the CEAP classification in 11 of the 15 patients after surgery, and one of the patients had an improvement in the CEAP classification in only one limb ($p < 0.001$)[1]. In the present study, on the other hand, there was a limitation in this sense because, despite the improvement in the CEAP after surgery, the participants were clinically classified only in the leg on which the surgery was performed. The CEAP of the leg in which the surgery was not performed was not evaluated, and thus the success or recurrence of the surgery was considered in the same leg in which the surgical procedure had already been performed.

Table 1 shows the distribution of variables associated with clinical (CEAP, anatomical location, pathophysiology) and physical characteristics (pain, varicose veins, edema, hyperpigmentation, lipodermatosclerosis, open ulcers, compression therapy) versus the pre- and postoperative period.

Table 1 - Association of clinical (CEAP, anatomical location, pathophysiology) and physical characteristics (pain, varicose veins, edema, hyperpigmentation, lipodermatosclerosis, open ulcers and compression therapy) in the pre- and postoperative period. Diamantina/MG/Brazil, 2018.

Variables		Surgery	p-value
	Pre- (n = 62) f (%)	Post- (n = 62) f (%)	
CEAP *			
C0**(1)	----	12(100)	----
C1¶	----	41(100)	0.065
C2‡	41(87.2)	6(12.8)	0.034
C3†	8(12.9)	----	0.014
C4ǂ	4 (6.5)	----	0.001***
C5ᶫ	6 (66.7)	3(33.3)	0.002***
C6‡‡	----	3 (4.8)	0.233
Anatomical location	0.003‖		
Superficial	47(46.5)	54 (53.5)	
Perforating	5 (62.5)	3 (37.5)	
Physiopathology			
Reflux	48(60.0)	32(40.0)	0.005‖‖
Reflux and obstruction (1)	2(50.0)	2(50.0)	----
No reflux	12(30.0)	28(70.0)	0.04‖‖
Pain			
None (1)	----	30(100.0)	----
Very light	----	18(100.0)	0.010
Light	5(38.4)	9(61.6)	0.023
Moderate	23(82.1)	5(17.9)	0.003§
Severe	20(100.0)	----	0.054
Very severe	14(100.0)	----	0.046
Varicose veins			0.960
Yes	62(62.0)	38(38.0)	
No	----	24(100.0)	
Edema			0.350
Yes	35(71.4)	14(28.6)	
No	27(36.0)	48(64.0)	
Hyperpigmentation			0.430
Yes	36(69.3)	16(30.7)	
No	26(36.0)	46(64.0)	
Lipodermatosclerosis			0.640
Yes	9(90.0)	1(10.0)	
No	53(46.4)	61(53.6)	
Open ulcers			0.030‖
Yes	3(50.0)	3(50.0)	
No	59(50.0)	59(50.0)	
Compression therapy			0.560
Yes	8(13.6)	51(86.4)	
No	54(83.0)	11(17.0)	

Source: prepared by the authors.

*Classification System for Chronic Venous Disorders; **Without visible or palpable signs of the disease; ¶Telangiectasias and/or reticular veins; ‡Varicose veins; †Varicose veins plus edema; ǂHyperpigmentation, edema, lipodermatosclerosis or white atrophy; ᶫVenous ulcer healed; ‡Active ulcer; ***Significance level ($p < 0.003$) - Pearson's chi-square test with Bonferroni correction, where number (1) is the reference variable for the analysis. ‖Significance level considering the Chi-square test ($p < 0.05$). ‖‖Significance level ($p < 0.08$) - Pearson's chi-square test with Bonferroni correction. §Significance level ($p < 0.004$) - Pearson's chi-square test with Bonferroni correction.

In this study, it was found that of the total participants (n = 62), 55 (87.7%) had primary etiology before surgery, and 46 (74.2%), 40 days after surgery. Seven (11.3%) had secondary etiology before surgery and 5 (8.1%) after surgery ($p = 0.003$).

The results of the present study indicated a statistically significant association between presence of DVT and SAH and diabetes ($p < 0.05$). Table 2 shows the association between the variables SAH, diabetes, smoking habit and alcoholism versus thrombophlebitis.

Table 2 - Distribution of the association between thrombophlebitis versus systemic arterial hypertension, diabetes, smoking habit and alcoholism. Diamantina/MG/Brazil, 2018.

Variables	Deep vein thrombosis		p-value
	Yes (n=37) f (%)	No (n=25) f (%)	
Systemic arterial hypertension			
Yes	26(72)	10(28)	0.03*
No	11(42.3)	15(57.7)	
Diabetes			
Yes	10 (45.4)	12(54.6)	
No	27(67.5)	13(32.5)	0.04*
Smoking habit			
Yes	5 (83.3)	1(16.7)	
No	32(57)	24(43)	0.046**
Alcoholism			
Yes	2 (40)	3 (60)	0.694
No	35(61.4)	22(38.6)	

Source: prepared by the authors.
*Significance level ($p < 0.05$): *Pearson's chi-square test; **Fisher's exact test.

Table 2 shows that 72% of the participants with DVT also had SAH and 45.4% had diabetes ($p < 0.05$). In addition, despite the small number of smokers in this study, 83.3% smoked and had DVT. In line with these results, a meta-analysis with prospective studies also found that SAH was associated with DVT, with a relative risk value of 0.97 (CI = 95%: 0.88-1.08)[10]. Deep venous thrombosis was also associated with diabetes, with a relative risk of 1.01 (CI = 95%: 0.89-1.15), and smoking habit, with a relative risk of 1.19 (CI = 95%: 1.08-1.32)[10].

Deep venous thrombosis is the leading cause of in-hospital deaths worldwide and is easily preventable by identifying risk factors and prophylaxis[12]. In a study, ultrasound was performed on patients with suspicion of DVT and some risk factors for developing thrombosis were identified, such as age 41-60 years, obesity, family history of thrombosis and use of contraceptives[12]. These risk factors and age were also mentioned as health indicators in the present study and were associated with the development of DVT[12].

The results of the present study also corroborated another those of a cross-sectional study applying the Health Related Quality of Life (HRQoL) questionnaire, where 61.4% of the participants with varicose veins were women and aged over 60 years[5].

Deep venous thrombosis can develop as a result of valvular incompetence or obstruction with disruption of blood flow and venous return in the deep veins of the lower limbs, a factor that generates venous hypertension and compromises the blood supply to the tissues in the affected limb, with possibility of generating a venous ulcer[13].

The history of previous surgery associated with DVT, CEAP, presence of pre- and postoperative varicose veins is presented in Table 3.

Table 3 - Distribution of etiology, CEAP, history of previous surgery, and presence of pre- and postoperative varicose veins associated to sex in Diamantina/MG/Brazil, 2018.

Variables	Sex		p-value
	Female n = 47 f (%)	Male n = 47 f (%)	
Preoperative etiology			0.093
Congenital	----	----	
Primary secondary	41(74.5)	14(25.5)	
Indefinite cause	6(85.7)	1(14.3)	
Postoperative etiology			
Primary	38 (82.6)	8(17.4)	0.067*
Secondary (1)	5(83.3)	1(16.7)	----
Indefinite cause	4(40.0)	6(60.0)	0.045*
Preoperative CEAP **			
C2‡	31 (75.6)	10(24.4)	
C3ǂ	4(57.1)	3(42.9)	
C4†	5(100.0)	----	0.056
C5¶	4(66.7)	2(33.3)	
C6‡‡	3(100.0)	----	
Postoperative CEAP**			
C2‡	5(41.7)	7(58.3)	0.003¶¶
C3ǂ	36(87.8)	5(12.2)	0.002¶¶
C4†	3(50.0)	3(50.0)	0.001¶¶
C5¶	3(100.0)	----	0.310
History of previous surgery			
Yes	26(86.7)	4(13.3)	0.040ǁǁ
No	21(65.6)	11(34.4)	
Preoperative varicose veins			
Yes	47(75.8)	15(24.2)	-----
No	----	----	
Postoperative varicose veins			
Yes	31(81.6)	7(18.4)	0.165
No	16(66.7)	8(33.3)	

Source: prepared by the authors.

*Significance level (p < 0.08): Fisher's exact test with Bonferroni correction, where number (1) is the reference variable for the analysis; **Classification System for Chronic Venous Disorders; ‡ Varicose veins; ǂ Varicose veins plus edema; †Hyperpigmentation, edema, lipodermatosclerosis or white atrophy; ¶Healed venous ulcer; ‡‡Active ulcer; ⌜ Without visible or palpable signs of the disease; ⌊Telangiectasias and/or reticular veins. ¶¶Fisher's exact test with Bonferroni correction (p < 0.03); ǁǁChi-square test (p < 0.05).

It was found that 75.8% of the women had varicose veins before surgery. However, 81.6% had varicose veins after surgery (Table 3). It is noteworthy that despite the improvement in the classification, there was still a prevalence of female C5 in the postoperative period. In the clinical classification C5, ulcer recurrence is possible because there are still varicose veins, edema, hyperpigmentation, and lipodermatosclerosis[5,12]. On the other hand, 18.4% of the men still had varicose veins after surgery.

The prevalence values shown in Table 3 may justify the presence of pain, edema, inflammation and hyperpigmentation even after varicose vein surgery. These physical signs are health indicators that contribute to health adjustment, daily lower limb care, including rest

with legs in an elevated position, and regular physical activity.

The prevalence of women with a history of previous surgery was 86.7% (26/30) and of men was 3.3% (4/30) ($p < 0.05$). A cross-sectional study applied the HRQoL/SF-36 questionnaire to patients with CVD[13]. As in the results in the present study, there were more female (69%) than male (31%) patients[13].The presence of CVD associated with venous ulcer in women is recurrent, as women are more prone to certain risk factors such as contraceptive use, multiple pregnancies, hormonal problems and low muscle mass, which contribute for a greater tendency to develop venous ulcers[14].

In the cross-sectional study above mentioned[13], the presence of venous ulcers was more frequent among participants older than 60 years ($p = 0.009$)[13]. In the present study, elderly, females, and patients over 60 years old also presented open venous ulcers classified as C6 ($p = 0.002$) before surgery. After 40 days, however, they were already healed and classified as C5.

In the present study, it was found that, even after the surgery, the participants had some kind of limitation in work and home activities. Age was significant ($p < 0.004$) in the limitations in work activities (Table 4). Regarding age, 30.3% of the participants aged between 40 and 59 years felt a little limited, but only 18.2% in this same age group had limitations in home activities.

Table 4 - Distribution of daily limitations in work and home activities after surgery associated with gender and age in Diamantina/MG/Brazil, 2018.

Daily limitations after surgery	**Sex**			**Age**			
	Male	**Female**	**p-value**	**25-39**	**40-59**	**>60**	**p-value**
	N(%)	N(%)		N(%)	N(%)	N(%)	
Limitation at work			0.080				
% Unemployed	---	8(17)		1(5)	4(12.1)	3(33)	0.003*
Little limited (1)	3(20)	10(21.3)		2(10)	10(30.3)	1(11.1)	---
Very limited	---	---		---	---	---	---
Not limited	12(80)	29(61.7)		17(85)	19(57.6)	5(55.6)	0.002*
Limitation in home activities			0.469				0.601
Little limited	2(13.6)	9(19.1)		4 (20)	6(18.2)	1(11.1)	
Very limited	---	---		---	---	---	
Not limited	13 (86.7)	38(80.9)		16(80)	27(81.8)	8(88.9)	

Source: prepared by the authors.

*****Significance level ($p < 0.004$): Fisher's exact test with Bonferroni correction with the reference variable identified by the number (1)

In line with the results found, a cross-sectional study about the quality of life of venous ulcer patients using scores in a validated instrument for data collection[15]. The limitation of these individuals in activities of daily living created a sense of discomfort because most patients were active and engaged in activities, either at work or at home, before developing the wound[15].

Another study conducted in the United States to evaluate the quality of life of participants with varicose veins and the impact of this health problem on their activities of daily living reinforces the findings of the present study[16]. The study also applied the VEINES-QOL/Sym questionnaire® and found that 47% of the participants reported difficulty in carrying out their work, 37% were limited in work, 37% reported being somewhat limited, and 31% reported reduced work time[16].

Regarding sex, 80% of the men and 61.7% of the women showed no limitations in work activities. A total of 17.7% of participants who underwent surgery still had some limitation in their work activities. Such groups of participants were those who still had varicose veins after surgery, either due to their advanced age or because of the number of damaged veins, because they were so many that it was not possible to remove all in a single surgery.

Regarding the psychological aspects, although not significant (p > 0.05), there were still participants who felt a weight to the family and who were concerned with the appearance of the legs and the choice of clothes in the postoperative period. Furthermore, the results involving gender-related psychological issues showed prevalence differences, although not significant (p > 0.05), that can generate evaluation indicators (Table 5).

Table 5 - Distribution of gender-related questions related to psychological aspects in Diamantina/MG/Brazil, 2018.

Psychological aspects	**Sex**		**p-value***
	Female	Male	
Concern about the appearance of the legs	N(%)	N(%)	0.153
All the time	3(6.38)	0	
Most of the time	2(4.25)	0	
A good part of the time	0	0	
Sometimes	13(27.65)	0	
Little time	20(42.55)	4(26.66)	
Never	9(19.78)	11(73.34)	
Total	**47(100)**	**15(100)**	
Appearance influences clothing choice			0.080
All the time	3(6.38)	0	
Most of the time	4(8.51)	0	
A good part of the time	2(4.25)	0	
Sometimes	14(29.78)	0	
Little time	22(46.88)	1(6.67)	
Never	2(4.25)	14(93.33)	
Total	**47(100)**	**15(100)**	
Worried about tipping over things			0.090
All the time	0	0	
Most of the time	0	0	
A good part of the time	0	0	
Sometimes	3(6.38)	0	
Little time	14(29.78)	4(26.66)	
Never	30(63.82)	11(73.34)	
Total	**47(100)**	**15(100)**	
Feeling of being a burden to the family			0.429
All the time	0	0	
Most of the time	0	0	
A good part of the time	4(8.51)	0	
Sometimes	18(38.29)	0	
Little time	3(6.38)	2(13.33)	
Never	22(46.88)	13(86.67)	
Total	**47(100)**	**15(100)**	

Source: prepared by the authors.
* Significance level (p < 0.05): Fisher's Exact Test

In the present study, most women (42.55%) were *little time* concerned with appearance (Table 5). On the other hand, men presented fewer concerns (26.66%). While 46.88% of women were concerned with choosing clothes, only 6.67% of men had this concern. It was also found that while 38.29% of women *sometimes* felt to be a burden to the family, no man felt worried with this. However, two participants felt *little time* concern about being a burden to the family.

These results corroborate the data obtained from a clinical study conducted in the United States, where the VEINES QoL/Sym® was applied to varicose vein participants, where 75% of the participants reported *little time* concerned, and 65% reported that appearance influenced the choice of clothes[16]. Moreover, more than 20% reported feeling a burden on the family[16]. However, no distinction was observed between males and females[16].

Another important factor that can worsen the quality of life of DVT patients is physical and emotional fatigue[15]. Such manifestations alter the body image and directly interfere with social relations[15]. Some feelings such as sadness, anxiety, anger and shame are noticeable, considering that these feelings determine a large

number of difficulties in relation to self-care, especially when the individuals realize that they are a *burden to the family* (Table 5).

According to Table 5, 29.78% of the women worried *little time* tipping over things 40 days after surgery. It can be inferred that although they had surgery, they still had varicose veins that prone to become open venous ulcers and consequently lead to severe chronic venous insufficiency, ie inability of venous valves to pump blood upwards.

Importantly, regardless of the presence of open or not open ulcers, some physical characteristics such as edema, for example, persisted in 22.6% of the participants after surgery. Edema may indicate the presence of excessive amount of fluid in these patients[11], and it is usually seen in the perimaleolar region or extending to the lower third of the leg, and is often associated with chronic venous insufficiency. Measures should be undertaken to control edema because it impairs blood flow and tissue oxygenation and nutrition.

In this study, 57.15% of participants responded that edema poses a *little limitation* in the work activities. Therefore, postoperative follow-up of patients should be performed even after a long period post-surgery, because the complete improvement of the quality of life of these patients does not always occur, either because of the number of varicose veins or because of their clinical characteristics that persist, or because of genetic factors.

The results of this study indicated that despite varicose vein surgery, the veins were not always completely eliminated and, in severe cases, a risk-free clinical classification was not achieved. Signs and symptoms such as inflammation, hyperpigmentation, edema, and lipodermatosclerosis were present in some patients after surgery. Also, some participants remained with limitations in work and home activities. Psychological factors still persisted in the daily life of these patients.

Because of all the physical and psychosocial limitations that DVT patients have to face in their daily lives, there is an urgent need to adapt health care to the social environment of these individuals and to intensify the search for better living conditions.

CONCLUSION

The results of the present study contribute to a systematic evaluation of institutional clinical practice, and to specific interventions implemented in care, as surgical treatment did not influence the decrease of postoperative CVI prevalence and its physical and clinical characteristics, such as pathophysiology and presence of varicose veins. It was also found in this study that the quality of life of the majority of the patients did not improve after surgery, but the signs and symptoms of the disease were rather perpetuated, although in a milder way. The results also contribute to the scientific community through the identification of gaps in scientific knowledge, such as the impact of surgical treatment on the quality of life of patients with CVI. The implemented quality of life questionnaire made it possible to know the situation of specific population groups with broad epidemiological significance, within the context of hospital care. Future epidemiological studies could make the follow-up of DVT patients, together with the entire multidisciplinary team, so that new treatment and evaluation options can be considered before and after surgery.

REFERENCES

1- Barros BCS, Araújo A, Magalhães C, Barros R, Fiorelli S, Gatis R. Efficacy of varicose vein surgery with preservation of the great safenous vein. Rev Col Bras Cir. 2015;42(2):111-5.DOI: 10.1590/0100-699112015002008

2- Seidel AC, Coelho RL, Coelho M L, Belczar CEQ. Is vein damage the only cause of clinicals flower limb chronic venous insufficiency? J Vasc Bras. 2014;13(3): 162-7. DOI: 10.1590/jvb.2014.015

3- Sutzko DC, Obi AT, Kimball AS, Smith ME, Wakefield TW, Osborne NH. Clinical outcomes after varicose vein procedures in octogenarians within the Vascular Quality Initiative Varicose Vein Registry. J Vasc Surg Venous Lymphat Disord. 2018;6(4):464-70. DOI: 10.1016/j.jvsv.2018.02.008

4- Epstein D, Onida S, Bootun R, Ortega-Ortega M, Davies AH. Cost-effectiveness of current and emerging treatments of varicose veins. Value Health 2018;21(8):911-20. DOI: 10.1016/j.jval.2018.01.01

5- Torres SMSSO, Araújo RS, Costa IKF, Tibúrcio MP, Sousa AJG, Pergola-Marconato AM, et al. Health-related quality of life in patients with venous leg ulcer treated in primary care in Brazil and Portugal. PLoS One 2018; 13(4):e0195990. DOI: 10.1371/journal.pone.0195990

6- Lopes JF, Camacho ACLF, Silva RMCRA, Leite

BS, Queiroz RS, Assis C RC. Impact of home visits on the functional capacity of patients with venous ulcers. Rev Bras Enferm. 2017;70(2):287-93. DOI: 10.1590/0034-7167-2016-0291

7- Rossi F H, Volpato MG, Metzger PB, Beteli CB, Almeida BL, Rossi CBO, et al. Relationships between severity of signs and symptoms and quality of life in patients with chronic venous disease. J Vasc Bras. 2015;14(1): 22-8. DOI: 10.1590/1677-5449.20140039

8- Paty J, Elash CA, Turner-Bowker DM. Content validity for the VVSymQ® instrument: A new patient-reported outcome measure for the assessment of varicose veins symptoms. Patient 2017;10(1):51–63. DOI: 10.1007/s40271-016-0183-y

9- Salmhofer W. Etiology, nomenclature and pathophysiology of chronic venous insufficiency. Wien Med Wochenschr. 2016;166(9/10):264–69. DOI: 10.1007/s10354-016-0466-x

10- Mahmoodi BK, Cushman M, Anne N I, Allison MA, Bos WJ, Brækkan SK, et al. Association of traditional cardiovascular risk factors with venous thromboembolism: An individual participant data meta-analysis of prospective studies. Circulation 2017;135(1):7-16. DOI: 10.1161 /CIRCULATIONAHA.116.024507

11- Nogueira G A, Oliveira BGRB, Santana RF, Cavalcanti ACD. Nursing diagnoses in patients with chronic venous ulcer: Observational study.Rev Eletr Enferm 2015;17(2):333-9. DOI: 10.5216/ree.v17i2.28782

12- Okuhara A, Navarro TP, Procópio RJ, Leite JOM. Incidence of deep venous thrombosis and stratification of risk groups in a university hospital vascular surgery unit. J Vasc Bras. 2015;14(2):139-44. DOI: 10.1590/1677-5449.0071

13- Dias TYAF, Costa IKF, Melo MDM, Torres SMSGSO, Maia EMC. Quality of life assessment of patients with and without venous ulcer. Rev Latino-Am Enfermagem 2014;22(4):576-81. DOI: 10.1590/0104-1169.3304.2454

14- Nyquist P, Bautiste C, Jichici D, Burns J, Chhangani S, DeFilippis M, et al. Prophylaxis of venous thrombosis in neurocritical care patients: An evidence-based guideline: A statement for healthcare professionals from the neurocritical care society. Neurocrit Care 2016;24(1):47–60. DOI: 10.1007/s12028-015-0221-y

15- Santos KFR, Silva PR, Ferreira VT, Domingues ARE, Simões IRA, Lima RS, et al. Quality of life of people with chronic ulcers. J Vasc Nurs. 2016;34(4): 131-6. DOI: 10.1016/j.jvn.2016.06.003

16- Mallick R, LAL BK, Daugherty C. Relationship between patient-reported symptoms, limitations in daily activities, and psychological impact in varicose veins. J Vasc Surg Venous Lymphat Disord. 2017;5(2):224-37. DOI: 10.1016/j.jvsv.2016.11.004

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