

A task force for varicose vein surgery

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ABSTRACT

Background: Varicose vein surgery of the lower limbs is one of the most frequent procedures carried out in the Brazilian public health system (Sistema Único de Saúde), especially during task forces focused on elective surgeries. However, detailed information on the results of such initiatives are absent in the literature, particularly with regard to the population that benefits from the task forces.

Objectives: To present and discuss the profile of patients operated on during a task force for varicose vein surgery carried out in a public health institution.

Methods: The patients were selected from a database organized by the Brazilian Health Ministry for the program of elective surgeries, and they had no previous link with the hospital institution. A protocol for objective evaluation with the clinical data and demographic profile of the patients was applied. The patients were staged according to CEAP classification.

Results: From September 2005 to January 2006, 100 patients (106 procedures) underwent surgery, females being predominant (85% of the cases). Mean age was 35±9.8 years. Predominant schooling level among patients was primary school (53%). C2 (49.5%) and C3 (39%) were the most frequent CEAP classes in the clinical evaluation of lower limbs. A total of 106 surgeries was performed (100 patients). The preferred anesthetic technique was block anesthesia (93% of the procedures). Six patients were submitted to two different procedures due to great volume of lower limb varicose veins; 33 patients were submitted to internal saphenous vein stripping (four cases of segmental saphenous vein stripping); and eight patients were submitted to bilateral total saphenous vein stripping.

Conclusion: Profile of the population that benefited from the task force for varicose vein surgeries

was: young symptomatic female patients, with low schooling level, moderate stages of disease, especially in CEAP clinical classes C2 and C3, and who require surgeries of moderate and long duration for the treatment of their diseases.

Keywords: Varicose veins, venous insufficiency, health profile.

RESUMO

Contexto: A cirurgia de varizes de membros inferiores é um dos procedimentos mais realizados dentro do Sistema Único de Saúde, através dos Mutirões de Cirurgias Eletivas. No entanto, não há informações detalhadas sobre os resultados dessa iniciativa, especialmente com relação à população que se beneficia dos mutirões.

Objetivo: Apresentar e discutir o perfil dos pacientes operados durante o mutirão de varizes realizado em instituição pública de saúde.

Métodos: Os pacientes foram selecionados a partir de um cadastro organizado pelo Ministério da Saúde para o programa de cirurgias eletivas, e não havia vínculo prévio com a instituição hospitalar. Foi aplicado um protocolo de avaliação objetiva com os dados clínicos e perfil demográfico dos pacientes. Os pacientes foram estagiados de acordo com a classificação CEAP (clínica, etiológica, anatômica e fisiopatológica).

Resultados: No período entre setembro de 2005 e janeiro de 2006, 100 pacientes foram submetidos a cirurgia (106 procedimentos), com predominância do sexo feminino (85% dos casos). A média de idade foi $35 \pm 9,8$ anos. O grau de escolaridade predominante entre os pacientes foi o ensino fundamental, em 53% dos casos. As classes C2 (49,5%) e C3 (39%) foram as mais freqüentes na avaliação clínica dos membros inferiores (classificação CEAP). Foram realizadas 106 cirurgias (100 pacientes). A anestesia mais utilizada foi o bloqueio (93% dos procedimentos). Seis pacientes foram submetidos a procedimentos escalonados pelo grande volume de varizes de membros inferiores; 33 pacientes foram submetidos à safenectomia interna, sendo quatro safenectomias segmentares; e oito pacientes foram submetidos à safenectomia total bilateral.

Conclusão: O perfil da população que se beneficiou dos mutirões sugerido neste trabalho é de pacientes jovens, do sexo feminino, com baixa escolaridade, sintomáticas do ponto de vista da doença venosa de membros inferiores, em estágios moderados da doença, especialmente nas classes C2 e C3 da CEAP, e que requerem cirurgias de médio e grande porte para o tratamento de suas patologias.

Palavras-chave: Varizes, insuficiência venosa, perfil de saúde.

Introduction

In the beginning of 1999, the Brazilian Department of Health launched the National Campaign of Task Forces for Elective Surgeries, a measure that aimed at increasing access and improving quality of hospital services, due to difficulties faced by users of the Brazilian Unified Health System (SUS) to be submitted to elective surgical procedures. During the first 3 years of that campaign, the number of varicose vein surgeries performed by SUS increased from 25,500/year to 50,000/year.¹ Considering the campaign success, task forces have been renewed every year since then (Figure 1).



Source: Brazilian Department of Health.

Figure 1 - Distribution of lower limb varicose vein surgeries performed since the implementation of the National Campaign of Task Forces for Elective Surgeries

In 2005, Hospital Universitário Pedro Ernesto started integrating the group of institutions participating in the program of elective surgeries. Many services were organized to receive patients who were submitted to surgeries for cataract, hernia and prostate. The Vascular Surgery Service set a goal to perform 100 varicose vein surgeries in the lower limbs over the last trimester.

This study aims at presenting and discussing the profile of patients submitted to surgeries during the task force performed in our institution in 2005.

Methods

Selection of patients

The patients included in the campaign were selected based on a database organized by the Department of Health. Data were collected by a free telephone call to the program of elective surgeries. Each participating hospital provided a given number of vacancies for first time appointments, informing place and date of appointments. There was no previous bond between patients and the hospital institution. The contact with the patient was performed by the Department of Health, through telegram scheduling place (hospital), day and time of the first appointment.

Assessment protocol

In all patients who received care, a protocol of objective assessment with patients' clinical data was applied. In the first appointment, a detailed anamnesis was performed, which included clinical history focusing on patients' demographic profile. Information regarding time of disease evolution, profession, schooling, pathological antecedents, risk factors, gynecological and gestational history, family history and data about previous treatment of varicose veins of the lower limbs were recorded. Physical examination was based on clinical work-up, oriented to vascular examination of the lower limbs. Venous Doppler ultrasound of the lower limbs was requested only in case of doubt as to deep venous system or due to need of assessing the saphenous and perforating system. The patients were stratified according to the CEAP classification² and using clinical score of disease severity. The rater defined, by applying the protocol, surgical indication (inclusion of the patient in the task force program), surgery size, type of anesthesia (site or block) and need of saphenous vein stripping.

Patients with high surgical risk were excluded (American Society of Anesthesiologists – ASA III or IV)³ or those who presented clinical conditions that could increase risk of procedure. Thus, obese with body mass index larger than 35,⁴ patients with peripheral occlusive arterial disease and previous venous thrombosis, confirmed by Doppler ultrasound, were among the main contraindications for surgical treatment of varicose veins of the lower limbs.

Surgical treatment

In indication of surgical treatment, the criteria to perform saphenous vein stripping was detection of dilatation and internal or external saphenous vein insufficiency by clinical examination exclusively or using Doppler ultrasound, with measurement of vein diameter higher than 6 mm, associated with important symptoms.

Surgical technique was staggered resection of collateral varicose veins, insufficient perforating vein ligation and saphenous vein stripping.

The data were recorded in a spreadsheet and analyzed.

Results

From September 2005 to January 2006, there were about 350 appointments in the service only for the Task Force for Varicose Veins; of these, 129 were first time appointments. There was great prevalence of females (85% of cases) among patients, and age group varied between 20-67 years, mean age of 35 years (standard deviation = 9.8).

Twenty-nine patients were excluded from the program due to any of the criteria mentioned above. Of the patients excluded from the task force, nine were obese, seven were contraindicated to surgery due to high surgical risk (ASA III or IV),³ three patients had active venous ulcer (C6) with signs of gross contamination,⁵ three had no surgical indication (C0), one had diagnosis of hemophilia, one female patient was pregnant and five other patients did not return or missed hospitalization.

Table 1 shows the main demographic data related to the group assessed. The patients were predominantly residents of Rio de Janeiro, but around 30% of the individuals came from other municipalities in the state. Most patients studied until high school (53% of cases), whereas 33% of the individuals completed primary school, and only 7% had higher education.

Table 1 - Demographic data of patients submitted to surgery in the Task Force for Varicose Veins

Demographic data	
Age	34.9±9.4 years
Duration of disease	12 (1-40) years
Family history of varicose veins	78%
Female gender	85%
> 3 pregnancies	52.9%
Use of OC	35.3%
Previous pregnancy	85.8%
Schooling level	
Primary school	53%
High school	40%
Higher education	7%
Housing	
Rio de Janeiro	70%
Other cities	30%

OC = oral contraceptive.

The symptoms found were very unspecific and common to venous disease of the lower limbs. Complaints of pain, weight and fatigue in the lower limbs were prevalent in the reports of most patients. Complaints were mainly related to orthostatism over long periods. With regard to female patients, the symptoms were also frequent during the menstrual period, with 65% of women reporting worsening of symptoms and 47% reporting "worsening of varicose veins" over that period.

The most prevalent risk factors and events related to the lower limbs were obesity (9%), superficial phlebitis (3%) and history of erysipelas (2%). Family history of varicose veins was present in 78% of cases. Smoking was reported in 18%, and alcoholism in 9% of patients followed.

Previous treatment of venous disease

Duration of disease ranged between 1-40 years of evolution, with mean duration of 11.9±6.7 years; 44% of patients reported using elastic stockings occasionally; a little more than half of patients (53% of cases) were not using phlebotropics; 43% were using them occasionally; and only 3% were using the medication regularly. When asked about the effect of phlebotropics, most (42%) reported little improvement in symptoms; around 1/3 of patients (33%) did not observe any effect; and only 23% reported improvement in symptoms associated with use of medication. When asked whether they were performing limb elevation as a measure to mitigate symptoms, around half of patients reported occasional habit, and only 19% were doing it regularly. As to varicose vein sclerotherapy, 82% of patients had never been submitted to this type of treatment; and 13% of patients had already been submitted to some kind of surgical treatment of lower limb varicose veins.

CEAP classification and clinical score

Table 2 shows distribution of patients according to CEAP clinical classification. Out of 200 limbs (100 patients) submitted to assessment, prevalent classes were C2 (49.5%) and C3 (39%). Only 4% of lower limbs assessed (n = 8) were considered C1 and were not submitted to surgery. Symptoms were present bilaterally in most patients (n = 88). Only seven patients did not have symptoms in any

limb, and five individuals reported complaints in only one lower limb. According to the clinical venous severity score, range was between 1 and 17, with median of 3.

Table 2 - Distribution of patients according to CEAP clinical classification. The letter n in each CEAP class corresponds to the number of limbs assessed

CEAP (clinical)	n (%)	Time* (months)	Age*	Clinical score*	Asymptomatic
C1	8 (4)	192	30.8	1.6	4
C2	99 (49.5)	122.9	33.3	2.6	13
C3	78 (39)	140.4	42.1	4.6	2
C4	10 (5)	142.4	36.9	6	0
C5	3 (1.5)	143.5	55.3	9.7	0
C6	2 (1)	141.9	55	13.5	0

* Means.

Preoperative Doppler ultrasound

Only 12 patients were submitted to preoperative Doppler ultrasound (12% of cases). In seven cases, the examination was requested due to doubts in physical examination of the internal saphenous vein to identify reflux or in assessment of vein diameters. In five patients, the examination aimed at assessing the deep venous system. Of the 12 patients assessed using Doppler ultrasound, in three cases the examination changed the assessment of venous pathology, resulting in indication of saphenous vein stripping. Of the patients who were submitted to Doppler ultrasound, four were submitted to internal saphenous vein stripping, and two cases were submitted to bilateral saphenous vein stripping during varicose vein surgery.

Surgeries performed

A total of 106 surgeries was performed in 100 patients. Six patients were submitted to staggered procedures due to the large volume of lower limb varicose veins (surgery at two different times); 93% of the procedures were performed under anesthetic block; and the rest (7%) under local anesthesia.

Surgeries were classified as size according to procedure duration. Small-sized surgeries were considered those that lasted up to 60 minutes (20%); medium-sized between 60 and 120 minutes (39%); and large-sized when the surgery lasted more than 120 minutes (41%).

Thirty-three patients were submitted to saphenous vein stripping, and eight cases were submitted to total bilateral saphenous vein stripping (Table 3). Only four patients were submitted to segmental saphenous vein stripping (infrapatellar or suprapatellar). Indication of saphenous vein stripping was based on clinical examination in most cases (78.8%). Seven patients (21.2%) were submitted to Doppler ultrasound of the lower limbs with the aim of assessing the saphenous system, resulting in four surgeries using saphenous vein stripping. Doppler ultrasound accounted for change in surgical indication in three of these cases.

Table 3 - Distribution of long duration surgeries (more than 2 hours) and saphenous vein stripping performed according to CEAP classes

CEAP	Large-sized surgeries	Saphenous vein stripping/surgeries
C2	40%	18/99*
C3	41.3%	18/78†
C4	44.4%	3/10
C5	66.7%	0/3
C6	100%	2/2

* Two infrapatellar segmental saphenous vein stripping.

† One infrapatellar segmental saphenous vein stripping.

There were no significant complications in the immediate postoperative period. Four patients reported sensitive alterations in the paramalleolar region, all being submitted to saphenous vein stripping, with incisions at the malleolus level, which did not disappear until 6 months after the procedure. Residual varicose veins were observed in nine patients submitted to surgeries at a 6-month interval after surgeries.

Discussion

Chronic venous disease represents one of the most prevalent pathologies nowadays in the world and is responsible for a significant impact in quality of life of patients affected by it.⁶ It is estimated that between 1-38% of men and between 1-61% of women have lower limb varicose veins. In Brazil, such prevalence can reach up to 50% of the population, being the 14th cause of absenteeism at work and the 32nd cause of invalidity retirement.^{7,8}

In 1999, considering the huge prevalence of some pathologies of surgical treatment among the population and the difficulty in accessing health care services by users of SUS, the Department of Health created the National Campaign of Task Forces for Elective Surgeries, which included varicose vein, cataract and prostate surgeries, as well as treatment of diabetic retinopathy. Such initiative aimed at increasing offer of services and reducing waiting lines for these elective procedures of medium complexity all over the country. The program was initially criticized as to its format and efficiency, being considered, at a first glance, transient and improvised. However, due to their success, task forces have been systemically renewed and today, almost 7 years after the implementation of that program, more than 2 million surgeries have been performed. In the beginning of 2006, the Federal Government modified the National Policy for Elective Surgical Procedures of Medium Complexity, doubling the resources destined to cover the expenses of these surgeries for approximately R\$ 368 million and increasing the number of specialties included in the program.² Therefore, 67 different types of procedures started being funded by the Fund of Strategic Actions and Compensation.

Specifically regarding varicose vein surgery, the incentive policy established by task forces proved to be efficacious. After the implementation of that program, the volume of surgeries in SUS rose from a little less than 23,000 surgeries/year in 1999 for more than 100,000 surgeries/year in 2003 (Figure 1). Since 2003, there has been a fall of 20%, with 78,810 surgeries performed in 2005.¹ Despite recognizing that those numbers are biased and may not entirely reflect reality, the huge increment in volume of surgeries since the implementation of the task force model has been significant.

The group of patients submitted to surgeries in our service was predominantly comprised of women, mean age of 35 (34,9±9,8) years. In the RELIEF study,¹⁰ there were higher mean ages, related to

reflux and more advanced CEAP classes. In a total of 3,000 patients, mean age was 45.5 years. Similarly, symptomatic patients considered C0 (no signs of CVI, but with symptoms) were aged around 40.3 years vs. 54.2 years in the C4 group. In another multi-centered study¹¹ in 700 female patients, mean age was even higher (50 years). The form of patient selection by spontaneous demand and previously registered by telephone through a campaign launched in the media is likely to represent a major bias, privileging younger patients.

Prevalence of lower limb varicose veins grows linearly with age, and ascending values should be expected from age means between patients according to CEAP evolution.¹² Such tendency seems to be present in the group submitted to surgery, but the reduced number of patients subdivided into several CEAP classes prevents any statistical treatment to collected data.

More than half of the patients has low schooling level (complete or incomplete elementary school). Abbade et al. demonstrated that, considering patients in CEAP class C6, more than 90% of patients have less than 4 schooling years, and most of them are below the poverty line.¹³ None of the patients had access to routine treatment (medical visits) for varicose vein disease; only 3% of cases reported taking phlebotropics regularly; and 82% of patients in this group had never been submitted to sclerotherapeutic treatment of varicose veins. These data suggest a low socioeconomic level in this population, which has only SUS as access to clinical treatment.

Only 7% of patients submitted to surgeries were asymptomatic as to lower limb venous disease. Most patients (88% of cases) reported bilateral symptoms, whereas only 5% of them reported symptoms in only one limb. Even so, the clinical score was little significant (median = 3), as well as the percentage of patients taking drugs to treat symptoms. Quantification of painful complaint of these patients can be hard to evaluate, since there are complaints of muscle pain related to orthostatism over long periods at work, and it is also necessary to consider that concern over esthetic can make the patient value or even simulate such complaints, with the aim of favoring surgical indication.

In the group that participated in the task force surgeries, C2 (49.5%) and C3 (39%) were the prevalent classes. This finding is in agreement with other studies, such as that by Carpentier, who also had C2 (29%) and C3 (20%) as the most prevalent classes.¹¹

Clinical classes of more advanced chronic venous disease tend to have longer evolution time of varicose vein disease. In an article published by Cesarone,¹⁴ mean disease time in symptomatic patients considered C0 was 7 years and 18.5 years for C4 patients. The patient involved in this task force had duration time of venous disease similar to classes C3, C4, C5 and C6, around 11 and a half years of evolution, although the number of patients in the last three classes is too small to infer any comparison with other epidemiological studies.

Family history of varicose veins as risk factor was present in 78% of patients. In the literature, such relation is well known.^{14,15} Risk of varicose veins in heirs was calculated by Cesarone in a population study in Italy. It is 90% when both parents are affected, 20% when they are not and 45% when only one parent is affected, 25% for males and 62% for females.¹⁶ In another study, Jantet found a relation between family history and presence of reflux, positive history rates being 67 and 58% in those with and without reflux, respectively.¹⁰

Most surgeries had long duration – 80% more than 1 hour and 40% more than 2 hours of surgery – when compared with the same procedures in private clinic. A large part of indications was for esthetic treatment of lower limbs. Also for that reason, use of anesthetic block (spinal anesthesia or peridural block) was the most prevalent (93% of cases) type of anesthesia used in surgeries. Even so, we consider the number of saphenous vein stripping adequate for the number of patients submitted to surgeries, which reflects a more conservative orientation of the service in routine indication for this type of procedure.

In conclusion, through analysis of collected data in this study, we found the following profile of patients in our country: young women, low schooling level, symptomatic from the perspective of lower limb venous disease, although manifested in moderate stages of the disease, especially in CEAP classes C2 and C3, and that require medium- and large-sized surgeries for the treatment of such diseases. If this tendency is confirmed in other Brazilian regions, the task force can be the only access to a surgical treatment of varicose veins in these patients, which provides an idea of the importance of this type of strategy in public health policies in the country, which need to be increasingly enhanced for the benefit of the whole population using the SUS.

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