

Feasibility and problems of day-care varicose vein surgery in elderly patients

Silvestro Canonico *, Ferdinando Campitiello, Antonio Santoriello

Department of General Surgery, School of Medicine, Second University of Naples, Piazza Miraglia, 80138 Naples, Italy

Received 18 May 2003; accepted 19 August 2003

Abstract

Background: The incidence of varicose veins rises with age and over 30% of elderly people suffer from this disease. In recent years, the surgical treatment of varicose veins has moved more to day surgery (DS), but elderly patients are often excluded. **Objective:** The aim of this study was to consider retrospectively our 10-year experience of varicose disease surgery in elderly patients with reference to the feasibility of day surgeries, and to evaluate the problems that the age of patients causes to shorten hospital stay. **Material and methods:** All 2032 patients who underwent varicose vein surgery at our institution from January 1993 to December 2002 were evaluated retrospectively; of these, 312 patients (15.35%) were older than 65 years. In the group of the elderly patients, 214 (68.6%) were operated on as inpatients and 98 (31.4%) as day-care cases; in the younger group, 60.23% were treated as day cases. All patients were examined and selected depending on their general health conditions, local conditions and logistics. After their surgery, all patients were checked for at least 3 h and were discharged according to the Post-Anaesthesia Discharge Scoring System. Every patient was given written instructions for home behaviour in the postoperative period, and also phone numbers for medical advice if needed. **Results:** Among the general conditions the reasons for excluding the elderly patients from day-care surgery (DCS) were above all concurrent pathologies (43.9%) and anxiety (17.8%); with regard to local conditions, 31 patients (14.5%) with extensive bilateral varices and 27 patients (12.6%) with complex recurrent disease were excluded; 24 patients (11.2%) were excluded because of logistics. Nearly half (44.9%) of the elderly patients required multiple admissions for diagnostics before surgery. In 15 patients (15.31%), 3–5 weeks passed from the first admission to the operation in order for treatment with drugs of concurrent pathologies. In the elderly group of patients, there was a lower number of long (7.1% versus 15.9%) and below-knee (48.0% versus 56.9%) strippings of the great saphenous vein, and on the contrary a higher number of perforator veins sections (7.1% versus 1.4%), stab avulsions (10.2% versus 1.7%) and skin grafts for ulcers (8.2% versus 2.2%). No problems occurred during surgery and no patient required readmission to hospital for complications. **Conclusion:** This study supports the evidence that varicose vein disease can be safely managed in a day-care unit even in elderly patients. Preoperative restrictive selection is necessary for obtaining good results as numerous old patients are suffering from concurrent pathologies. Particular attention is to be given to anxiety of the patient and the attending persons. Postoperative overnight stay can increase the patient satisfaction and reduce the number of elderly patients excluded from day-care surgery.

© 2003 Elsevier B.V. All rights reserved.

Keywords: Day-care surgery; Varicose vein disease; Elderly

1. Introduction

Lower limb varicose disease shows a 15–30% incidence in the overall population of Western countries [1]. It represents a remarkable pathology, particularly in elderly people, both for its frequency and for the

frequency of severe complications such as venous stasis ulcers. Epidemiological studies have shown that the incidence of varicose disease progressively rises with age. The Basilea study reported a 4% prevalence of saphenous and reticular varices in people about 30 years old, against a 35% prevalence of saphenous varices and a 25% prevalence of reticular varices at the age of 70 years [2]. Another study reported a 36.7% prevalence of lower limb varices among people older than 60 years (14.6% in males and 22.1% in women) [3]. A survey carried out on

* Corresponding author.

E-mail address: silvestro.canonico@unina2.it (S. Canonico).

Italian elderly people in the Campania Region showed a 29.6% prevalence of varicose veins among people over 65 years [4].

In recent years, the surgical treatment of varicose disease, thanks to the evolution of physiopathologic knowledge and anaesthetic and surgical techniques has tended more and more to day-care surgery (DCS). Day case varicose vein surgery rates show remarkable differences in Western Countries. For example, in 1994–1995 the percentage of the lower limb varices operated on as day cases varied from very low values (2.3% in Portugal and 4.9% in Germany) to slightly higher values (11.1% in Australia and 16.1% in Ireland), intermediate values (22.2% in Belgium and 34.6% in England) and very high values (63.9% in Canada and 80.5% in the USA) [5,6]. In 1996, Bergan affirmed that in Southern California 15% of patients operated on for varices as day cases were older than 65 years and that in consequence of the progressive ageing of people phlebological DCS would include more and more elderly patients [7]. We too reported an initial experience that included in a total of 478 patients operated on for varicose veins, 14% of patients over 65 years [8].

The aim of this retrospective study was to consider our longer experience in varicose disease surgery in elderly patients, with specific reference to their treatment in a DCS regimen and to evaluate the problems that the age of the patients gives rise to.

2. Material and methods

From January 1993 to December 2002, 2032 patients underwent surgical interventions for lower limbs varicose disease in the Department of General Surgery of the Second University of Naples. Of these patients, 312 (15.35%) were ≥ 65 years old. Among the elderly patients, 214 (68.6%) were admitted to inpatient hospital stay and 98 (31.4%) were treated in the DCS regimen. Of the latter group (ranging in age from 67 to 77 years, mean age 68.5 years), 76 patients (77.6%) were females and 22 (22.4%) males. One thousand and thirty-six (60.23%) of the 1720 patients under 65 years, were treated as day cases.

All the patients were carefully examined before surgery and preoperative investigations included routine haemato-chemical tests, urine tests, ECG and chest X-ray; the lower limbs examination was always supplemented with Doppler ultrasonography and in the last 5 years with colour Doppler ultrasonography. Further preoperative diagnostic studies (echocardiography, stress ECG, etc.) were carried out as requested by the anaesthetist.

The day surgery (DS) exclusion criteria in the 214 patients who were treated as inpatients were clinical and/or logistic. The clinical criteria in line with national

guidelines, included anaphylactic shock history, insulin-dependant diabetes, previous fits or convulsions, bleeding-risk, coagulopathies, myocardial infarction in the previous 6 months, haemodialysis for chronic renal insufficiency, psychiatric pathology, obesity (body weight over 100 kg for men and 80 kg for women), or an ASA 3 or 4 risk at the time of preoperative anaesthetic assessment. Over anxious patients were also admitted for surgery.

Local clinical criteria for exclusion from the DS regimen included the presence of extensive bilateral varices and complex re-operations for recurrent varices. Logistic criteria for exclusion from DS were the distance of the hospital from the patient's house (> 50 km, or the house on an island of the region) and the unavailability of a person able to attend the patient on his homecoming and during the immediate postoperative period.

All the patients signed an informed consent to DCS as well as the specifics of the proposed operation.

The operations carried out in the DCS regimen, both in the patients under 65 years and in those over 65 years, are illustrated in Table 1. The study included patients undergoing pinch grafts, made with whole thickness fragments taken from over the pubic abdominal wall for the treatment of venous stasis ulcers. The anaesthesia used in the 98 elderly patients was: monoselective intraspinal block in 17 cases (17.3%), block 3:1 according to Winnie in 24 cases (24.5%), local anaesthesia in 57 patients (58.2%). In 18 later cases, the local anaesthesia was combined with propofol e.v. drip.

All the patients were observed for a minimum of 3 h postoperatively and were discharged according to the Post-Anaesthesia Discharge Scoring System described by Chung [9]. Every patient was given written instructions about what to do in the postoperative period and phone numbers to call for medical advice if required. All the patients were asked to return on the seventh postoperative day for follow-up and redressing.

Table 1
Surgical operations for lower limbs varicose disease in day surgery regimen (1993–2002)

Operations	Patients aged ≥ 65 years, <i>N</i> (%)	Patients aged < 65 years, <i>N</i> (%)
Long Stripping of the great saphenous vein	7 (7.1)	165 (15.9)
Below-knee stripping of the G.S.V.	47 (48.0)	589 (56.9)
Crossectomy and varicectomy	11 (11.2)	134 (12.9)
Stripping of the external saphenous vein	8 (8.2)	93 (9.0)
Perforator veins section	7 (7.1)	15 (1.4)
Varices stab avulsion	10 (10.2)	18 (1.7)
Skin grafting for ulcer	8 (8.2)	22 (2.2)
Total	98 (100)	1036 (100)

3. Results

The causes of exclusion of the elderly patients from the DCS regimen are summarised in Table 2. It appears evident how general clinical reasons (61.7%), correlated overall to concurrent pathologies (43.9%) with a frequent and elevated anaesthesiological risk (ASA 3 and 4), have prevailed. However, in the 10-year period the number of the elderly patients undergoing operations for varicose disease increased constantly as well as the number of the old patients treated in DCS regimen (Fig. 1).

For patients treated as day cases, the mean waiting time for admittance was 5 weeks, with a range from 2 to 11 weeks. In 44 patients (44.9%), in addition to the first attendance for routine tests, more attendance (up to three maximum) for further diagnostic studies were required by the anaesthetist at the time of the preoperative evaluation. In 15 patients (15.31%), 3–5 weeks passed from the first attendances to the operation in order for the treatment with drugs of concurrent pathologies (seven patients with chronic bronchopneumonia; four compensations of diabetes mellitus; two patients with severe hypertension). For the elderly patients admitted for inpatient care the mean waiting time was 12 weeks and the mean stay in hospital was 6 days.

At the statistical analysis, no significant differences were found between the operations performed in the elderly and the younger patients in consequence of too high difference of the numbers (Table 1). However, in the elderly group there was a lower number of long (7.1% versus 15.9%) and below-knee (48.0% versus 56.9%) strippings of the great saphenous vein, and on the contrary a higher number of perforator vein sections (7.1% versus 1.4%), varices stab avulsions (10.2% versus 1.7%) and skin grafts for ulcers (8.2% versus 2.2%).

No complications occurred during the operations in the DCS regimen. Among the 214 patients over 65 years treated as inpatients, 12 were admitted from the day unit. In these patients, day discharge was not possible

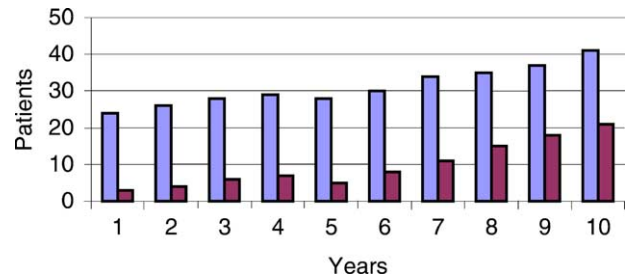


Fig. 1. Elderly patients operated on for varicose disease from January 1993 to December 2002 (first column: overall patients; second column: day cases).

and so the hospital stay was prolonged because of faintness on attempting to stand (four patients) or the onset of serious anxiety about discharge from hospital (eight patients). All these patients were discharged after 24 h.

Postoperative complications in the day-care patients were minimal, including only three groin wound infections (3.06%). No patients required readmission for general or local complications occurring at home during the postoperative period.

Among the 214 patients treated as inpatients, 29 patients were discharged the day after the operation, representing a further potential 13.6% for inclusion in the DCS regimen.

4. Discussion

At present, day surgery is growing exponentially in clinical practice. However, many still exclude elderly patients from this approach to treatment. Nevertheless, over the last few years, it has become clear that age itself does not represent a contraindication for DCS when good general health conditions are present [10].

Our 10-year experience seems to support the evidence that varicose veins surgery is feasible in elderly patients in the DCS regimen with excellent results. Of course, not all elderly patients are eligible for DCS. A careful evaluation of any concurrent diseases in these patients is essential prior to acceptance for day surgery. This influences the number of preoperative attendances necessary for the completion of diagnostics. In our experience, over 40% of the patients later enlisted in the DCS regimen needed, after their first attendance, further appointments before being considered operable as day cases. This affects the organisational model and implies both increased costs and the ability of patients to go to the medical facilities more than once.

Careful selection of patients permits excellent results [11]. The adoption of strict selection criteria has enabled us to have no postoperative re-admissions for general or local complications. These data confirm the results of Chung et al. that showed that in elderly patients

Table 2

Exclusion criteria from day surgery regimen in 214 patients over 65 years old undergoing operations for lower limbs varicose disease

Criteria	N (%)
General clinical criteria	132 (61.7)
Concurrent pathologies	94 (43.9)
Anxiety	38 (17.8)
Local clinical criteria	58 (27.1)
Extensive bilateral varices	31 (14.5)
Complex re-operation for recurrence	27 (12.6)
Logistic criteria	24 (11.2)
Unavailability of car	4 (1.9)
Unavailability of attending persons	12 (5.6)
Patient's house far from hospital	8 (3.7)

operated on as day cases the risks are above all intraoperative and are particularly related to cardiovascular complications and that elderly patients may have even less postoperative complications than younger patients [12].

In our experience, among the exclusion criteria for elderly patients from DCS is anxiety which had a 17.7% prevalence. The psychological condition of the older patient who has to undergo surgery is a balance between the wish of a short separation from their own family, environment and habits with a guarantee of better comfort and privacy—a wish that implies a willingness to shorten the hospital stay as much as possible—and the fear of being unwell far from hospital, particularly in case of complications. It is important that this conflict is taken into account both with the patient and with the persons who accompany the patient and attend them. The carers must be considered “reliable” for the postoperative home care of the patient and also be able to give the patient confidence [13].

Even with careful assessment, anxiety in eight patients necessitated inpatient hospital stay for the night after the operation. Wetchler affirmed that postoperative overnight stay causes a 10% increase in the patient satisfaction in any age group [14]. Mofidi et al. showed that the need of protracting hospital stay till the night following the operation for lower limb varicose disease is significantly related to the age of the patients [15]. It is therefore manifest that, in the absence of efficient home care, postoperative overnight stay (23 h surgery) could allow a reduction in the percentage of exclusions from the DS regimen particularly for elderly patients.

Continuous surgical and anaesthetic progress as well as the ever increasing knowledge about the pathophysiology of elderly people have allowed and allow elderly patients to undergo operations inconceivable some years ago. This progress is evident as hospital stays become shorter and shorter and allows an increase in DCS which is both cost effective and achieves high patient satisfaction levels. Our 10-year experience has clearly pointed out not only the feasibility but also the

excellent results attainable through good organisation for varicose vein surgery carried out in a day-care surgery regimen on elderly patients.

References

- [1] Beaglehole R. Epidemiology of varicose veins. *World J Surg* 1986;10:898–902.
- [2] Callam MJ. Epidemiology of varicose veins. *Br J Surg* 1994;81:167–73.
- [3] Komsuoglu B, Goldeli O, Kulan K, Cetinarlan B, Komsuoglu SS. Prevalence and risk factors of varicose veins in an elderly population. *Gerontology* 1994;40:25–31.
- [4] Canonico S, Gallo C, Paolisso G, Pacifico F, Signoriello G, Sciaudone G, et al. Prevalence of varicose veins in an Italian elderly population. *Angiology* 1998;49:129–35.
- [5] De Lathouwer J, Poullier P. Ambulatory surgery in 1994–1995: the state of the art in 29 OECD countries. *Ambul Surg* 1998;6:43–55.
- [6] Mastrobuono I. Chirurgia di giorno e chirurgia ambulatoriale. La classificazione delle attività chirurgiche. In: *CeRGAS—Università Bocconi “Strategie, modelli e percorsi per l’attuazione della Day Surgery nell’ambito delle regioni”*, vol. I; 1998. p. 5–19.
- [7] Bergan JJ. Discussion. *Vasc Surg* 1996;30:392–3.
- [8] Canonico S, Campitiello F, Pacifico F, Sepe D, Lauletta V. Day care surgery of varicose veins in elderly patients. *Vasc Surg* 1996;30:387–92.
- [9] Chung F. Discharge criteria—a new trend. *Can J Anaesth* 1995;42:1056–8.
- [10] Wallin E, Lundgren P, Ulander K, von Holstein CS. Does age, gender or educational background effect patient satisfaction with short stay surgery? *Ambul Surg* 2000;8:79–88.
- [11] Morales R, Esteve N, Casas I, Blanco C. Why are ambulatory surgical patients admitted to hospital? Prospective study. *Ambul Surg* 2001;9:197–205.
- [12] Chung F, Mezei G, Tong D. Adverse events in ambulatory surgery. A comparison between elderly and younger patients. *Can J Anaesth* 1999;46:309–21.
- [13] Miller KM, Wysocki T, Cassady JF, Cancel D, Izenmberg N. Validation of measures of parents’ preoperative anxiety and anesthesia knowledge. *Anesth Analg* 1999;88:251–7.
- [14] Wetchler BV. Patient focused management: cost versus value. *Ambul Surg* 2001;9:57–8.
- [15] Mofidi R, Bello AO, Mofidi A, Khan Z, Aly S, Joyce WP. Feasibility of day case varicose veins surgery in a district general hospital. *Ir J Med Sci* 2000;169:37–9.