

Ambulatory surgery for chronic venous insufficiency using radiofrequency thermoablation: quality and satisfaction

Cirugía ambulatoria de la insuficiencia venosa crónica mediante termoablación por radiofrecuencia: calidad y satisfacción

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Abstract

Background: Chronic venous disease is a frequent and prevalent pathology. Its surgical treatment has been shown to be cost-effective. Thermal endoablation performed as major outpatient surgery (MAS) is the technique of choice. **Objective:** To know the satisfaction of patients after MAS and the quality of care provided. **Method:** Observational, descriptive, cross-sectional study, carried out between January 2019 and March 2020. A survey was carried out on patients who underwent endovascular radiofrequency thermoablation in two hospitals in Spain, consisting of two questionnaires: one ad hoc and one another of satisfaction (SERCAL). Quality indices for MAS were measured. **Results:** We analyzed 156 episodes. 145 interventions were carried out. We found 4 (2.8%) unscheduled admissions. 3 patients (2.1%) attended the emergency department. There was a 99.3% success rate. 100% of the patients had pre-surgical recommendations and informed consent. We obtained 48 surveys (response rate: 33.1%). All the patients gave a rating greater ≥ 8 in quality of care ($x = 9.83$) and would recommend this procedure to their relatives ($x = 9.71$). **Conclusions:** Endovascular radiofrequency thermoablation performed in MAS has a high success rate and a very low rate of admission and visit to the emergency room. Patient satisfaction is high.

Keywords: Venous Insufficiency. Radiofrequency Ablation. Ambulatory Surgical Procedures. Saphenous Vein. Quality of Health Care. Patient Satisfaction.

Resumen

Antecedentes: La enfermedad venosa crónica es una patología frecuente y prevalente. Su tratamiento quirúrgico ha mostrado ser coste-efectivo. La endoablación térmica realizada como cirugía mayor ambulatoria (CMA) es la técnica de elección. **Objetivo:** Conocer la satisfacción de los pacientes tras CMA y la calidad de la atención brindada. **Método:** Estudio observacional, descriptivo y transversal, realizado entre enero de 2019 y marzo de 2020. Se realizó una encuesta a los pacientes intervenidos mediante termoablación endovascular por radiofrecuencia en dos hospitales de España, con dos cuestionarios: uno ad hoc y otro de satisfacción (SERCAL). Se midieron índices de calidad para CMA. **Resultados:** Analizamos 156 episodios. Se realizaron 145 intervenciones. Encontramos 4 (2.8%) ingresos no programados. Tres pacientes (2.1%) acudieron a urgencias. Hubo una tasa de éxito del 99.3%. El 100% de los pacientes contaban con recomendaciones prequirúrgicas y consentimiento informado. Obtuvimos 48 encuestas (índice de respuesta: 33.1%). Todos los pacientes otorgaron una calificación ≥ 8 en calidad de atención ($x = 9.83$) y recomendarían este procedimiento a sus familiares ($x = 9.71$).

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Conclusiones: La termoablación endovascular por radiofrecuencia realizada en CMA tiene una alta tasa de éxito y unas tasas de ingreso y visita a urgencias muy bajas. La satisfacción de los pacientes es elevada.

Palabras clave: Insuficiencia venosa. Ablación por radiofrecuencia. Procedimientos quirúrgicos ambulatorios. Vena safena. Calidad de cuidado de la salud. Satisfacción del paciente.

Introduction

Chronic venous disease is one of the most frequent and prevalent diseases in the human species, and we can state that, at least, one-fourth of adults present, to a greater or lesser extent, some symptoms of venous disease. Varicose veins are present in 25% to 30% of the adult female population in Western countries and in 10% to 40% of men¹.

Chronic venous disease has a significant socio-economic impact due to the high number of affected individuals, the cost of consultations and treatment, as well as the deterioration of quality of life due to incapacitating situations¹. For the treatment of varicose veins, surgery has been shown to be cost-effective compared to conservative management. Endoluminal surgical treatments generally offer less postoperative pain and faster recovery, being thermal endoablation the preferred technique^{1,2}.

Currently, surgical interventions for chronic venous disease are almost entirely performed on a major outpatient surgery (MOS) basis. Since its inception in the 1990s, there has been significant growth in the number of surgical procedures performed in this setting³. Its organizational model has demonstrated the capacity to guarantee high patient safety and satisfaction within a framework of clinical efficiency. Patient satisfaction is an essential goal of MOS. To achieve this, continuous monitoring of health care quality standards is necessary to detect the emergence of problems and introduce the necessary improvements to solve and prevent them^{3,4}.

This study aims to determine the overall satisfaction level of patients after outpatient surgery, identify the main deficiencies in care perceived by patients and physicians alike, and determine the level of quality in the care provided.

Method

This was an observational, descriptive, and cross-sectional study conducted from January 2019 through March 2020. A survey was conducted among all

patients undergoing MOS for chronic venous disease of the lower extremities in 2 hospitals from Madrid, Spain.

Informed consent was obtained from all participants. They were administered two questionnaires: one ad hoc, anonymous, and self-administered, consisting of 14 questions, and another validated for MOS satisfaction (SERCAL)⁵, also anonymous and self-administered.

Various quality indices for MOS were measured, including the cancellation (patients who do not attend) and suspension rates (patients who attend but are not operated on); the reintervention rate (patients who need to be reoperated within 48 hours); admission (unplanned admissions) and readmission rates (patients discharged and then readmitted); the ER visitation rate; the success rate; the outpatient rate (MOS patients vs overall patients); operating room performance (covered vs available operating rooms); the wound infection rate; the preoperative recommendation rate; the informed consent rate; completion of surgical checklists, and discharge reports.

All patients undergoing MOS for chronic venous insufficiency of the lower extremities in Quironsalud Ruber Juan Bravo 39 and Quironsalud San José hospitals (both based in Madrid, Spain), consecutively recruited, were included in the study if they had a CEAP (Clinical, Etiology, Anatomy, Pathophysiology) classification > C1 (presence of varicose veins affecting the superficial system). Patients who did not attend the first postoperative review after MOS were excluded from the study.

Data analysis was performed using the GNU-PSPP 1.4.0. program, with the level of statistical significance being set at $p < 0.05$. Absolute and relative frequencies were calculated for dichotomous and categorical variables, while mean and standard deviation (SD) were estimated for numerical variables. Cumulative percentages were also calculated, with cutoff points of 5 and 7. Bivariate analysis was conducted to identify possible differences using the chi-square test (qualitative variables) and Student's t-test and ANOVA (quantitative variables).

Results

A total of 156 episodes were analyzed from January 2019 through March 2020.

Quality

A total of 145 interventions (92.9%) were performed at the two participating centers (Quironsalud Ruber Juan Bravo 39, 69 procedures [44.2%]; Quironsalud San José, 87 procedures [55.8%]). There were 11 cancellations (7.1%) before the day of surgery ($p = 0.586$). No surgeries were suspended (0%) or required reinterventions (0%). No unplanned admissions (0%) or readmissions were reported.

Only 3 patients (2.1%) visited the ER, all cases due to minor bleeding associated with concomitant phlebectomies ($p = 0.686$). No cases of deep venous thrombosis or symptomatic pulmonary embolism were reported.

Only 1 case of therapeutic failure (0.7%) was reported, resulting in a success rate of 144/145 (99.3%) ($p = 0.266$). This single case was a thermal ablation of a perforating vein, which was later ligated and phlebectomized.

The outpatient rate was 97.2%, as 4 patients out of all the operated patients had to be admitted. In all cases, patients were admitted because they lived outside Madrid.

The rate of operating room performance was 92.9% due to 11 cancellations.

No procedural surgical wound infections were reported.

All patients had preoperative recommendations printed and informed consent properly completed.

Only 84 (57.9%) of the operated patients had surgical checklist sheets properly completed ($p = 0.216$), and 143/145 (98.6%) had a discharge report in their medical history ($p = 0.114$).

Satisfaction

A total of 48 correctly completed satisfaction surveys were obtained, resulting in a response rate of 48/145 (33.1%).

All patients reported knowing the name of the surgeon in charge of the intervention; however, only 50% indicated knowing the name of the nurse providing their care on the ward, which was a statistically significant difference ($p < 0.01$). A total of 95.2% of the

patients rated knowing the name of their surgeon as ≥ 8 ($x = 9.52$; SD, 0.89), which dropped down to 50% for the name of the nursing staff ($x = 8.08$; SD, 2.06), showing a statistically significant difference ($p = 0.005$).

Tables 1 and 2 show the responses regarding the length of stay.

Regarding pain relief, 45 patients (93.7%) rated it as ≥ 8 ($x = 9.35$; SD, 0.93).

For the information received about treatment following discharge, 47 patients (97.9%) rated it as ≥ 8 ($x = 9.56$; SD, 0.74). All patients (48; 100%) considered this aspect important (rating ≥ 8) ($x = 9.79$; SD, 0.41).

Table 3 shows the responses regarding nursing care, room quality, facility cleanliness, and quality and quantity of food offered.

All patients (48; 100%) rated the possibility of recommending the intervention to a family member as ≥ 8 ; 37 of these patients (77.1%) rated it as 10/10 ($x = 9.71$; SD, 0.59). Similarly, all patients (48; 100%) rated the quality of care received as ≥ 8 ; 41 of these patients (85.4%) rated it as 10/10 ($x = 9.83$; SD, 0.43).

For the ease of getting the first appointment, 43 patients (89.6%) did not find it difficult. 100% of the surveyed patients indicated that they did not have to wait long to access the appointment. Similarly, 45 patients (93.8%) reported being registered for consultation within less than 30 minutes. No patients found it difficult to undergo preoperative studies.

Table 4 shows the waiting times for patients for the first consultation, the time taken to be admitted to the MOS unit, and the waiting time in the room until reaching the operating room.

All patients thought they were properly treated by the health care personnel.

Table 5 shows the evaluation of the operating room experience, which was as expected in 23 patients (47.9%) and better than expected in 25 patients (52.1%).

Regarding postoperative pain, as shown in Table 6, 40 patients (83.3%) indicated not feeling any upon waking up from the surgery. While on the hospital ward, 29 patients (60.4%) reported not feeling any pain, 13 patients (27.1%) reported feeling less pain than expected, 5 patients (10.4%) reported feeling the expected amount of pain, and only 1 patient (2.1%) reported feeling more pain than expected. Within the first few days after the intervention, 19 patients (39.6%) reported not having felt any pain, 14 patients (29.2%) reported having felt less pain than expected, and 15 patients (31.3%) reported having felt the expected amount of pain. Patients who experienced less pain

Table 1. Responses given about length of stay, explanation about length of stay, and match between the explanation given and the experience during such stay

	Yes (%)	No (%)
Considers length of stay adequate	48 (100)	0 (0)
Received an explanation about length of stay	37 (77.1)	11 (22.9)
Explanation given matches experience	42 (87.5)	6 (12.5)

Table 2. Rating given to length of stay, explanation given about admission, and match between the explanation given and the experience during such stay

	x (SD)	≤ 5 (%)	6-7 (%)	≥ 8 (%)
Rating given to length of stay	9.25 (1.04)	1 (2.1)	1 (2.1)	46 (95.8)
Rating given to explanation about length of stay	9.44 (0.77)	0 (0)	0 (0)	48 (100)
Rating given to matching explanation with experience	9.38 (0.76)	0 (0)	1 (2.1)	47 (97.9)

SD: standard deviation; x: mean.

Table 3. Responses regarding nursing care, room quality, cleanliness of facilities, and quality and quantity of food

	x (SD)	≤ 5 (%)	6-7 (%)	≥ 8 (%)
Nursing care	9.19 (1.41)	2 (4.2)	0 (0)	46 (95.8)
Rating for care provided by nursing	9.35 (1.06)	1 (2.1)	0 (0)	47 (97.1)
Room rating	9.38 (0.91)	0 (0)	2 (4.2)	46 (95.8)
Rating for room comfort and convenience	9.42 (0.85)	0 (0)	2 (4.2)	46 (95.8)
Cleanliness rating	9.50 (1.03)	1 (2.1)	0 (0)	47 (97.9)
Rating for cleanliness	9.56 (1.01)	1 (2.1)	0 (0)	47 (97.9)
Food rating	9.15 (1.05)	0 (0)	3 (6.3)	45 (93.7)
Rating for food quality and quantity	9.19 (1.42)	1 (2.1)	0 (0)	47 (97.9)

in the foot stated they felt less pain upon waking up ($p = 0.003$). Similarly, those patients who did not experience pain in the foot also felt less postoperative pain at home ($p < 0.001$).

A total of 46 patients (95.8%) indicated receiving all the desired information about the procedure at discharge, and 45 patients (93.8%) reported knowing how to contact the medical team in case they needed something.

Table 4. Waiting times at different stages of patient care

	< 30 min (%)	30-60 min (%)	> 60 min (%)
Waiting time for first appointment registration	45 (93.8)	3 (6.3)	0 (0)
Waiting time for admission	34 (70.8)	13 (27.1)	1 (2.1)
Waiting time in room prior to surgery	11 (22.9)	17 (35.4)	20 (41.7)

Table 5. Overall experience assessment

	Worse than expected (%)	As expected (%)	Better than expected (%)
Overall experience	0 (0)	23 (47.9)	25 (52.1)

Discussion

The rate of procedural success is close to 100%, which is similar to what has been described in other studies involving radiofrequency thermal ablation of saphenous veins. The rates of admission and ER visit are < 3%, which falls within ranges similar to those described in other studies^{6,7}.

The rate of compliance filling out the surgical checklist is < 60%, indicating an area with margin for improvement regarding quality and, above all, patient safety. Although safety was not the focus of this work, the findings can serve as a good incentive to achieve the highest patient safety standards possible.

The survey response rate was 33.1%, which may be considered low but falls within the usual response range in satisfaction studies using opinion surveys⁸. Perhaps for future reviews of our activity, surveys in the waiting room during the index follow-up visit should be handed out to improve the rates of response, since most uncompleted surveys may be due to patient and surgeon forgetfulness.

Significant differences are found regarding the number of patients who know and remember the name of their surgeon vs the number of patients who know and remember the name of the nursing staff who treated them during their admission. There are also significant differences regarding the importance given by the patients to these items. In the private health care model where patients choose their surgical team, it is normal for them to know their surgeon's name

Table 6. Postoperative pain assessment

	No pain (%)	Less than expected (%)	What I expected (%)	More than expected (%)
Pain at the hospital ward	29 (60.4)	13 (27.1)	5 (10.4)	1 (2.1)
Postoperative pain	19 (39.6)	14 (29.2)	15 (31.3)	0 (0)

perfectly well, and we believe this should, actually, be the case. However, we also find it very important, for an optimal surgical process experience, that patients feel treated by their nurse in a more personal way, as the company's motto states: "Health person to person." Although MOS patients spend very little time hospitalized, we believe there is room for improvement regarding the ward staff.

The items with the highest ratings were "value given to information about health care services," with 100% of ratings ≥ 8 , and "value given to being adequately informed about their treatment," with 100% of ratings ≥ 8 . This underscores the importance of information and the doctor-patient personal relationship, both in preoperative consultations and at discharge. This information should be clear, easy to understand, and always given in print. Other tools that can help improve communication are online videos and blogs, where patients can find recommendations from their doctors and nurses whenever they want and thus resolve their doubts quickly.

Other aspects that patients consider very important are "value given to the plan matching what was, actually, done" (97.9%) and "value given to the treatment provided by the nurse" (97.9%). The ratings given by patients to the cleanliness of the facilities and the quality of the food after the procedure were ≥ 8 from 97.9% of respondents.

The loyalty found through this survey is excellent, as all patients would recommend this procedure to their family members ($x = 9.71$). The satisfaction levels found are also excellent, as 100% of patients rated the quality of care received as ≥ 8 ($x = 9.83$), which may be related to the amount of information patients receive in print, explanations given by health professionals on what is being done and will be done to them, the treatment they receive in the operating room, postoperative and outpatient follow-up by the same health professionals performing the surgery, the technical expertise and kindness of the MOS unit members, or the characteristics of this type of surgery, which allow same-day discharges.

Although it seems that the process of treating varicose veins in our centers is well established and consolidated with good results, we believe that these types of studies foster the detection of areas with room for improvement in health care and a culture of quality that drives improvement in our not always straightforward daily lives as medical professionals.

Conclusions

Radiofrequency thermal ablation of saphenous veins performed in the MOS modality is a procedure associated with a high rate of technical success.

The satisfaction of patients treated with radiofrequency thermal ablation of saphenous veins is very high. One hundred percent of respondents recommend undergoing this procedure in the MOS modality to a family member.

There is room for improvement in such an important area as patient safety, as well as in the postoperative experience on the ward for our patients undergoing varicose vein surgery.

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Conflicts of interest

None declared.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The

corresponding author is in possession of this document.

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