

Evaluation of severity and clinical course of varicose vein treatment in patients treated with radio frequency

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Abstract

One of the most common venous diseases is a varicose vein which leads to several complications. The present study aimed to evaluate patient satisfaction and factors which effect on it after radiofrequency ablation and sclerotherapy. The patients were evaluated by clinical examination and using the questionnaire based on Venous Clinical Severity Score (VCSS) at least one year after the procedure. The study population included 429 patients (181 females and 248 male), who were evaluated in terms of the effective and ineffective factors on patient satisfaction after radiofrequency ablation and sclerotherapy. According to the maximum score of VCSS (30 points), the overall satisfaction level of patients was 25.6 ± 1.4 . Factors such as severity of varicose veins, overweight (high BMI), older age, chronic disease, and male gender decreased the level of patient satisfaction. Factors such as the affected side and varicose location (great or lesser saphenous vein) did not affect the level of patient satisfaction. According to the results of the present study, it can be concluded that performing radiofrequency ablation and concomitant foam sclerotherapy has acceptable results in term of patient satisfaction.

Keywords: Radiofrequency Ablation, Venous varicose disease

Introduction

One of the most common vascular diseases in humans is lower extremity varicose veins, which can lead to a wide spectrum of symptoms and signs in patients and surgical treatments in some cases [1]. Studies conducted on the prevalence of varicose veins in different populations showed that the prevalence of this disease is more common in European countries than African-Asian societies [2]. Some of the consequences of varicose veins include an unpleasant appearance in the legs, leg tiredness, leg heaviness, clot formation in the varicose veins, pulmonary embolism, and deep vein thrombosis [3]. In the past, both surgical and medical therapies were considered standard and successful treatments [4]. In recent decades, various methods such as sclerotherapy, RFA,

and endovenous laser ablation have been used for the treatment of varicose veins by closing the superficial veins[5]. Several studies have been conducted on anatomical assessments and saphenous vein flow rate. However, few studies have been conducted on the level of patient satisfaction. The present study aimed to evaluate the level of satisfaction of patients treated with radiofrequency ablation and concomitant foam sclerotherapy.

Materials and Methods

The study population of the present research included 429 patients (181 females and 248 male) who were referred to the vascular subspecialty clinic of Razi Hospital in Rasht, North of Iran, and were undergoing radiofrequency ablation and concomitant foam

sclerotherapy. These patients were evaluated by clinical examination and using the questionnaire based on VCSS criteria at least one year after the procedure. Demographic information of patients and their level of satisfaction were recorded based on VCSS. All 10 components of the VCSS including pain, varicose veins, venous edema, skin pigmentation, inflammation, induration, number of active ulcers, ulcer duration, size of the active ulcer, the use of compression device), each of which is scored from 0 to 3 (maximum score 30) were presented in Table 1. In the present study, the level of patient satisfaction was evaluated these scores after radiofrequency ablation and concomitant foam sclerotherapy. A higher score indicated more satisfaction and a lower score indicated less satisfaction. This patient satisfaction-based scoring is the opposite of VCSS. A higher VCSS score after RFA and concomitant foam sclerotherapy indicates better clinical conditions of varicose veins and an improvement in the condition of the patients. The effective factors on patient satisfaction after radiofrequency ablation and sclerotherapy were determined using the Venous Clinical Severity scoring. The content validity method was used as the validity of the research tools. Content validity was used as a validation tool. The content of the questionnaire was confirmed in terms of the field experience, simplicity, clarity, and thematic relevance. The reliability of the questionnaire was 0.83, which was obtained using the Cronbach alpha test method.

Results

The study population included 429 patients (57.8% male and 42.2% female) with a maximum age ranging from 41 to 50 years. Most of the patients have a BMI in the obesity range (66.98%). Most of them had no history of any special disease except high blood pressure. The great saphenous vein was more involved than other veins (92.54%) and in most cases, the left side was involved (55%). The demographic characteristics of the patients were presented in Table 2. Most of the studied female patients (92.25) were satisfied with the results, which was significantly more than male patients. The highest level of satisfaction was related to the age group of 41 to 50 years (P -value=0.001).

The level of satisfaction in patients with different BMI was evaluated. The results showed that the patients with obesity type 1 and the patients with

normal BMI had the highest and lowest satisfaction level, respectively.

According to Table 3, factors such as an increase in CEAP, sonographic recanalization, duration of varicose before treatment, chronic disease, higher BMI, male gender, and age decreased the patient satisfaction level ($P < 0.001$). The location of the varicose veins (GSV or LSV) and the side of the affected limb did not affect the level of satisfaction of the patients (P -value: 0.094).

Discussion

Several studies have reported that the endovascular treatment of varicose veins has the highest effectiveness compared to interventional surgeries. Among endovascular treatments, RFA has several advantages, including less pain, fewer complications, shorter hospital stays, and faster recovery. RFA is an invasive method with primary potential benefits such as avoiding a groin incision and GSV stripping [6]. In the present study, VCSS, a standard scoring model, was used to evaluate the level of satisfaction of patients. In this scoring method, the level of satisfaction is considered in the form of the patient's willingness to recommend this intervention to a friend or family member. This would be more appropriate if a point system or specific evaluation criteria were added. The average duration of illness and the average age of patients in men were lower and higher than in women, respectively. Therefore, the mean of VCSS in men was somewhat lower than in women. In the present study, the mean of VCSS in older people had a downward trend, which indicates a higher severity level of the disease in the elderly, especially over 50 years old. Another factor evaluated in the present study was the role of BMI in the level of satisfaction of patients after treatment. The results of the present study showed that increasing the BMI leads to a decrease in patient satisfaction. Merchant et al (2005) reported that the level of satisfaction of patients with an underlying disease is low [7]. Therefore, they suggested that the underlying disease should be controlled as much as possible before starting the treatment in people with the underlying disease to minimize or prevent the negative effects of the treatment period. The results of the present research indicated that the results of treatment in patients with affected great and lesser saphenous veins are almost the same. Also, the results of the present

study indicated that for better effectiveness of treatment in patients with underlying diseases, treatment should be started earlier. There was a positive relationship between the lack of recurrence and the level of satisfaction of patients after treatment. Therefore, the patients without recurrence had the highest satisfaction level. Thus, it is suggested to use additional treatments in addition to RFA in patients with recurrence. Previous studies have reported these favorable findings after RFA [8]. The results of the present research showed that people who have already undergone surgery for varicose veins two times and are currently undergoing RFA treatment had a lower satisfaction level. Therefore, it can be concluded that repeated surgery for the treatment of varicose veins can be associated with less satisfaction after the treatment.

The results of sonographic assessments and the satisfaction level of patients showed that radiofrequency ablation and concomitant foam sclerotherapy improve the varicose veins and are also suitable methods for treating patients with varicose veins caused by great or lesser saphenous venous reflux.

Acknowledgment

The authors wish to thank the Razi Clinical Research Development Unit of Guilan University of Medical Sciences for their technical support

Author contribution

All authors contributed to data analysis, drafting or revising the article, finalizing the version to be published, and agreed to be accountable for all aspects of the work.

Conflict of Interest

The authors report no conflicts of interest in this work.

Ethical declaration

The study was approved by the Ethics Committee of the Guilan University of Medical Sciences (ethical code: IR.GUMS.REC.1400.1215) and was performed according to the Helsinki's declaration.

Funding source

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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