



УДК 616.14-007.64, 616.14-07

DOI 10.17802/2306-1278-2026-15-3-246-249

## КОМПЛЕКСНОЕ ПРИМЕНЕНИЕ ДАННЫХ ОТ ПАЦИЕНТОВ И ФУНКЦИОНАЛЬНОГО ТЕСТИРОВАНИЯ ДЛЯ ОЦЕНКИ ВАРИКОЗА: КЛИНИЧЕСКОЕ НАБЛЮДЕНИЕ

Н. Кашьяп<sup>1,2</sup>, А. Нагарвал<sup>1</sup>, А.К. Сахаран<sup>1</sup>, Н. Вьяс<sup>3</sup><sup>1</sup> Университет НИМС в Раджастане, Джайпур, Раджастанхан, Индия; <sup>2</sup> Университет Галготиас, Большая Нойда, Уттар-Прадеш, Индия; <sup>3</sup> Университет УЭМ, Джайпур, Раджастанхан, Индия

### Основные положения

- Данный клинический случай подчёркивает необходимость использования опросников, направленных на выявление функциональных ограничений при хронических заболеваниях вен.
- Выявлено, что в клинической практике значимость функциональных тестов недооценивается.
- Подчеркивается необходимость разработки и использования большего числа шкал и критериев, направленных на оценку функциональных нарушений, а не косметических аспектов.

### Резюме

**Актуальность.** Варикозное расширение вен – хроническое венозное заболевание, которым страдают до 40% взрослого населения. Хотя анатомическим и косметическим аспектам уделяется значительное внимание, функциональные ограничения и вопросы качества жизни освещаются недостаточно полно.

**Цель.** Оценить функциональные нарушения у пациента с варикозным расширением вен с использованием валидированных инструментов диагностики.

**Описание клинического случая.** Пациентка 49 лет обратилась с жалобами на ночные судороги в ногах, тяжесть в конечностях, периодическое жжение в правой боковой области голени; из-за симптомов она не могла выполнять повседневные дела. Подтвердила наличие варикозного расширения вен, диагностированного 8 лет назад. При клиническом осмотре пациентка была классифицирована как CEAP C3; дуплексное ультразвуковое сканирование также подтвердило рефлюкс в большой подкожной вене продолжительностью более 2 секунд. Функциональная оценка включала опросники CIVIQ 14, VEINES QoL/Sym и тест шестиминутной ходьбы (6 ТШХ). Результаты показали умеренные нарушения функциональной подвижности, психосоциального благополучия и выносливости при ходьбе: дистанция в тесте 6 ТШХ составила 340 м, что ниже возрастных нормативных значений.

**Лечение и результаты.** Пациентке было рекомендовано как можно скорее начать физиотерапию, включающую компрессионную терапию, специальные упражнения и режим повышения подвижности. После начала физиотерапии симптомы значительно улучшились, что выразилось в уменьшении тяжести в ногах, исчезновении ощущения жжения и улучшении результатов теста 6 ТШХ при контрольном обследовании через 3 месяца.

**Обсуждение.** Данный случай показывает, что функциональное воздействие варикозного расширения вен выходит за рамки косметической проблемы. Данные, сообщаемые пациентами и тестирование подвижности (объективные тесты ходьбы) дополняют информацию, полученную при клиническом обследовании и визуализации, позволяя комплексно оценить бремя заболевания. Внедрение подобных оценочных шкал в рамках рутинных обследований может способствовать персонализации терапии и индивидуальному подходу к ведению пациентов.

### Ключевые слова

Варикозное расширение вен • Функциональные ограничения • Качество жизни

Поступила в редакцию: 17.09.2025; поступила после доработки: 04.10.2025; принята к печати: 10.10.2025

## INTEGRATING PATIENT-REPORTED OUTCOMES AND FUNCTIONAL TESTING IN VARICOSE VEIN EVALUATION: A CASE STUDY

N. Kashyap<sup>1,2</sup>, A. Nagarwal<sup>1</sup>, A.K. Saharan<sup>1</sup>, N. Vyas<sup>3</sup>

<sup>1</sup> NIMS University Rajasthan, Jaipur, Rajasthan, India; <sup>2</sup> Galgotias University, Greater Noida, Uttar Pradesh, India; <sup>3</sup> UEM University, Jaipur, Rajasthan, India

### Highlights

- This case highlights the need for questionnaires targeting functional limitations in chronic venous disorders.
- This case shows the gap in assessment; the functional tests are often under-evaluated.
- This article highlights the need for more scores and scales evaluating functional concerns rather than cosmetic.

### Abstract

**Background.** Varicose veins (VV), being a chronic venous disorder, affect up to 40% adult population. While considerable attention has been given to anatomical and cosmetic concerns, functional limitations and quality of life issues remain underreported.

**Aim.** To evaluate functional impairments in a patient with VV using validated tools available for assessment.

**Case Presentation.** A 49-year-old female presented with nocturnal leg cramps, limb heaviness, occasional burning in the right lateral leg, and was unable to do her chores. She confirmed a history of VV diagnosed 8 years ago. During the clinical examination, she was classified as CEAP C3, and duplex ultrasound also confirmed reflux in the great saphenous vein lasting more than 2 seconds. Functional assessment included the CIVIQ-14, VEINES-QoL/Sym, and 6-minute walk test (6MWT). Scores suggested moderate impairment in functional mobility, psychosocial well-being, and walking endurance, with a 6MWT distance of 340 m, which is below age-expected values.

**Management and Outcome.** The patient was advised to start physiotherapy as soon as possible, including compression therapy, exercises, and a mobility regimen. Following initiation of physiotherapy, her symptoms improved considerably, reflected in reduced heaviness, loss of burning sensation and improved 6MWT performance at follow-up after 3 months.

**Discussion.** This case illustrates that the functional impact of VV is more than a cosmetic concern. Patient-reported outcome measures and mobility testing (objective walking tests) supplement the information provided by clinical and imaging data, enabling a comprehensive understanding of disease burden. Implementation of such scoring systems as a part of routine assessments could help in personalized therapy and patient-tailored care.

### Keywords

Varicose veins • Functional limitations • Quality of life

*Received: 06.09.2025; received in revised form: 15.10.2025; accepted: 16.11.2025*

### Список сокращений

6MWT – 6-minute walk test VV – varicose vein

### Introduction

The ramified, superficially protruding veins that are felt while palpating the skin are hallmarks of varicose veins (VV) to 3 mm in diameter [1]. More commonly located in the calf or thigh, a varicocele is a result of an incompetent vein wall and valve. Continued gravity, combined with a lack of physical activity (such as prolonged standing), leads to further enlargement and an increase in the severity

of symptoms, including pain, cramps, ulceration, leg fatigue, and skin discoloration [2, 3].

Numerous articles are available to test the symptoms and burden of VV on patients' quality of life and disease severity, but little work has been done on patients' functional independence and limitations, so, to figure that out, this case study was taken up to see if available validated questionnaires can gauge functional limitation. Patient-reported outcome measurements

(PROMs) such as the Chronic Venous Insufficiency Questionnaire (CIVIQ-14/20) and VEINES-QoL/Sym have become important instruments for the assessment of these impairments. Also, performance-based measures such as the 6-Minute Walk Test (6MWT) provide objective information regarding mobility restriction in cardiovascular diseases. This clinical report describes how investigating functional limitations in the lower extremities of a symptomatic VV patient can be used as part of clinical practice to demonstrate the clinical utility of the combination of PROMs, functional testing, and CEAP classification.

A 49-year-old female dentist presented to the Outpatient Department with chief complaints of heaviness in both legs, nocturnal cramps, occasional burning in the right lateral leg, swelling, and inability to carry out her professional commitments. She gave a positive history of VV, diagnosed 8 years ago. She also confessed that her Outpatient Department schedule requires her to stand for more than 7 hours per day.

On clinical examination, we identified visible tortuous veins alongside the great saphenous vein artery, oedema at the malleoli and she indicated that this becomes worse in the evenings. She had duplex scanning showing great saphenous vein incompetence with reflux > 2 seconds, CEAP C3 (Oedema), Ep (Primary), As (Superficial veins), Pr (Reflux). She achieved 44/100 on the CIVIQ-14, showing moderate limitations for walking (> 500m) and climbing stairs in the physical field (Table). Psychosocially, she was concerned about her body image and irritability in manner. In the pain area, she experienced a daily deep and heavy ache. VEINES QoL/Sym scales showed significant impairment of occupation and social life; heaviness, swelling, and cramps had high frequencies. She walked 270 meters compared with the normal for her age (500 to 700 m).

This case study illustrates that VV, though often canned as a cosmetic concern, have the capacity to impair functional capacity and quality of life

significantly. The patient presentation and results of CIVIC-14 and VEINES-QoL/Sym are consistent with the findings as reported by Launois et al (2012) [4] and Robert Launois (2015) [5] wherein these tools are validated as reliable indicators of assessing disease impact on various domains. Reduced 6MWT aligns with Ozberk S [6] (2019), who reported that lower limb performance has a significant correlation with walking distance and is an important predictor of exercise capacity, which again is a major determinant of morbidity [7]. Although Duplex ultrasound confirmed the anatomical basis of reflux, importantly, it is the Passive range of motion and functional tests that highlight the daily burden patient. Owing to fewer complications, pain relief, and faster return to work, people generally opt for endovascular treatment options as compared to conventional therapies [8–11], which clearly shows that patients prioritize being functionally able over cosmetic concerns.

This case highlights the restrictions of relying exclusively on patient-reported outcome measures (PROMs) such as CIVIQ-14 and VEINES-QoL/Sym. Although these tools are validated and useful for evaluating symptom severity, emotional well-being, and social participation, they fall short in quantifying functional limitations like walking endurance, mobility restriction, and occupational productivity. For instance, the patient’s questionnaire scores advocated moderate impairment, but the 6MWT revealed a 20% reduction in exercise tolerance compared to age-matched norms—an aspect not captured by questionnaires alone. Functional limitations are clinically relevant because they directly affect a patient’s ability to perform daily tasks, maintain employment, and adhere to long-term management strategies. Failure to document these limitations risks underestimating disease burden and may delay or misdirect treatment options. Incorporating objective measures such as 6MWT, gait analysis, or activity monitoring can therefore complement existing quality-of-life tools, leading to a more comprehensive, patient-centered approach. This case demonstrates the need for a dual approach: combining disease-specific PROMs with standardized functional assessments. Such integration can equip clinicians and researchers with a more accurate representation of disease impact, ensuring tailored interventions.

**Conflict of interests**

N. Kashyap declares no conflict of interest. D. Nagarwal declares no conflict of interest. D.K. Saharan declares no conflict of interest. N. Vyas declares no conflict of interest.

**Financing**

The authors claim no funding for the study.

Multi-modal assessment findings		
Assessment Tool	Score/Outcome	Interpretation
CEAP classification	C3, Ep, As, Pr	Moderate cardiovascular diseases with edema
Duplex ultrasound	GSV reflux > 2 sec	Anatomical severity confirmed
CIVIQ-14	44/100	Moderate quality of life impairment
VEINES-QoL/Sym	Frequent symptoms, low quality of life	Symptom burden significant
6MWT Distance	340 m	Reduced mobility (~20% below normal)

*Note: 6MWT – 6-minute walk test; CEAP – Clinical, Etiological, Anatomical, and Pathophysiological.*

### Author Information Form

*Kashyap N.*, PhD Scholar, NIMS College of Physiotherapy and Occupational Therapy, NIMS University Rajasthan, Jaipur, Rajasthan, India; Assistant Professor, SAHS, Galgotias University, Greater Noida, Uttar Pradesh, India; **ORCID** 0000-0001-8323-3659

*Nagarwal A.*, Associate Professor, Department of Cardiology, NIMS Hospital, NIMS University Rajasthan, Jaipur, Rajasthan, India; **ORCID** 0000-0002-4127-3326

*Saharan A.K.*, Principal, NIMS College of Physiotherapy and Occupational Therapy, NIMS University Rajasthan, Jaipur, Rajasthan, India; **ORCID** 0000-0003-4807-8715

*Vyas N.*, Associate Professor, School of Physiotherapy, University of Engineering & Management, Jaipur, Rajasthan, India; **ORCID** 0000-0002-7159-5000

### Author Contribution Statement

*KN* – contribution to the concept and design of the study, data analysis, manuscript writing, editing, approval of the final version, fully responsible for the content

*NA* – contribution to the concept and design of the study, data analysis, manuscript writing, editing, approval of the final version, fully responsible for the content

*SAK* – contribution to the concept and design of the study, data analysis, manuscript writing, editing, approval of the final version, fully responsible for the content

*VN* – contribution to the concept and design of the study, data analysis, manuscript writing, editing, approval of the final version, fully responsible for the content

### СПИСОК ЛИТЕРАТУРЫ / REFERENCES

- Nash R. ABC of arterial and venous disease. Varicose Veins. *BMJ* 2000;320:1391-4.
- Youn YJ, Lee J. Chronic venous insufficiency and varicose veins of the lower extremities. *Korean J Intern Med.* 2019 Mar;34(2):269-283.
- Yetkin E, Kutlu Karadag M, Ileri M, Atak R, Erdil N, Tekin G, Ozyasar M, Ozturk S. Venous leg symptoms, ecchymosis, and coldness in patients with peripheral varicose vein: A multicenter assessment and validation study (VEIN-VIOLET study). *Vascular.* 2021 Oct;29(5):767-775.
- Launois R, Le Moine JG, Lozano FS, Mansilha A. Construction and international validation of CIVIQ-14 (a short form of CIVIQ-20), a new questionnaire with a stable factorial structure. *Qual Life Res.* 2012 Aug;21(6):1051-8. doi: 10.1007/s11136-011-0008-3. Epub 2011 Sep 25. PMID: 21947689.
- Robert Launois, Health-related quality-of-life scales specific for chronic venous disorders of the lower limbs, *Journal of Vascular Surgery and venous lymphatic disorders*, Volume 3, Issue 2p219-227.e3 April 2015
- Ozberk S, Karadibak D, Polat M. Predictors of exercise capacity in chronic venous disease patients. *Phlebology.* 2019;35(3):190-198. doi:10.1177/0268355519870895
- Papathanasiou J et al, Six-minute walk test: A tool for assessing mobility in frail subjects, *Journal of Frailty, Sarcopenia and Falls, FSF | December 2016 | Vol. 1, No. 4 | 73-76.*
- M.A. Anwar, T.R. Lane, A.H. Davies, I.J. Franklin, Complications of radiofrequency ablation of varicose veins, *Phlebology*, 27 (Suppl. 1) (2012), pp. 34-39
- A. Puggioni, M. Kalra, M. Carmo, G. Mozes, P. Gloviczki, Endovenous laser therapy and radiofrequency ablation of the great saphenous vein: analysis of early efficacy and complications, *J Vasc Surg.* 42 (2005), pp. 488-493
- R.J. Winterborn, C.R. Corbett, Treatment of varicose veins: the present and the future—a questionnaire survey, *Ann R Coll Surg Engl*, 90 (2008), pp. 561-564
- Jin HY, Ohe HJ, Hwang JK, Kim SD, Kim JY, Park SC, Kim JI, Won YS, Yun SS, Moon IS. Radiofrequency ablation of varicose veins improves venous clinical severity score despite failure of complete closure of the saphenous vein after 1 year. *Asian J Surg.* 2017 Jan;40(1):48-54. doi: 10.1016/j.asjsur.2016.03.004. Epub 2016 Jul 1. PMID: 27378121.

**Для цитирования:** Кашьяп Н., Нагарвал А., Сахаран А.К., Вьяс Н. Комплексное применение данных от пациентов и функционального тестирования для оценки варикоза: клиническое наблюдение. *Комплексные проблемы сердечно-сосудистых заболеваний.* 2026;15(3): 246-249. DOI: 10.17802/2306-1278-2026-15-3-246-249

**To cite:** Kashyap N., Nagarwal A., Saharan A.K., Vyas N. Integrating patient-reported outcomes and functional testing in varicose vein evaluation: a case study. *Complex Issues of Cardiovascular Diseases.* 2026;15(3): 246-249. DOI: 10.17802/2306-1278-2026-15-3-246-249