

Clinical presentation of women with pelvic source varicose veins in the perineum as a first step in the development of a disease-specific patient assessment tool



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ABSTRACT

Objective: Pelvic venous incompetence can cause symptomatic varicose veins in the perineum, buttock, and thigh. Presentation, symptom severity, and response to treatment of pelvic source varicose veins are not well defined. Currently available tools to measure the severity of lower extremity venous disease and its effects on quality of life may be inadequate to assess disease severity in these patients. The purpose of this study was to evaluate the histories, demographics, and clinical presentations of women with pelvic source varicose veins and to compare these data to a population of women with nonpelvic source varicose veins.

Methods: A total of 72 female patients with symptomatic pelvic source varicose veins were prospectively followed up. Age, weight, height, parity, and birth weights of offspring were recorded. Both pelvic source varicose veins and saphenous incompetence were identified by duplex ultrasound. Patients were queried as to their primary symptoms, activities that made their symptoms worse, and time when their symptoms were most prominent. Severity of disease was objectively evaluated using the revised Venous Clinical Severity Score (rVCSS) and 10-point numeric pain rating scale (NPRS).

Results: Compared with women without a pelvic source of varicose veins ($N = 1163$), patients with pelvic source varicose veins were younger (mean, 44.6 ± 8.6 vs 52.6 ± 12.9 years; $P < .001$), had lower body mass index (mean, 21.9 ± 2.8 vs 25.8 ± 6.2 ; $P < .001$), and had larger babies than the U.S. population mean (mean, 3656 ± 450 g vs 3389 ± 466 g; $P < .001$). The most common symptoms were aching (68%), throbbing (47%), and heaviness (35%). In premenopausal patients, 70% noted that symptoms were worst during menses. NPRS score varied from 0 to 8 (mean, 4.9). The correlation between rVCSS (mean 5.6 ± 1.9) and NPRS was small ($r = 0.26$; $P = .03$). There was a modest correlation between older age and lower NPRS scores ($r = -0.39$; $P < .001$).

Conclusions: Women with pelvic source varicose veins are a unique subset of patients. They are younger and thinner than those with nonpelvic source varicose veins, have larger infants than the general U.S. population, and have an inverse correlation between age and pain. As the majority of premenopausal patients have increased symptoms during menses, this may be due to hormonal influence. As it is poorly associated with patient-reported discomfort, the rVCSS is a poor tool for evaluating pelvic source varicose veins. A disease-specific tool for the evaluation of pelvic source varicose veins is critically needed, and this study is a first step in that endeavor. (J Vasc Surg: Venous and Lym Dis 2017;5:493-9.)

Varicose veins in the lower extremity are common in the general population, and the presenting symptoms of patients with chronic venous disease are well described.¹ Although lower extremity varicose veins most commonly arise from the saphenous trunks and

their tributaries, up to 10% of lower extremity venous reflux arises from other sources, particularly from the pelvic veins in women. Pelvic venous incompetence can cause symptomatic varicose veins in the perineum/vulva, buttocks, and thigh (most commonly medial to the great saphenous vein [GSV]). Pelvic venous incompetence originates in ovarian and internal iliac veins. The obturator, pudendal, and gluteal veins are the usual pelvic “escape” points from the pelvis that can lead to perineal and vulvar varicosities.^{2,3} In addition, through communications with the saphenofemoral junction below the terminal valve, pelvic venous incompetence may also be associated with varicose veins in a typical GSV distribution.

A number of descriptive tools have been used to quantify the severity of lower extremity varicose veins as well as to measure their impact on the patient’s quality of life. The most widely used physician-derived measure of the severity of lower extremity veins is the revised Venous

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Clinical Severity Score (rVCSS).⁴ There are a number of well-validated quality of life instruments that are designed to quantify the impact of lower extremity venous disease on a patient's well-being. These instruments can be used to evaluate changes in the patient's status with various treatments.⁵⁻⁷

In contrast to our understanding of lower extremity superficial venous disease, the presentation, symptom severity, and response to treatment of pelvic source varicose veins are not well defined. Currently available disease-specific tools, including both clinician-observed and patient-reported instruments, have not been validated and may not be applicable to patients with pelvic source varicose veins. The purpose of this study was to evaluate the histories, demographics, and clinical presentations of women with perineal/vulvar varicose veins and to compare these data to a population of women with nonpelvic source lower extremity varicose veins.

METHODS

Female patients presenting to a single private vascular surgery practice between July 1, 2012, and December 31, 2013, with symptomatic perineal and vulvar varicose veins were prospectively followed up. Some patients were self-referred, whereas others were referred from a variety of sources including primary care physicians and gynecologist/obstetricians. The protocol was reviewed by the University of Washington Institutional Review Board and approved, and consent of the patients was determined not to be required. To be evaluated, the veins had to be symptomatic and those symptoms considered to be problematic to the patient (and not just of cosmetic concern). Data collected included the patient's age, weight, height, history of hemorrhoids, and number of births and the birth weights of offspring (if available). We also recorded if any of the infants were born before 37 weeks of gestation and whether any of the infants were twins or triplets.

The diagnosis of vulvar and perineal varicose veins was made by a combination of physical examination (visualization of abnormal veins) and duplex ultrasound. Duplex ultrasound was performed on all patients to confirm a pelvic source for the varicose veins and to assess for saphenous incompetence, including the presence of terminal valve incompetence. All patients were examined in the standing position, and varicose veins of the inner or posterior thigh and vulva were visually identified. After the veins were identified anterior to the saphenofemoral junction, medial to the saphenofemoral junction, or in the gluteal area or posterior thigh, they were then followed back to their most proximal source in the labia or perineum. These proximal sources or escape points are typically found in the inguinal, obturator, perineal, or gluteal locations as described by Kachlik et al.⁸ Following a standardized protocol for

ARTICLE HIGHLIGHTS

- **Type of Research:** Prospective single-center comparative study
- **Take Home Message:** This study of 72 women with symptomatic pelvic source varicose veins found that they were younger and thinner than those with nonpelvic source varicose veins and had large infants. There was an inverse correlation between age and pain.
- **Recommendation:** The authors suggest that the Venous Clinical Severity Score is a poor tool for evaluation. A new disease-specific quality of life instrument is urgently needed.

evaluating the connection of pelvic floor veins to veins in the lower extremity (as outlined by Labropoulos et al),⁹ reflux time was measured along with corresponding diameters during a Valsalva maneuver. Reflux was defined as retrograde flow >0.5 second measured with pulsed wave Doppler after a Valsalva maneuver for the veins in the upper thigh and vulvar area and distal augmentation/Valsalva maneuver for the saphenous veins. The results were provided to the physician in the form of a detailed mapping that delineated the pattern of reflux along with all relevant anatomic information.

Patients were queried as to their primary symptoms, activities that made their symptoms worse, and times when their symptoms were most bothersome. Efforts were made to ensure that symptoms were reported by the patients themselves without suggestions of guidance from the clinician. Patients could report as many symptoms and exacerbating activities as they thought relevant. Physician-derived rVCSS and patient-reported 10-point numeric pain rating scale (NPRS) score were obtained. For the NPRS, the patient was asked to recall the greatest amount of pain or discomfort that she felt in the month previous to the visit. We also routinely collected age and body mass index (BMI) for all other women (n = 1163) presenting with varicose veins at the same practice during the same period. These patients were identified by *International Classification of Diseases, Ninth Revision* codes from the practice's electronic medical and billing records. NPRS scores are not routinely collected in patients with nonpelvic source varicose veins in this practice, and rVCSS was inconsistently collected during this time. For this reason, no comparison of NPRS or rVCSS was made between the two groups.

The mean birth weight of each patient's collective offspring and the birth weight of each patient's largest infant were compared with national, state, and county data. National birth weights were obtained from a study evaluating 2,579,198 full-term (>37 weeks) singleton infants from 2005.¹⁰ As all of the patients in our study were white, we compared the birth weights in our study

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