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Evaluation and usefulness of venous clinical severity score (VCSS) in patients of varicose veins, undergoing surgery in a tertiary care hospital

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Abstract
Background: The purpose of this study is to evaluate the Venous Clinical Severity Score (VCSS), as a valuable tool, for adequately describing symptoms, signs and patient's response to surgical treatment.
Aims and Objectives: To study VCSS as a efficient quantification tool in assessing the patients with venous disease pre and postoperatively.
Methodology: This study was conducted on 90 patients who underwent surgery for varicose veins during the period of January 2019 to December 2019 from the in-patients of surgical unit in Dr. PSIMS & RF.
Results and Conclusion: The VCSS was devised to include both symptoms and signs in assessing the severity of the disease and evaluation of outcome of surgical treatment. Although the assessment of clinical etiological anatomical and pathophysiological (CEAP) classification might be adequate for daily clinical purposes, VCSS should be used in clinical practice to quantify post operative outcome.

Keywords: VCSS, CEAP

Introduction
In an attempt to standardize outcome assessment of venous interventions, an ad hoc committee of the American Venous Forum (AVF) developed a clinical scoring system, the VCSS [1, 2] meant to expand and supplement the existing CEAP classification system. Several standard venous assessment tools have been used as independent determinants of venous disease severity [3, 4], but correlation between these instruments as a global venous screening tools has not been tested [5]. The scope of this study is to assess the validity of VCSS and its integration in management of venous diseases along with CEAP classification.

Methodology
Inclusion Criteria:
1. Age between 18 and 75 years, either sex, elective admission.
2. Symptomatic varicose veins (primary) confirmed by Doppler ultrasound.
3. Patient must be fit for general/regional anesthesia.

Exclusion Criteria
1. Secondary varicose veins (secondary to trauma, DVT, intra- abdominal pathology etc).
2. Associated deep venous incompetence on imaging.

VCSS Scoring System

Attribute	Absent=0	Mild=l	Moderate=2	Severe=3
Pain	None	Occasional, not restricting activity or requiring analgesics	Daily moderate activity limitation, occasional analgesics	Daily severe limiting activities requiring regular use of analgesics
Varicose veins	None	Few scattered branch VVS	Multiple GS varicose veins confined to calf or thigh	Extreme thigh and calf or GS and SS distribution
Venous edema	None	Evening ankle edema only	Afternoon edema above ankle	Morning edema above ankle and requiring activity change, elevation
Skin pigmentation	None or focal low intensity	Diffuse but limited in area(browm)	Diffuse over most of gaiter distribution (lower1/3) or recent pigmentation (purple)	Wider distribution (above lower 1/3) and recent pigmentation
Inflammation	None	Mild cellulites, limited to marginal area around ulcer	Moderate cellulitis, includes most gaiter area lower 1/3	Severe cellulitis lower1/3 and above or significant venous eczema
Induration	None	Focal, circummalleolar (<5mm)	Medial or lateral, less than lower third of leg	Entire lower third of leg or more
No. of active ulcers	0	1	2	>2
Active ulceration, Duration	None	<3mo	>3Mo,<1yr	Not healed>1yr
Active ulcer Size	None	<2cm diameter	2-5cm diaeter	>5cm diameter
Compressive therapy	Not used or not compliant	Intermittent use of stockings	Wears elastic stockings most days	Full compliance stockings and elevation

Results

Table 1: Pain

VCSS	Pre op		Post op	
	No of patients	Percentage (%)	No of patients	Percentage (%)
0	17	18.8	40	44.44
1	24	16.6	50	55.56
2	48	53.3		
3	1	1.1		
Total	90	100	90	100

Table 2: Varicose Veins

VCSS	Preoperative		Post operative	
	No of patients	Percentage (%)	No of patients	Percentage (%)
0	18	20.0	71	78.9
1	5	5.5	18	20.1
2	56	62.2	1	1.1
3	11	12.3		
Total	90	100	90	100

Table 3: Edema Due To Varicose Veins

VCSS	Preoperative		Post operative	
	No of patients	Percentage (%)	No of patients	Percentage (%)
0	35	38.9	67	74.4
1	14	15.5	22	24.5
2	36	40.4	1	1.1
3	5	5.6		
Total	90	100	90	100

Table 4: Skin Pigmentation

VCSS	Preoperative		Postoperative	
	No of patients	Percentage (%)	No of patients	Percentage (%)
0	53	58.91	65	72.2
1	14	15.5	24	26.7
2	23	25.5	1	1.1
Total	90	100	90	100

Table 5: Inflammation

VCSS	Preoperative		Postoperative	
	No of patients	Percentage (%)	No of patients	Percentage (%)
0	78	86.7	87	96.67
1	11	12.2	3	3.33
2	1	1.1		
Total	90	100	90	100

Table 6: Induration

VCSS	Preoperative		Postoperative	
	No of patients	Percentage (%)	No of patients	Percentage (%)
0	77	85.56	88	97.8
1	13	14.45	2	2.2
Total	90	100	90	100

Table 7: Ulcer Duration

VCSS	Preoperative		Postoperative	
	No of patients	Percentage (%)	No of patients	Percentage (%)
0	66	73.3	90	100
1	10	11.1		
2	11	12.3		
3	3	3.3		
Total	90	100	90	100

Table 8: Numer of Active Ulcers

	Preoperative		Postoperative	
VCSS	No of patients	Percentage (%)	No of patients	Percentage (%)
0	66	73.3	90	100
1	21	23.3		
2	3	3.34		
Total	90	100	90	100

Table 9: Ulcer Size

	Preoperative		Postoperative	
VCSS	No of patients	Percentage (%)	No of patients	Percentage (%)
0	67	74.5	90	100
1	10	11.1		
2	13	14.5		
Total	90	100	90	100

Table 10: Compression Therapy

	Preoperative		Postoperative	
VCSS	No of patients	Percentage (%)	No of patients	Percentage (%)
0	1	1.1	16	17.8
1	28	31.1	17	18.8
2	34	37.8	16	17.8
3	27	30	41	45.6
Total	90	100	90	100

Total Vcss Score

Preop score	No of patients	Percentage (%)
3	1	1.1
4	3	3.4
5	8	8.9
6	13	14.4
7	22	24.4
8	15	16.7
9	9	10
10	4	4.5
11	2	2.2
12	4	4.5
13	5	5.5
14	2	2.2
15	1	1.1
16	1	1.1
Total	90	100

Post op score	No of patients	Percentage(%)
0	3	3.4
1	15	16.7
2	14	15.6
3	14	15.6
4	22	24.4
5	17	18.9
6	2	2.2
7	2	2.2
15	1	1.1
Total	90	100

Ceap Classification

Pre op score	No of patients	Percentage (%)
C1	1	1.1
C2	20	22.2
C3	15	10.7
C4	29	32.2
C5	1	1.1
C6	23	25.5
Total	90	100

Post op score	No of patients	Percentage (%)
C0	38	42.2
C1	11	12.2
C2	2	2.2
C3	14	15.5
C4	19	21.1
C5	6	6.7
Total	90	100

Discussion

The present study was conducted to evaluate the efficacy of VCSS in assessing the patients with pre and post operative venous disease, admitted in DR.PSIMS & RF. The VCSS was designed not to replace the CEAP classification but to supplement it and provide a method for serial assessment. It was designed to give additional weight to more severe manifestations of chronic venous disease. The VCSS includes 10 clinical descriptors (pain, varicose veins, odema, skin pigmentation, inflammation, induration, number of active ulcers, duration of ulcer, ulcer size, compressive therapy) scored from 0-3 that may be used to assess changes in response to treatment. In our study all the patients underwent either GSV flush ligation with or without GSV stripping or SSV ligation, along with perforator ligation. Pain is a significant factor contributing to the morbidity in varicose veins, which in CEAP classification is not taken into the account. Varicose Veins are classified clinically by both scoring systems, which showed a linear change in the scoring system after surgery, indicating both scoring systems are useful predictors. The edema in CEAP classification is limited to pitting type of edema where as in VCSS the extent of the edema is taken into consideration. VCSS was not precise enough to assess skin changes such as dermatitis or hypodermic inflammation. Inflammation refers to the acute aspect of the venous disease, hence more likely to respond to treatment. Induration is usually much slower to respond to treatment. All the patients noticed complete healing of the ulcer in terms of size and number after treatment. The need for compression therapy decreased in post-operative period. The CEAP classification has good intraobserver reproducibility, however the broad classifications included in CEAP are less responsive for quantifying the outcome whereas VCSS has been categorized into absent, mild, moderate and severe disease to quantify the severity of disease and thus helps us in assessing the outcome of surgery. From the analysis of the collected data by VCSS scoring system, it is observed that the post-operative average score of individual patients showed a significant improvement.

Conclusion

VCSS is a dynamic evaluation tool to measure the changes in response to superficial venous surgery, which goes to say that it should be used clinically on a regular basis. CEAP system is inadequate in assessing response to change over time. VCSS coupled with clinical category of CEAP provides a standard clinical language to report and compare differing approaches to chronic venous disease management as well as to assess the postoperative outcome. VCSS has more global application in determining the overall severity of venous disease

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