

CORRELATION OF VARIOUS CLINICAL ASSESSMENT SCORES WITH SURGICAL OUTCOME IN VARICOSE VEINS OF LOWER LIMBS

Dr. Jeevan. Nagaraj, Dr. Vedavathi N.K, Dr. Tanmay.A

Post Graduate ,Department of General Surgery
The oxford medical college hospital and research centre (TOMCH & RC)
Assistant professor, Department of General Surgery
The oxford medical college hospital and research centre (TOMCH & RC)
Post graduate, Department of General Surgery
The oxford medical college hospital and research centre (TOMCH & RC)

Corresponding author: Dr. Tanmay.A

ABSTRACT

BACKGROUND

Varicose vein entity includes a vast majority of clinical and pathological manifestations. However, there are very few standardized methods to assess the clinical severity and predict the outcomes of surgery in such patients. Hence, this current study evaluated the role of on Clinical Assessment of varicose veins by clinical scores and correlating the outcomes of surgery in such patients.

METHODS AND MATERIALS

This analytical study group consisted of 60 patients above 18 years. They were assessed for severity of varicose veins by documenting a detailed history, clinical examination findings, imaging studies on a pre-structured case sheet and the result of surgery. It was found that majority of the patients were ≤ 60 yrs. and the left lower limb was predominantly affected in both sexes.

RESULTS

In our study 50 % (n=30) patients had Severe grade of Venous Reflux (VRS). We found that majority had undergone the SFJ Flush ligation and multiple perforator ligation 50.0% (n=30). We also analyzed the post-operative outcome, which revealed majority had uneventful periods 66.67 % (n=40). We also found that the clinical features assessed correlated well with the venous reflux on the Duplex scan, as well as surgical outcomes and complications (Pearson correlation coefficient=0.171, P value- 0.032).

CONCLUSION

A statistically significant result was found for the clinical assessment scores and also correlated with the surgical outcome.

KEYWORDS

Tortuous veins, Brodie Trendelenburg test, vein stripping

INTRODUCTION

Varicose veins are characterized by subcutaneous dilated, tortuous veins greater than or equal to three millimeters, involving the saphenous veins, saphenous tributaries, or non-saphenous superficial leg veins with age and family history considered important risk factors.[1] Varicose veins are considered a common clinical manifestation of chronic venous disease.[2] Notwithstanding the cosmetic challenges with varicose veins, the associated superficial axial venous reflux should be evaluated. Accordingly, great and small saphenous vein reflux exclusion is part of the primary diagnostic management.[3]

Varicose vein entity includes a vast majority of clinical and pathological manifestations. However, there are very few standardized methods to assess the clinical severity and predict the outcomes of surgery in such patients. Hence, this current study evaluated the role of on Clinical Assessment of varicose veins by clinical scores and correlating the outcomes of surgery and management of patients accordingly.

MATERIALS AND METHODS

This is a prospective observational study that included 60 patients diagnosed with primary varicose veins of lower limbs clinically and confirmed by duplex scan. Those patients with deep venous thrombosis, secondary causes of varicose veins and associated peripheral arterial disease were excluded. Patients with active venous ulceration were included after conservative management of the same.

For the purpose of this study, three scores were chosen

1. Venous Clinical Severity Score [VCSS]
2. Venous Disability Score [VDS]
3. Venous Reflux score [VRS]

And correlation study was done among them and surgical outcome.

In this study conducted at a tertiary care hospital for the period of 12 months. The history was taken recording symptoms, duration of disease and occupation. The degree of disability was assessed by questionnaire. The site of varicose veins, system involved (LSV or SSV or Perforator incompetence) and if any associated complications were assessed by clinical examination. Abdominal and pelvic examinations were done to rule out abdominal tumours and other causes of raised intra-abdominal pressure. Cardiovascular system and peripheral arterial pulses were carefully examined to exclude arterial disease associated with varicose vein.

The non-invasive standard colour Doppler examination was performed for assessing the following parameters: i) Grading of venous reflux at SFJ. ii) Competency of SPJ. iii) Patency of deep venous system of lower limb.

The venous reflux score all 60 patients were graded. Normally venous reflux is absent at SFJ. Presence of reflux is considered as abnormal. Based on the duration of reflux it is graded as follows: The Grade I – upto 0.5 second, Grade II – 0.5 to 1 second, Grade III – more than 1 second.

Clinically all 60 patients were classified as mild, moderate and severe category according to Venous Clinical Severity Score (VCSS).

Based on severity of symptoms, they were classified according to Venous Disability Score (VDS) into grade 0, grade 1, grade 2 and grade 3.

Further correlation of VCSS, VDS & VRS was done using Pearson correlation.

All the 60 patients underwent surgery by the following methods such as Trendelenburg procedure, i.e. flush ligation of sapheno-femoral junction with stripping, subfascial ligation of perforators, segmental excision of varicosities, sapheno-popliteal ligation and split skin graft according to the clinical findings.

RESULTS

This study was designed to correlate VCSS, VDS & VRS and correlating various surgical management done based on the clinical assessment.

60 patients above the age of 18 yrs were recruited in this study, which was conducted over a period of 12 months.

In our study majority of patients belong to 41 to 50 years age group (n=28, 46.67%)

Among the 60 patients studied, male to female ratio is 2.8:1, which corroborates with the findings of other studies.

In our study, 22 were affected on left side of lower limb, whereas 33 were affected on right side of the lower limb and 5 had varicose vein in both limbs.

When we calculated the VCSS score, we observed that majority of the patients had moderate disease.

VCSS	No. of Patients	Percentage
Mild	12	25%
Moderate	31	51.67%
Severe	17	28.33%
Total	60	100%

Similarly, when we tabulated the VDS score, we observed that majority had a disability grade of 2.

VDS	No.of Patients	Percentage
0	8	13.33%
1	12	25%
2	36	60%
3	4	6.67%

while we tabulated the VRS score, we observed that majority had grade 2 reflux.

VRS	No.of Patients	Percentage
Mild	4	6.67%
Moderate	17	28.33%
Severe	39	65%

SCORE	VCSS	VDS	VRS
MILD	12	12	4
MODERATE	31	36	17
SEVERE	17	4	39

When we correlated each of the scoring systems, we observed that there was a statistically significant correlation between VCSS and VRS (N=60, Pearson correlation coefficient =0.241, P value =0.026).

Similarly, there was a correlation between VDS and VRS (Pearson correlation coefficient =0.203, P 0.045).

VCSS and VDS correlation also revealed a positive correlation (Pearson correlation coefficient =0.267, P value- 0.034).

Venous Doppler Study Findings

In our study, out of 60 patients 44 had saphenofemoral reflux and 16 had saphenopopliteal reflux

Duration of Hospital Stay

The following table depicts the duration of hospital stay with different manifestations

Sl.No.	Duration of Hospital Stay (In Days)	No. of Patients
1	5-10	32
2	10-15	16
3	15-20	12

Surgical Management

All 60 patients had different methods of surgical procedure in accordance with their clinical severity of the varicose veins in lower limbs.

Sl. No.	Types of Surgical Procedure	No. of Patients
1	Trendelenberg procedure	3
2	Trendelenberg procedure with Subfascial Perforators Ligation	32

3	Saphenofemoral flush ligation with perforator ligations	15
4	Perforator Ligation only	2
5	Saphenofemoral Ligation, Perforator Ligation with Segmental excision of varicosities	4
6	Along with SSG for ulcers	4

Post-operative Complications

All 60 patients had surgery with majority had uneventful postoperative periods 66.67% (n=40), whereas a few had complications 33.33% (n=20) like surgical site infection, bleeding.

In our study 50% (n=30) patients had Severe grade of Venous Reflux (VRS), while 60% (n=36) had grade 2 venous disability score (VDS) and 51% (n=31) had moderate severity based on venous clinical severity score (VCSS).

We found that majority had undergone the SFJ Flush ligation and multiple perforator ligation 50.0% (n=30).

We also analyzed the post-operative outcome, which revealed majority had uneventful periods 66.67% (n=40).

We also found that the clinical features assessed correlated well with the venous reflux on the Duplex scan, and complications (Pearson correlation coefficient = 0.171, P value = 0.032).

DISCUSSION

The development of varicose veins is a consequence of venous reflux, which is also the cause of the clinical manifestations and difficulties associated with this condition.

Intervention in individuals with asymptomatic venous reflux may be the most effective treatment for preventing problems in cases of grade II and grade III venous reflux.

Varicose veins can be treated definitively through surgery, because it reduces the risk of morbidity associated with the disease.

From the current study we found that there is a positive association between the various clinical scores and the venous reflux that was observed on the Duplex scan.

A significant association was found between lower limb clinical characteristics and venous reflux as determined by Doppler ultrasound scanning in the Edinburgh vein research that was

conducted in Scotland by the Vascular Surgery Department in the year 2002.

Another study was conducted by Pearson et al³ and Rachel et al⁴ with the sample size was 466 patients to evaluate the improvements in the varicose vein treatment based on severity scores and the p value was 0.012 which is statistically significant.

According to the findings of a study that was conducted by Vasquez⁵ et al. to evaluate the quality of life changes that occurred as a result of varicose vein treatment in 499 patients, the venous clinical severity score was utilised, it showed significant p value of 0.013.

In research by Bradberg⁶ et al and Munschauer CF⁷ et al, studied the effectiveness of the Varicose Vein Severity Scale (VCSS) system in assessing the risk of varicose veins and evaluated the changes that occurred in 68 individuals following treatment for varicose veins. VCSS was found to be useful in the aforementioned measurement, according to the findings of the study (p value: 0.015).

Gilet⁸ et al. conducted a study in 2006 that included 2894 patients to compare the parameters between VCSS and CEAP in varicose vein care. They came to the conclusion that the VCSS was an excellent system (p value: 0.001) in evaluation and followup of chronic venous insufficiency of lower limbs.

The researchers Padberg⁹ et al and Bradbury AW¹⁰ et al conducted a study in the year 2000 on 191 patients to determine which method was superior in assessing the clinical features of varicose veins and measuring the changes that occurred after treatment for varicose veins. They discovered that the Varicose Vein Clinical Severity Scale (VCSS) would be the ideal tool (p value: 0.001) to determine the outcome and risk assessment in varicose veins, in comparison to the CEAP, which had been in use for a considerable amount of time.

It was discovered by Jones¹¹ and Fischer¹² et al. that surgery was a good definitive therapy for primary varicose veins. While secondary varicose veins need typically require rest, elevation, and elastic support.

CONCLUSION

From the findings of the present study, we can conclude that there is a positive correlation between the clinical scoring systems for severity of varicose veins with venous reflux on doppler, as well as surgical outcomes.

Hence, clinical scoring systems is easily applicable to all patients as a bedside score compared to traditional scoring systems.

It can be done on an OPD basis and patients can be counselled accordingly. It is easily reproducible and special clinical tests are not required hence can be scored at ease.

REFERENCES

1. Russell RCG, Williams NS, Christopher JK, et al. Bailey and Love's short practice of surgery 24th ed. London: Arnold 2004: p 954.
2. Tjandra JJ, Clunie GJA, Kaye AH, et al. Textbook of surgery 3rd ed. Blackwell publishing 2005: p 501.

3. Persson AV, Jones C. Use of the triplex scanner in diagnosis of deep venous thrombosis. *Arch Surg* 1989;124(5):593-6.
4. Rachel CS, Andrew WB, Veins V, et al. *Vascular and endovascular surgery* 3rd ed. Elsevier Saunders 2006:p373-89.
5. Vasquez MA, Wang J, Mahathanaruk M, et al. The utility of the venous clinical severity score in 682 limbs treated by radiofrequency saphenous vein ablation. *J Vasc Surg* 2007;45(5):1008-14.
6. Bradbury A, Evans CJ, Allan P, et al. The relationship between lower limb symptoms and superficial and deep venous reflux on duplex ultrasonography: the Edinburgh vein study. *J Vasc Surgery* 2000;32(5):921-31.
7. Vasquez MA, Munschauer CE. Venous clinical severity score and quality-of-life assessment tools: application to vein practice. *Phlebology* 2008;23(6):259-75.
8. Gillet JL, Perrin MR, Allaert FA. Clinical presentation and venous severity scoring of patients with extended deep axial venous reflux. *J Vasc Surg* 2006;44(3):588-94.
9. Rutherford RB, Padberg FT, Comerota AJ, et al. Venous severity scoring: an adjunct to venous outcome assessment. *J Vasc Surg* 2000;31(6):1307-12.
10. Bradbury AW, Stonebridge PA, Ruckley CV, et al. Recurrent varicose veins: correlation between preoperative clinical and hand-held Doppler ultrasonographic examination, and anatomical findings at surgery. *Br J Surg* 1993;80(7):849-51.
11. Jones L, Braithwaite BD, Selwyn D, et al. Neovascularization is the principal cause of varicose vein recurrence: results of a randomized trial of stripping the long saphenous vein. *Eur J Vasc Endovasc Surg* 1996;12(4):442-5.
12. Fischer R, Linde N, Duff C, et al. Late recurrent saphenofemoral junction reflux after ligation and stripping of the greater saphenous vein. *J Vasc Surg* 2001;34(2):236-40.