

Clinicoetiopathological Study of Varicose Veins at a Tertiary Care Centre

Konati Vamseedhar¹, N. V. Ramanaiah², Sesham Jhansi³, N. Deepthi⁴, N. Geethika⁵, Gejji Mahesh Babu⁶,
A. Venkat Vineeth⁷, Shaik Heena⁸

¹Assistant Professor, Department of General Surgery, Sri Venkateswara Medical College, Andhra Pradesh.

²Professor, Department of General Surgery, Sri Venkateswara Medical College, Andhra Pradesh. ³Postgraduate, Department of General Surgery, Sri Venkateswara Medical College, Andhra Pradesh. ⁴Postgraduate, Department of General Surgery, Sri Venkateswara Medical College, Andhra Pradesh. ⁵Postgraduate, Department of General Surgery, Sri Venkateswara Medical College, Andhra Pradesh. ⁶Postgraduate, Department of General Surgery, Sri Venkateswara Medical College, Andhra Pradesh. ⁷Postgraduate, Department of General Surgery, Sri Venkateswara Medical College, Andhra Pradesh. ⁸Postgraduate, Department of General Surgery, Sri Venkateswara Medical College, Andhra Pradesh.

ABSTRACT

BACKGROUND

Varicose veins, though a common condition, many a times remains asymptomatic. During its course, the disease produces complications which usually make the patient to seek medical care.

METHODS

This is a prospective study where 100 patients with varicose veins admitted in Department of General Surgery, SVRRGGH Tirupati, were evaluated. A thorough history was obtained, detailed clinical examination was done, and clinical tests were applied; patients were subjected to duplex USG to confirm the diagnosis. Routine investigations were done, and patients underwent treatment based on clinical and investigational profile. The post-operative course, follow-up was noted. The final outcome was evaluated by the information that was taken down in the proforma designed for the study.

RESULTS

Majority of the patients were in the middle age group and incidence is more in males. Great saphenous system involvement is more common, and the operative procedure performed commonly is SFJ flush ligation with stripping of LSV with incompetent perforator ligation.

CONCLUSIONS

Majority of the patients presented with combined perforator and SF incompetence. Surgical treatment with flush ligation and stripping of LSV appears to be best option for lower limb varicose veins with LSV truncal involvement.

KEYWORDS

Varicose Veins, Great Saphenous Vein, Flush Ligation

Corresponding Author:

*Dr. Sesham Jhansi,
R. No. 305, Women's PG Hostel,
Sri Venkateswara Medical College,
Aliperi, Tirupati- 517501,
Andhra Pradesh.*

*E-mail: nenavathdeepthi55@gmail.com
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BACKGROUND

Varicose veins of lower limb and their treatment are as old as mankind. Hippocrates discussed those 2500 years ago. It is not found in other animals and it is the human beings, who had to pay penalty for their erect posture. Varicose veins constitute a progressive disease that becomes steadily worse. There is never remission of the disease except after pregnancy and delivery, when many of dilated varicosities may disappear. During its course, the disease produces complications which usually make the patient to seek medical care. Varicose veins, though a common condition many a times remain asymptomatic. It is in the developed countries patients come for cosmetic reasons. In our Indian scenario it is the complications, not the cosmetic reasons which bring the patients to the doctor. That is the reason why varicose veins though a common condition remains as an iceberg phenomenon. Since varicose veins is a common surgical cause for disability, it influenced me to undertake this study and to explore the risk factors for varicose veins, the incidence rate in our hospital, complications, selection of an appropriate procedure for a selected case, complications associated with treatment.

METHODS

This is a prospective study conducted in the Department of General Surgery, SVRRGG Hospital (a tertiary care centre of about 950 bed size), Tirupati from September 2015 to August 2016. 100 patients above 18 years of age admitted with varicose veins were included in this study. After taking informed consent, a thorough history was obtained, and a detailed clinical examination was done. All the clinical tests were applied, and patients were subjected to duplex USG to confirm the diagnosis. Routine investigations were done, and patients underwent treatment based on their clinical and investigational profile. The post-operative course was noted and further the patients were followed. The final outcome was evaluated by the information that was taken down in the proforma designed for the study. Important data pertaining to each case is shown in the master chart.

RESULTS

The youngest in the study was 28 years and oldest was 55 years. Majority of the patients were in the age group 31-40 years. The occupation of 80 patients out of 100 patients studied, involved prolonged periods of standing/violent muscular efforts. In our study, 56 cases (56%) left lower limb is involved, in 40 cases (40%) right lower limb is involved and in 4(4%) cases both limbs are involved. In this series, isolated long saphenous vein was involved in 84 (84%) of patients. Short saphenous system in 2(2%) of patients and both systems in 14(14%) of cases. The commonest symptom is pain in 82(82%) of cases in our study. The majority of the patients sought treatment for one

or the other complications of varicosities. The majority of patients in this study had saphenofemoral incompetence with Perforator incompetence. In this study of 100 patients, 78 (78%) patients underwent SFJ ligation with stripping of LSV with incompetent perforator ligation. 2 (2%) had undergone isolated SPJ ligation.

Age (Years)	Number of Patients	Percentage
20-30	6	6%
31-40	56	56%
41-50	28	28%
51-60	10	10%

Table 1. Age Distribution

Occupation	Number of Patients	Percentage
Agricultural Labourer	24	24
Daily Labour	36	36
Traffic Police	8	8
Teacher	4	4
Clerk	8	8
Housewife	2	2
Army Soldier	4	4
Bus Conductor	6	6
Hotel Waiter	4	4
Cook	4	4

Table 2. Occupation

Symptoms	No. of Patients	Percentage
Dilated veins	46	46
Pain	82	82
Limb oedema	04	04
Ulcer	18	18
Others (skin changes etc.,)	20	20

Table 3. Clinical Manifestations

Class	Limbs	%
0	-	-
1	-	-
2	-	-
3	14	14%
4	60	60%
5	26	26%
6	-	-

Table 4. Clinical Class of CEAP

Site of Incompetence	No. of Limbs	%
Only Saphenofemoral junction	6	6%
Saphenofemoral + Perforators	78	78%
Only Saphenopopliteal junction	2	2%
Saphenofemoral + Saphenopopliteal + Perforators	14	14%

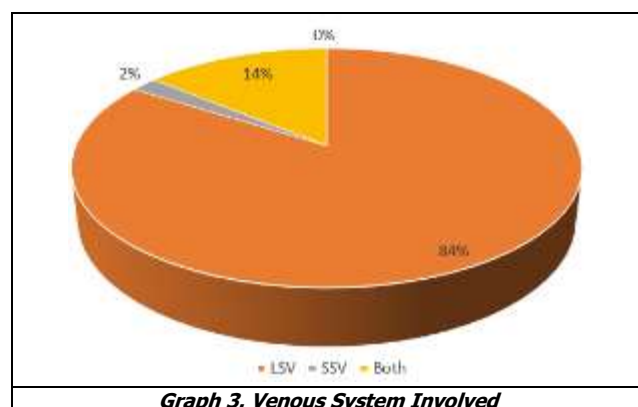
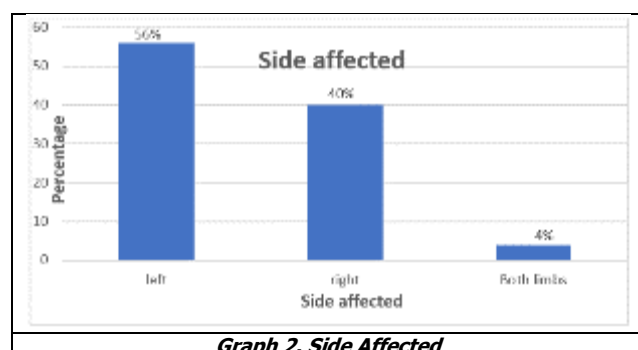
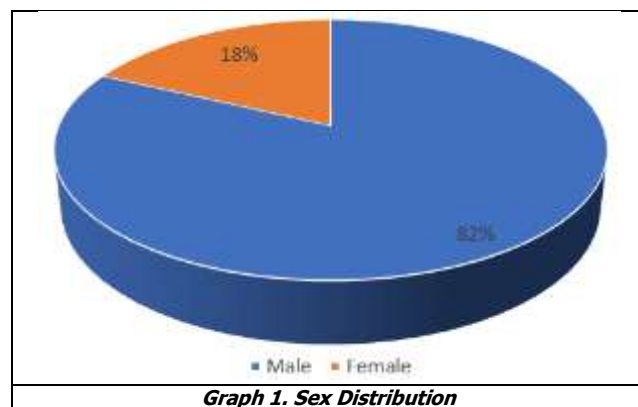
Table 5. Site of Incompetence

Surgical Procedures	Limb	%
SFJ flush ligation with stripping of LSV	6	6%
SFJ flush ligation with stripping of LSV with incompetent perforator ligation	78	78%
SFJ, SPJ ligation with stripping of LSV with incompetent perforator ligation	14	14%
SPJ ligation without stripping of SSV	2	2%
Total	100	100

Table 6. Surgical Procedures Performed

Complications	No. of cases	%
Hematoma	4	4%
Infection	2	2%
Residual varicosity	4	4%

Table 7. Complications



DISCUSSION

Varicose veins of lower limb are a common clinical manifestation, which starts early in the life but assumes an innocent course for variable length of time.

Age Distribution

In our study, maximum number of patients 56(56%) presented in the 31-40 years age group. The next common age group of presentation was 41-50 years with 28(28%). This age distribution correlates well with other studies conducted by Campbell et al., who showed the commonest age of presentation to be 30-40 years.¹

Sex Distribution

Out of the 100 cases included in this study, 82 cases (82%) were male with only 18 female patients (18%). This disparity may be due to the fact that the patients are from low socio-economic background and also cosmesis is not a concern, as

these patients do not wear short clothes. All other studies showed women to be affected more than male.²

Studies	Male: Female
Present study	9:2
Malhotra et al ³ - Burkitt et al ⁴	1:5
Mekky et al ⁵ - Lejpnitz et al ⁶	1:2
Widmer ⁷	1:1

Table 8. Male To Female Ratio

Family History

8% (8 cases) familial incidence was noted in this study. De Takata⁸ in his series had shown that nearly 50 to 70% of the patients with varicose veins had a hereditary tendency, but this study showed a very low incidence.

Occupation

Varicose veins are more common in persons whose occupations demand them for prolonged standing and violent muscular efforts. In present study 80% of the patients are affected by prolonged standing.

Clinical Presentation

In the present study, the commonest symptom in 82(82%) cases was pain. 46(46%) cases had complaints of dilated tortuous veins in the affected limb and 4(4%) cases had limb oedema, venous ulcer was present in 18(18%) of cases. But in western studies, majority of patients were treated for only prominent veins, (54% in O' Shaghnessy M. et al¹), rather than its complications. This shows the cosmetic appearance was the commonest presenting complaint in the western countries whereas complications of varicose veins were the most common presentation in India.

Symptoms	Rudofsky G. Langebecks Arch Chir ⁹ (%)	O' Shaghnessy M. et al. ¹ (%)
Pain and prominent veins	30	54
Prominent veins and oedema	0	0
Pigmentation and itching	13	0
Pigmentation and ulcer	0	14
Previous history of DVT	0	5

Table 9. Comparative Study on Symptoms

Side Affected

In present study 56(56%) of patients had left lower limb involvement, 40(40%) patients had right lower limb involvement. 4(4%) had both limbs involvement.*

	Right	Left
A.H.M. Dur, A.I.C. Mackaay et., al	43%	56%
Present Study	40%	56%

Table 10. Comparative Study on Limb Involvement

This favourably compares with the study conducted by A.H.M. Dur, A.I.C. Mackaay et al (Right - 43% and left 56%). The cause for increased incidence on left side is not known. This is probably because that the left iliac veins join at an angle, being constantly pressed by the loaded left colon, the common iliac artery crossing over the common iliac vein and the longer course traversed by the left iliac veins, unlike the right lower limb which is not much subjected to these anatomical disadvantages.

In this series, long saphenous vein was involved in 84% of cases (84 patients), the short saphenous vein in 2% (2 patient) and both long and short in 14% (14 cases). Delbe

and Mocquet in their study had found varicosity of long saphenous vein in 98% and only 2% in short saphenous vein. Incompetent perforator was noted in 82 (82%) cases. This can be explained to the longer length of long saphenous vein when compared to the short saphenous vein, which runs in fascial tunnel from above the lateral malleolus to the popliteal fossa. The communicating veins are mostly indirect in short saphenous system, while direct communicating veins predominates in the long saphenous system.¹¹

System Involved	Present Study %	Al-Mulhim et al. King Fahad Hospital ¹⁰ (%)
Long saphenous vein	84	68.42
Short saphenous vein	2	7.02
Both	14	24.56

Table 11. Comparative Study on Venous System Involved

Site of Incompetence

The majority of patients in this study had saphenofemoral with perforator incompetence (78%) and 6% of patients had only saphenofemoral incompetence and only 2% presented with only saphenopopliteal incompetence.

Duplex Scan

Duplex scanning is the primary non-invasive method of assessing chronic venous insufficiency, which has an overall accuracy of 94%. This finding is in conformity of Masuda et al¹² who showed that duplex scanning had an overall accuracy of 88%.

Duplex Scan Vs Clinical Findings

Diagnostic validity of clinical findings in comparison to duplex scan in saphenofemoral junction incompetence taking the latter as gold standard showed that clinical examination detected all cases shown to have saphenofemoral junction incompetence by duplex scan with a sensitivity of 100%. Specificity i.e. the ability to detect all truly negative cases as shown by duplex scan is low (66.6%), there is a tendency to falsely predict the presence of saphenofemoral junction incompetence clinically. Positive predictive accuracy of clinical examination is 97.9%, with a negative predictive value of 100% showing ability of clinical examination to rule out saphenofemoral junction incompetence in all duplex negative cases.

Management

Conservative treatment was given to all the patients pre-operatively. Post-operative compression was followed routinely to prevent hematoma formation after stripping and were advised elastic crepe bandage / stockings for three to four months. Sclerosant therapy was not tried in this series, because of the paucity and non-availability of the sclerosant agents and also because of presence of major incompetence.

Out of 100 cases, saphenofemoral junction ligation including the ligation of anatomically constant tributaries at its termination with stripping of long saphenous vein by Myers stripper up to the knee and ligation of incompetent perforator was done in 78 cases. Saphenous-popliteal junction ligation was done in 2 case, SFJ and SPJ ligation with stripping of LSV in 14 cases. SSV was not stripped to avoid nerve injury. Flush ligation of SFJ and stripping of LSV was done in 6 cases.

Complications	%
Femoral vein injury	2
Femoral artery injury	0.04
Deep vein thrombosis	0.30
Pulmonary infarction	0.12

Table 12. Complications

In our study we encountered complications in 10 cases, the commonest being hematoma (4 cases) which cleared after about 15 days. There was no incidence of deep vein thrombosis or pulmonary embolism postoperatively in this series. Literature shows the incidence to be very low at 0.01%. We had 4 cases of recurrence after 8 months who underwent saphenofemoral flush ligation and the recurrent varicosities are found to be due to perforator incompetency and these patients underwent subfascial ligations of perforators. This shows the importance of perforators and accurate diagnosis of their incompetency to prevent recurrence. The study conducted by Hagmuller GW¹³ showed incidence of some major complications, none of which occurred in the present study group.

CONCLUSIONS

Majority of the patients present with complications of varicose vein and combined perforator and saphenofemoral incompetence. Surgical treatment with flush ligation and stripping of LSV appears to be best option for lower limb varicose vein with LSV truncal involvement.

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