

# Study of the Clinical Profile of Varicose Vein Disease

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## ABSTRACT

**Introduction:** Varicose veins are part of the spectrum of chronic venous diseases and include dilated, tortuous veins of lower limbs, spider telangiectasia and reticular veins. Varicose vein disease is a very common problem of the western world and mostly their patients come for treatment because of cosmetic reasons. Indian scenario is different as mostly patients from lower socioeconomic strata of the society come for complications like ulceration, dermatitis etc. of varicose veins come for treatment. This problem sometimes results in chronic absenteeism from work, economic losses and change of occupation in many individuals.

**Methods:** This observational study was carried out from 1<sup>st</sup> January 2017 to 30<sup>th</sup> June 2018 in Sri Aurobindo Medical College and Postgraduate Institute, Indore. Clinical profile of 52 patients of varicose vein disease was studied. All the patients were thoroughly examined and the pertaining data recorded. This data was tabulated and compared with the available literature on this subject.

**Results:** Fifty two cases of varicose vein disease were studied. The commonest age group affected with the disease was between 41 to 50 years. Male patients were more and comprised of 84.6% of total number. Sapheno femoral junction valve was incompetent in 73.1 % cases as compared to saphenopopliteal junction[34.6%]. Obesity was an important factor in causation of varicose vein disease. Flush ligation at SFJ with stripping was the commonest surgical procedure carried out our center.

**Conclusion:** It is found that varicose vein disease with its associated sequelae brings the patient for treatment in our scenario. Long saphenous vein is the commonly affected part of the superficial venous system because of incompetency of the valve at SFJ. Although various etiological factors can be attributed to varicose vein disease but occupation and obesity remain the main factors. Accurate assessment of problem and adequate surgery will prevent recurrence.

**Key Words:** Varicose veins, venous ulcers, recurrent varicose veins.

## INTRODUCTION

Varicose vein disease is predominantly a cosmetic problem of the females of western world. In our country the overall prevalence is comparatively low and patients commonly present with some complications. Varicose veins have

been recognized as a chronic disorder of surgical importance since ancient times. The term “Varicose” was derived from Latin word “VARICOUS”, which means “dilated”. According to U.S. statistics 23% of American adults have varicose veins.<sup>1</sup> If spider telangiectasis and

reticular veins are also considered, then the prevalence increases upto 80% in males and 85% in females<sup>2</sup>

Varicose vein disease is characterized by dilated, elongated and tortuous superficial veins of lower limbs which may permit reverse flow of blood due to faulty valves. In the initial stages of the disease the patient is concerned about the unsightly appearance of dilated tortuous veins, but if left untreated, the later stages are marked by itching due to dermatitis, swelling and ulceration. In the Indian scenario the disease is one of the common surgical problems of low socioeconomic groups. The problem can affect them economically as it can lead to absenteeism from work and sometimes compels them to change the job. This study was carried out with an aim of studying the clinical profile of varicose vein disease. The demographic pattern, clinical presentation, comorbidities, and outcome of the treatment was analysed in the study.

## MATERIAL AND METHODS

This descriptive observational study was carried out from 1<sup>st</sup> January 2017 to 30<sup>th</sup> June 2018. In this, the clinical profile of varicose vein disease was studied in 52 patients. The study was initiated after approval of the Institutional Ethics and Research Committee. All admitted patients of varicose vein disease were included in the study as per the inclusion/exclusion criteria. Thorough clinical history recorded and complete clinical examination was carried out with special emphasis on varicose veins and its sequel. All details regarding the management of these patients with specific investigations and operative procedure were recorded on proforma. At the end of the study, the data was entered on a master chart. The collected data was tabulated and Analysis was done by descriptive statistical method. At no stage of this study the individual identity Of the patient was disclosed.

## OBSERVATIONS AND RESULTS

Table number 1: distribution of patients according to age and sex

Age Group	Female(8)		Male(44)		Total(52)	
	No.	%	No.	%	No.	%
<20 years	0	0.0	1	2.3	1	1.9
21-30 years	0	0.0	7	15.9	7	13.5
31-40 years	2	25.0	10	22.7	12	23.1
41-50 years	4	50.0	12	27.3	16	30.8
51-60 years	1	12.5	10.	22.7	11	21.2
61-70 years	1	12.5	3	6.8	4	7.7
>70 years	0	0.0	1	2.3	1	1.9
Total	8	100.0	44	100.0	52	100.0

Table No.1 shows the distribution of patients in this study according to age and sex. There were eight females and forty four males in the study, which shows a male preponderance. There was one patient {1.9%} in age group between 21-30 years. Twelve patients were in the age group 31-40 years. Maximum patients{30.8%} were from the age group between 41-50 years followed by the age group between 31 to 40 years This denotes that most of the patients{<50%} of varicose vein disease seek surgical treatment in their middle age. This can be attributed to the complications like pain, discoloration and ulceration, which start after prolonged conservative measures. This can be an important socioeconomic fact, as individuals from this age group are the sole bread winners of their families. Any absenteeism from work because of disease or complication of the treatment can be disastrous to their family.

Table number 2: distribution of patients according to occupation

Occupation	No.	%
Farmer	20	38.5
Construction worker	8	15.4
Laborer	6	11.5
Coolie	5	9.6
Housewife	5	9.6
Shopkeeper	2	3.8
Student	2	3.8
Bus conductor	1	1.9
Daily wage worker	1	1.9
Machine turner	1	1.9
Police trainee	1	1.9
Total	52	100.0

The above table No 2 shows the distribution of patients in this study according to their Occupation. There were 20 {38.5%} farmers, 8{15.4%} construction workers, 6 labourers, 5 {9.6%} were coolies. Remaining twenty percent patients

were doing sedentary jobs like being housewife, students and office work. This clearly indicates that individuals involved in hard physical work are more prone to get varicose vein disease and its complications.

**Table number 3: distribution of patients according to limb involvement**

Lower limb involvement	No.	%
Bilateral	23	44.2
Unilateral	29	55.8
Total	52	100.0

The above table shows the distribution of patients according to lower limb involvement. There were 29{55.8%} patients with unilateral lower limb involvement, whereas 23{44.2%} had bilateral lower limb involvement.

**Table number 4: distribution of patients according to presenting complaints**

Presenting Complains	No.	%
Dilated veins	47	90.4
Skin changes	36	69.2
Dull aching night pain	26	50.0
Ulcer	21	40.4
Edema	17	32.7

The above table {Table No.4} shows the complaints with which the patients presented. Forty seven {90.4%} presented with dilated veins, while 37 {69.2%} presented with skin changes. Dull aching night pain was a complaint in 26 patients. Twenty one {40.4%} presented with ulceration. Majority of patients presented with dilated veins and skin changes.

**Table number 5: patients with comorbidities**

Associated Comorbidities	No.	%
Hypertension	11	21.2
Diabetes Mellitus type-2	12	23.1

Table number 5 shows the distribution of patients according to the comorbidities. Hypertension {21.2%} and Diabetes Mellitus {23.1%} were the comorbidities seen in the 52 patients of this study.

**Table number 6: patients with previous limb surgery**

Previous leg surgery	No.	%
Ligation of dilated veins left lower limb	1	33.3
Stripping of varicose veins ligation at SFJ	2	66.7
Total	3	

The above table shows patients with previous surgery for the same problem. These are the three patients of recurrent varicose vein disease. One patient had

undergone Ligation of perforators and the other two had Ligation at saphenofemoral junction with stripping of the vein.

**Table number 7: patients with previous deep vein thrombosis**

Previous DVT	No.	%
No	49	94.2
Yes	3	5.8
Total	52	100.0

The above table shows the number of patients with a history of deep vein thrombosis in the affected limb in the past. There was a history of deep vein thrombosis in 3{5.8%} out of 52 patients in the study.

**Table number 8: distribution of patients according to BMI**

BMI (WHO Classification)	No. of patients	%
Normal Weight(18.5-24.9 kg/m <sup>2</sup> )	32	61.5
Overweight(25.0-29.9 kg/m <sup>2</sup> )	17	32.7
Obese(>30 kg/m <sup>2</sup> )	3	5.8
Total	52	

The above table shows the distribution of patients according to BMI. The BMI was classified according to WHO classification. There were 32{61.5%} patients in the group of normal weight. Seventeen {32.7%} out the 52 in the study overweight and 3{5.8%} were in the obese group.

**Table number 9: distribution of patients according to doppler findings**

Doppler Findings	No. of patients	%
SFJ incompetence	38	73.1
SPJ incompetence	18	34.6
Perforator incompetence	47	90.4
Dilated tortuous GSV / SSV	42	80.8
DVT	3	5.8

The above table shows the distribution of patients according to Doppler findings. There were 38{73.1%} patients with SFJ incompetence and 18{34.6%} with SPJ incompetence. Forty seven {90.4%} had in competence of valves of perforator veins. Three patients had deep vein thrombosis which resulted in secondary varicose veins.

**Table number 10: distribution of patients according to surgeries performed**

Surgery	Frequency	Percent
SFJ flush ligation with stripping of LSV	2	6.1
SFJ flush ligation with stripping of LSV with perforator ligation	16	48.5
SFJ, SPJ flush ligation with stripping of LSV with incompetent perforator ligation	9	27.3
SPJ ligation with stripping of SSV with incompetent perforator ligation	1	3.0
SPJ ligation with incompetent perforator ligation	2	6.1
Perforator ligation	3	9.1
Total	33	

The above table shows various types of surgical treatment the patients of this study. Out of the thirty three operated patients 27{82%} had undergone ligation at saphenofemoral junction and stripping of the long saphenous vein. In three {9%} patients the sapheno popliteal junction was ligated and remaining three only the perforators were ligated.

## **DISCUSSION**

The observational study on the clinical profile of Varicose Vein Disease was conducted in the Department of Surgery of Sri Aurobindo Medical College and Postgraduate Institute from January 2017 to June 2018. This study was planned with the aim to identify the various demographical, clinicopathological and occupation related factors in the causation of varicose vein disease in the population served by our center. Two-third of the patients in our study were from the age group between 21 to 50 years. If the patients between 51 to 60 years are added then it becomes almost 90%. In a study done by Mulla et al, mean age of the study population was 45.6 years with a range of 21 to 70 years.<sup>3</sup> Gad et al. found 90% of patients in the age group between 20 to 56 years.<sup>4</sup> This age group is the backbone of any society. They are the breadwinner of family and any disease in this age group can affect the welfare of family. Morbidity due to varicose veins disease can lead to absenteeism from work and financial losses. Associated morbidities such as diabetes and hypertension can further aggravate the problem. Diabetes Mellitus can be a detrimental actor in the outcome from surgical treatment of varicose vein disease. As the age advances, comorbidities start playing an important role in the outcome of surgery. In our study, out of 52 patients 44 were males, which shows a clear male preponderance. This could be explained by the fact that the males were involved in such occupations which needed prolonged standing. Our study had twenty farmers and twenty one construction workers. In a study on the incidence of

varicose veins in factory workers by Widmer et al., it was found that among the male and female factory workers, the incidence was higher in males.<sup>5</sup> Secondly we believe that the female population in our society does not come with complaints of varicose veins of lower limb because the lower limbs are well covered in all ethnic dresses. Whereas the male population become aware of the varicose veins because of persistent pain in calves due to engorged veins, dermatitis, and varicose ulcers. In the western world the male and female ratio of varicose veins is equal. Abramson et al. conducted a study in Jerusalem which showed four times higher incidence of varicose veins in females. They attributed the higher incidence to obesity in these females as the major contributory factor in the causation of varicose veins.<sup>6</sup> Our study had 29{55.8%} patients with unilateral varicose veins, whereas 23{44.2%} patients had bilateral involvement. Mishra et al. in a study of 60 patients, found 54 {90%} patients with unilateral involvement, which is a similar finding to our study. Presentation with involvement of unilateral limb does not rule out the possibility of disease in other limb at a later date.<sup>7</sup> In our study the commonest symptom was pain which was seen in 47 out of 52 patients. Thirty six {69%} patients presented with skin changes and 26 {50%} came for treatment of varicose veins with varicose ulcer. W.B. Campbell et al. in their study reported that 50% patients came for cosmetic reasons for the treatment of varicose veins. Varicose veins lead to disfigured lower limb due to unsightly tortuous dilated veins and stasis dermatitis with pigmentation. In our country pain is the most common presenting feature as shown in various studies.<sup>8</sup> Obesity has a definite role in the causation of varicose vein disease. In our study 20 patients {38%} had BMI higher than 25Kg/m<sup>2</sup>. In the study done by Mishra et al. half of their patients were overweight or obese, Increase in BMI is an important determining factor in the etiology of varicose vein disease. Davies et

al. have coined a term “Phlebesity”, in the description of varicose veins in obese in their review article. Clinical and pathophysiological correlation of obesity and varicose veins, chronic insufficiency is well established. Clinical severity of venous insufficiency worsens in obese patients.<sup>9</sup> Out of the 52 patients thirty three were operated and followed. Although the follow up was short, as the study period extended for 18 months .A long term follow up is necessary to assess the results of surgery. The most common surgery performed was Trendelenburg ligation at saphenofemoral junction with stripping of long saphenous vein and ligation of perforators. Gad et al. have studied the problem of recurrence after surgery and conclude that SFJ ligation with stripping has the lowest recurrence.<sup>4</sup> Reason for recurrence could be progression of disease, anatomical anomaly overlooked at the initial surgery or neovascularization.<sup>10</sup> In our study average stay of patients was seven days, with a range between 6-10 days. Huded et al. reported that 40% of their patients stayed for 6-10 days.<sup>11</sup> Both studies have similar figures. Our study was conducted for a short period, hence the number was less and follow up was not adequate. We recommend long term studies to have better perspective of the varicose vein disease in our country. The problem of varicose vein is important as the patients can have prolonged morbidity and absenteeism from work. Newer advancement in the treatment of varicose veins, especially endovascular laser ablation, radiofrequency ablation therapies have shown promising results however expensive and presently, out of reach of all the patients.

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