

**OUR EXPERIENCE IN THE MANAGEMENT OF VARICOSE VEINS OF THE LOWER LIMB**Ravikumar B. L<sup>1</sup>, Satish Kumar R<sup>2</sup>, Jose V. Francisco Menezes<sup>3</sup>, Ayush Jain<sup>4</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT:** Varicose veins of the lower limb are a common problem .It is known as the 'penalty against gravity'. The prevalence has been variously reported from as little as 2% to over 20% in population studies. This enormous variation results from the different populations studied, different definitions applied and the different assessment or examination techniques used. Western studies have shown that 20% population suffers from varicose vein and 1% has skin changes proceeding to venous ulceration. In India incidence of varicose veins seems to be far less common because in India most patients present late with complications of varicose veins such as pain, edema, pigmentation and ulceration. We present our experience in the management of varicose veins of the lower limb over 2 years at our institution. **AIMS AND OBJECTIVES:** 1. To study the incidence of varicose veins according to age, sex and occupation. 2. To study spectrum of clinical presentation in varicose veins. 3. To study effect of surgery in healing of varicose ulcers if present. **MATERIALS AND METHODS:** A total of 50 patients admitted to our institution between 2010 and 2012 were included in this study. It is found that varicose veins and their associated symptoms and complications constitute the most common chronic vascular disorders leading to surgical treatment. The incidence is on rise. It is more common in middle-aged group. The majority of the patients were males in the study. Patients presented with spectrum of symptoms and signs, with pain being more common presenting symptom with or without venous ulcer. The study revealed increased incidence of varicosity in the left lower limb as compared to the right lower limb. Most of the patients presented to the hospital for one of the other complications, not for the cosmetic purpose. Long saphenous system is the most common venous system affected. **CONCLUSION:** Operative line of treatment is the primary procedure in the management of varicose veins of lower limb and venous ulcer. Saphenofemoral junction ligation with Stripping of LSV with perforators ligation is good approach. There is need of general health education and awareness about varicose veins in society in order to achieve timely treatment, good outcome and decrease morbidity.

**KEYWORDS:** Varicose Veins, Vascular surgery.

**INTRODUCTION:** "Varicosity is the penalty against gravity". This saying is very apt as this disease is associated with those occupations that involve standing upright for long durations. The varicose vein and their associated symptoms and complications constitute the most common vascular disorder of the lower extremities. According to western countries it affects more than 5 % of adult population but in India incidence of varicose veins seems to be far less common because in India most patients never come for varicose veins as such, but for complications of varicose veins such as pain, edema, pigmentation and ulceration.

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**METHODS:** A prospective study conducted over 2 years from 2010 to 2102. A total of 50 patients admitted to the institution with varicose veins of the lower limbs. All varicose veins cases involving large and short saphenous vein were included after excluding those varicose veins with deep vein thrombosis and recurrent varicose veins. The study data was collected as per the proforma prepared for study of varicose veins. The clinical finding with coexisting medical illness was recorded in detail. Routine investigations and pre-operative marking of perforators with doppler scan were done.

Pre-operative treatment, operative findings and post-operative outcome were documented. The details of cases of varicose veins were drawn as a master chart with record of only relevant and positive findings. All the cases were operated under spinal anaesthesia. Routine follow up was done during the immediate post-operative period and every day till discharge. Attention was paid to note the development of any complications. Treatment was administered from time to time according to the needs of patients. Most of patients who underwent surgery received IV fluids for a day, antibiotics and analgesics.

After removal of sutures and improvement of general condition, the patients were discharged from the hospital with an advice regarding diet, rest, type of work to done, drugs to be taken and to prevent long standing, and usage of elastic crepe bandage, etc. and with a further advice to come to check up once in 7 days for 2 weeks and further once in a month. The general condition and examination of operated limb were carried out to find out the healing of wounds, any presence of tenderness and recurrence.

**STATISTICS:** Descriptive statistical analysis was carried out. Results on continuous measurements are presented on Mean SD (Min-Max) and results on categorical measurements are presented in Number (%). Significance is assessed at 5 % level of significance. 95% Confidence Interval has been computed to find the significant features.

**RESULTS:** The age of these patients ranged from 20 yrs. to 69 yrs. Mean  $\pm$  SD: 42.14 $\pm$ 13.58. The commonest age group of over patients was between 41 to 50 yrs. (26 %). Out of 50 patients, 37 were male and 13 were female (M: F=2.8:1). Most of patients were of agriculture background (40%) or of occupation that involved standing (14%).

**Clinical Presentation:** Left limb was more affected 35 cases (70%) with 95% CI- (56.25 – 80.90) than right limb 15 cases (30%) with 95% CI – (19.10 -43.75) Patients presented with varied symptoms, out of which Pain was most common 38 (82%) patients followed by dilated veins 36 (72%) patients. Only Long saphenous system is the most common venous system affected by varicosity (90%) with CI – (78.24 –95.69). SFJ Incompetence is seen in (88%) patients with CI – (76.20-94.38). Total number of complications was 7; Hematoma was commonest with 4 cases followed by Wound Infection in 2 cases. Mean hospital stay  $\pm$  SD: 4.16 $\pm$ 1.92

**DISCUSSION:** The results of our study were analyzed and compared with other similar studies. In our study the age range is from 20 yrs. to 69 yrs. Malhotra et al<sup>3</sup> in their study comprising 677 patients from both North and South India had an age range of 18-65 years. In the West Wright et al<sup>4</sup> in their study of 1338 patients in England had an age range of 20-75 years. In our series male to female ratio was found to be 3:1. Widmer<sup>5</sup> in Switzerland recorded a ratio of 1:1. Callam et al<sup>6</sup> in England and

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Leipnitz et al<sup>7</sup> recorded a ratio of 1:2. The decreased occurrence of disease in females at our set up may be due to the fact that our middle class and lower class women are not much worried about the cosmetic appearance. In our study most patients were farmers (40%) followed by shopkeepers(20%), bar tenders(6%) and manual laborers (6%) who involved in long standing work hours.

In our study, left lower limb was involved in 35(70%) cases and right lower limb was involved in 15(30%) cases. In the present study, the commonest symptom in 38 (76%) cases was pain. 36 (72%) cases had complaints of dilated veins in the affected limb and 10(20%) cases had limb edema, venous ulcer was present in 21(42%) of cases. These findings are different as compared to other studies done by W.B. Campbell et al,<sup>8</sup> with cosmetic symptoms being 90% and aching pain 57% because in our country patient come to hospital for some symptom rather than cosmetic appearance.

In our study perforator involvement is 88% as compare to Labropoulos N et al<sup>9</sup> in which they found it 68 %. In this series, long saphenous vein was involved in 90% of cases (45 patients), the short saphenous vein in 4% (2 patients) and both long and short in 6% (3cases). Delbe and Mocquet<sup>10</sup> in their study had found varicosity of long saphenous vein in 98% and only 2% in short saphenous vein. Incompetent perforator was noted in 44 (88%) cases in our study.

Out of 50 cases, saphenofemoral junction ligation including the ligation of anatomically constant tributaries at its termination with stripping of long saphenous vein by Mayo's stripper and ligation of incompetent perforator was done in 28 cases. Sapheno-popliteal flush ligation was done in 5 cases, SFJ and SPJ ligation with stripping of LSV in 3 cases, only SFJ ligation done in 6 cases. SSV was not stripped to avoid nerve injury. Flush ligation of SFJ and incompetent perforator ligation was done in 7 cases. Only incompetent perforator ligation was done in 4cases.

In our series recurrence seen after only SFJ ligation is 50% which is slightly more than Sarin et al<sup>11</sup> that is 45% in Indian population. In our series recurrence is 0% with SFJ ligation with stripping as compare to Sarin et al<sup>11</sup> who had 18 % recurrence. This difference could be because of long follow up in their study as compare to ours that is 6 months to 1 year. With SFJ ligation and perforator ligation also we found less recurrence 7.1% as compare to 18.5% of Sarin et al.<sup>11</sup> In this study we found ulcer recurrence in 4(20%) patients out of 21 patients presented with venous ulcer.

In our study, we encountered 7 cases of complication, the commonest being hematoma in 4 cases. There was no incidence of deep vein thrombosis. Literature shows the incidence to be very low at 0.01%.

**CONCLUSION:** Varicosity of the lower limb is a common clinical entity. The number of cases reporting to the hospital is much less than the real incidence; because in the absence of symptoms due to varicose veins patients do not seek treatment in our country. The commonest age group of patients suffering from varicose veins is 41 to 50 years. Most of the patient presented to the hospital for one or the other complications not for the cosmetic purpose. A definite relationship exists between the occupation and the incidence of varicose veins as most of our patient belongs to workers standing for longer duration.

The involvement of long saphenous system is more common than the short saphenous system. Left limb is affected more common. The cause for the same is not known but could be attributed to the longer course traversed by the left iliac veins. Operative line of treatment is a primary procedure in the management of varicose veins of lower limbs. Saphenofemoral junction

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ligation with LSV stripping with perforator ligation and non-stripping of SSV is associated with no recurrence and morbidity. Venous ulcers heal well after surgery. Surgery is a quality modality for varicose veins patients with ulcer with low recurrence rate.

### REFERENCES:

1. Johnson G, Jr. 'Management of Venous Disorders'. In Vascular surgery by Rutherford RB, 4thEdn. Vol II, W.B. Saunders Company; 1995: 1671-1862.
2. Russell RCG, Williams NS, Bulstrode CJK. Venous disorders in Bailey and Love's Short practice of Surgery, Ch.54; 25th Edn; Arnold publications; 2008: 925-943.
3. S L Malhotra. An Epidemiological Study of Varicose Veins in Indian Railroad Workers from the South and North of India, with Special Reference to the Causation and Prevention of Varicose Veins. International J. Of Epidemiology 1972; (1): 177-183
4. Wright et al. The prevalence of venous disease in a west London population. In: Davy A, stemmer R, Eds. Phlebology' 89. Paris: libbey Eurotext, 1989: 176-8.
5. Widmer LK ed. Peripheral venous disorders prevalence and socio-medical importance. Bern: Hans Huber, 1978:1-90.
6. Callam, M. J. Epidemiology of varicose veins. British Journal of Surgery, 1994: 81; 167-173
7. Leipnitz et al. Prevalence of venous disease in the population: first results from a prospective study carried out in greater Aachen In Davy A, Stemmer R, Eds, Phlebology, Paris: john libbey Eurotext, 2006:169 -71.
8. W.B. Campbell. Venous ulceration. J Dermatol Surg Onco 19:764 2003.
9. Labropoulos N. et al. Where does venous reflux start? J Vasc Surg 1997; 26(S) 738- 742.
10. Delbe and Mocquet. Varicose veins and deep vein thrombosis: epidemiology and suggested aetiology. Br Med J 2:556, 2005.
11. S. Sarin, J H Scurr and P.D. Coleridge smith. "Assessment of stripping the long saphenous vein in the treatment of primary varicose veins, Br. J. Surg 2004 sept. 889-990.

Age in years	Number of patients	%
11-20	2	4.0
21-30	10	20.0
31-40	12	24.0
41-50	13	26.0
51-60	8	16.0
61-70	5	10.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

**Table 1: AGE DISTRIBUTION**

Mean  $\pm$  SD: 42.14 $\pm$ 13.58

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Gender	Number of patients	%
Male	37	74.0
Female	13	26.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

**TABLE 2: GENDER DISRIBUTION**

Occupation	No. of cases	Percentage
Farmer	20	40
Shopkeeper	10	20
Others	07	14
House wife	06	12
Bar Tender	03	06
Masons	03	06
Traffic Police	01	02
<b>Total</b>	<b>50</b>	<b>100</b>

**TABLE 3: OCCUPATION**

SIDE	No. OF CASES - 50	PERCENTAGE	95 % CI
Right	15	30 %	19.10 -43.75
Left	35	70 %	56.25 - 80.90

**TABLE 4: SIDE AFFECTED**

SYMPTOM	NO. OF PATIENTS	PERCENTAGE	95% CI
Pain	38	76.0	62.59-85.70
Dilated veins	36	72.0	58.33-82.53
Ulcer	21	42.0	27.86-53.85
Edema	10	20.0	11.24-33.04

**TABLE 5: SYMPTOMATOLOGY**

SYSTEM INVOLVED	NO. OF PATIENTS	PERCENTAGE	95% CI
Only LSV	45	90.0	78.24-95.69
Only SSV	2	4.0	1.86 - 14.13
LSV + SSV	3	6.0	2.06-16.22
SFJI	44	88.0	76.20-94.38
SPJI	5	10.0	4.35-21.36
PI	44	88.0	76.20-94.38

**TABLE 6: VENOUS SYSTEM INVOLVED**

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PROCEDURE DONE	No. OF PATIENTS- 50	PERCENTAGE
SFJL+S+PL	28	56.0
SFJL+PL	7	14.0
SFJL	6	12.0
SFJL+SPJL+S+PL	3	6.0
PL	4	8.0
SPJL+PL	2	4.0

**TABLE 7: TREATMENT**

COMPLICATIONS	NO. OF CASES	PERCENTAGE
Bleeding	01	02 %
Hematoma	04	08 %
Wound infection	02	04 %

**TABLE 8: COMPLICATIONS**

Total number of complications was 7; Hematoma was commonest with 4 cases followed by Wound Infection in 2 cases.

No. of DAYS	No. of PATIENTS	PERCENTAGE
2-3	17	34.0
4-5	26	52.0
6-7	4	8.0
>7	3	6.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

**TABLE 9: HOSPITAL STAY**

Mean  $\pm$  SD: 4.16 $\pm$ 1.92

Age in years	Number of patients	Number of patients with recurrence of Varicose of veins	% of recurrence of varicose of veins
<20	2	0	0.0
21-30	10	2	20.0
31-40	12	0	0.
41-50	13	1	7.7
51-60	8	2	25.0
61-70	5	1	20.0
<b>Total</b>	<b>50</b>	<b>6</b>	<b>12.0</b>

**TABLE 10: CORRELATION OF AGE WITH RECURRENCE OF VARICOSE OF VEINS**

Recurrence of varicose of veins is positively associated with higher age with P=0.390

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Type of surgery	Number of patients	Number of patients with recurrence of Varicose of veins	% of recurrence of varicose of veins
SFJL+S+PL	28	0	0.0
SFJL+PL	7	2	28.6
SFJL	6	3	50.0
SFJL+SPJL+S+PL	3	0	0.0
PL	4	1	25.0
SPJL+PL	2	0	0.0
<b>Total</b>	<b>50</b>	<b>6</b>	<b>12.0</b>

**TABLE 11: CORRELATION OF TYPE OF SURGERY WITH RECURRENCE OF VARICOSE OF VEINS**

Incidence of recurrence of varicose of veins is significantly more associated with only SFJL, followed by SFJL+SFPL, and SFPL with  $P=0.005^{**}$

Type of surgery	Number of patients	Number of patients with recurrence of ulcer	% of recurrence of ulcer
SFJL+S+PL	16	2	12.5%
SFJL+PL	1	1	100%
SFJL	0	0	0.0%
SFJL+SPJL+S+PL	2	0	0.0%
PL	2	1	50.0%
SPJL+PL	0	0	0.0%
<b>Total</b>	<b>50</b>	<b>4</b>	<b>8.0%</b>

**TABLE 12: CORRELATION OF TYPE OF SURGERY WITH RECURRENCE OF ULCER**

Incidence of recurrence of ulcer is not statistically associated with type of surgery with  $P=0.600$

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