

**ORIGINAL RESEARCH**

# Clinico-Radiological Evaluation and Treatment of Lower Limb Varicose Veins at a Tertiary Care Centre

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**ABSTRACT**

**Background:** Varicose veins can cause a variety of symptoms of discomfort in the legs, but it is important to try to differentiate these from the many other reasons for leg pains. Hence; the present study was conducted for clinico-radiological evaluation and treatment among patients with varicose veins of lower limb. **Materials & methods:** A total of 30 patients who were diagnosed with varicose veins of lower limb were enrolled. Complete demographic and clinical details of all the patients were assessed. Radiographic profile of all the patients was evaluated. Management was done either by conservative or surgical measures depending upon the evaluation of the patient. Patients were followed up for up to one year. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. Univariate analysis was done for assessment of level of significance. **Results:** A total of 30 patients were evaluated. Mean age of the patients was 45.3 years. 70 percent of the patients were males. Unilateral involvement occurred in 73.33 percent of the patients. Clinical profile included dull aching pain, non-healing ulcer, night cramps and deep vein thrombosis in 60 percent, 33.33 percent and 10 percent of the patients respectively. Common femoral vein involvement occurred in 56.67 percent of the patients. SPJ competence was seen in 26.67 percent, 16.67 percent and 30 percent of the patients with Class 2, Class 4 and Class 6 grading. SEJ flush with GSV stripping, SEJ flush ligation with perforator ligation, SEJ flush ligation and Subfascial perforator ligation were done in 60 percent, 13.33 percent, 10 percent and 10 percent of the patients respectively. While assessment the outcome, in 86.67 percent of the patients, pathologic was relieved. **Conclusion:** Varicose veins are a combination of permanently elongated and dilated veins and should undergo surgical treatment specially to avoid any future ulceration.

**Keywords:** PIH, Face hyperpigmentation, Melasma, Ephelides

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**INTRODUCTION**

The management of superficial and deep venous reflux and obstruction that leads to the development of varicose veins (VV) and the post-thrombotic syndrome (PTS)<sup>2</sup> forms a large part of the workload for most vascular and endovascular specialists and is likely to increase as the population ages. However, the epidemiology, genetics and pathophysiology of these conditions remains incompletely defined and many clinicians lack a clear understanding of the underlying anatomy and vascular biology. As a result, treatment outcomes are not infrequently sub-optimal.<sup>1-3</sup>

Varicose veins can cause a variety of symptoms of discomfort in the legs, but it is important to try to differentiate these from the many other reasons for leg pains. The Edinburgh vein study found that the symptoms significantly associated with varicose vein were itching, heaviness, and aching, but the relation of these with varicose veins was inconsistent, particularly in men. Traditional pointers to symptoms being caused by varicose veins include worsening of symptoms after prolonged standing or walking and towards the end of the day, relieving symptoms by elevating the legs or wearing support hosiery, and tenderness over the veins.<sup>4-6</sup> Hence; the present study was conducted for clinico-radiological evaluation and

treatment among patients with Varicose Veins of Lower Limb.

### MATERIALS & METHODS

The present study was conducted for clinico-radiological evaluation and treatment among patients with Varicose Veins of Lower Limb. A total of 30 patients who were diagnosed with varicose veins of the lower limb were enrolled. Complete demographic and clinical details of all the patients were assessed. The radiographic profile of all the patients was evaluated. Management was done either by conservative or surgical measures depending upon the evaluation of the patient. Patients were followed up for up to one year. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. Univariate analysis was done for assessment of level of significance.

### RESULTS

A total of 30 patients were evaluated. The mean age of the patients was 45.3 years. 70 percent of the patients were males. Unilateral involvement occurred in 73.33 percent of the patients. Clinical profile included dull aching pain, non-healing ulcer, night cramps and deep vein thrombosis in 60 percent, 33.33 percent and 10 percent of the patients respectively. Common femoral vein involvement occurred in 56.67 percent of the patients. SPJ incompetence was seen in 26.67 percent, 16.67 percent and 30 percent of the patients with Class 2, Class 4 and Class 6 grading. SEJ flush with GSV stripping, SEJ flush ligation with perforator ligation, SEJ flush ligation and Subfascial perforator ligation were done in 60 percent, 13.33 percent, 10 percent and 10 percent of the patients respectively. While assessment the outcome, in 86.67 percent of the patients, pathologic was relieved.

**Table 1: Demographic and clinical data**

Variable	Number	Percentage
Mean age (years)	45.3 years	
Males	21	70
Females	9	30
Unilateral involvement	22	73.33
Bilateral involvement	8	6.67
Dull aching pain	18	60
Non-healing ulcer	10	33.33
Night cramps	3	10
Deep vein thrombosis	2	6.67
Common femoral vein involvement	17	56.67

**Table 2: Correlation of clinical grades with SPJ incompetence (Doppler Study)**

Class	SPJ incompetence (n)	SPJ incompetence (%)
Class 1	0	0
Class 2	8	26.67
Class 3	0	0
Class 4	5	16.67
Class 5	0	0
Class 6	9	30

**Table 3: Type of surgery**

Type of surgery	Number	Percentage
SEJ flush with GSV stripping	18	60
SEJ flush ligation with perforator ligation	4	13.33
SEJ flush ligation	3	10
Subfascial perforator ligation	3	10
Others	2	6.67
Total	30	100

**Table 4: Outcome**

Outcome	Number	Percentage
Relieved	26	86.67
Not relieved	4	13.33
Total	30	100

### DISCUSSION

Lower extremity venous insufficiency, also known as reflux or incompetence, is a condition where the

normal one-way return of venous blood back to the heart has been disrupted and blood flow is bidirectional. Thin, pliable valves normally present in

all peripheral veins normally prevent retrograde flow of blood; failure or damage to the valves is thought to be responsible for venous insufficiency. Factors predisposing to insufficiency include lifestyle factors, central venous hypertension, thrombosis, or inherited variations in valve number or fragility. When valves fail and veins are incompetent, this can lead to local venous hypertension, venous engorgement/enlargement, tissue edema, and changes in tissue perfusion. These changes may be localized or affect an entire extremity. Varicose veins, visibly enlarged tortuous superficial veins, are the externally visible manifestation of superficial lower extremity venous insufficiency. Any vein may be involved, including the great/small saphenous, perforators or small venules. Varicosities may be caused by incompetence in the vein itself or incompetent perforators that expose the superficial veins to high pressures from the deep system.<sup>7-9</sup> Hence; the present study was conducted for assessing the Clinico-Anatomical and Radiological findings among patients with Varicose Veins of Lower Limb.

A total of 30 patients were evaluated. The mean age of the patients was 45.3 years. 70 percent of the patients were males. Unilateral involvement occurred in 73.33 percent of the patients. Clinical profile included dull aching pain, non-healing ulcer, night cramps and deep vein thrombosis in 60 percent, 33.33 percent and 10 percent of the patients respectively. Common femoral vein involvement occurred in 56.67 percent of the patients. SPJ competence was seen in 26.67 percent, 16.67 percent and 30 percent of the patients with Class 2, Class 4 and Class 6 grading. SEJ flush with GSV stripping, SEJ flush ligation with perforator ligation, SEJ flush ligation and Subfascial perforator ligation was done in 60 percent, 13.33 percent, 10 percent and 10 percent of the patients respectively. While assessment the outcome, in 86.67 percent of the patients, pathologic was relived. Nagre A et al studied demographic factors, evaluate clinical presentation and outcome of various modalities of management of varicose veins of lower limb. All patients underwent clinical tests and venous doppler and accordingly appropriate treatment in the form of conservative, surgical or endovenous laser ablation was given. Complications following the procedures were studied. A total of 39 (72%) patients out of 54 were below the age of 50 years. Prominent veins over lower limb werethe most common presentation. Sapheno-femoral junction was most commonly involved vein. Male preponderance was observed with a male to female ratio of 12.5:1. Venous Doppler had accuracy of 92.59% in detecting sapheno-femoral and perforator incompetence. Results of endovenous laser ablation are similar to surgery but with less morbidity. Their study revealed the disease is prevalence in active phase of life with male preponderance. The majority of the patients had great saphenous vein incompetency and the complications are more when both great saphenous and perforator

systems are involved. Venous Doppler is the investigation of choice as it has high accuracy.<sup>10</sup>

Lalatendu Swain et al evaluated the frequency and risk factors for different types of varicose veins of lower limb using Doppler ultrasound. Frequency distribution and descriptive statistics of the various types of varicose veins of lower limb were analysed. Varicose veins were commonly observed in the age group 30-50yrs (52%) and less common in the age group 10-20 yrs (4%). It was seen more common unilaterally 32 cases (64%) than bilaterally 18 cases (36%). In this study the commonest clinical presentation is complaint of dilated, tortuous swellings/varicose veins in the lower limb. Patients with varicose veins and chronic venous disease, have varying degrees of incompetence and Color Doppler is very useful in identifying the distribution and extent of reflux in these patients.<sup>11</sup> Joseph N et al assessed the clinico-epidemiological profile, risk factors and management practices in varicose veins. The majority of cases 53(31.2%) were of the age group 41-50 years. Majority were males 127(74.7%) and majority were unskilled workers 101(59.4%). Superficial veins were involved in 123(72.4%) cases. Perforator followed by great saphenous vein were most frequently involved. Veins on the left side were more involved than on the right. Common symptoms at the time of presentation were ulceration 98(57.6%) followed by pain in the legs 96(56.5%). Ulceration was seen significantly more among females ( $p = 0.027$ ) and among housewives ( $p = 0.004$ ). Complications like eczema 46(27.1%), non-healing ulcers 21(12.3%) and deep vein thrombosis 10(5.9%) were reported among cases. Eczema was present significantly more among elderly patients aged above 60 years ( $p = 0.019$ ). Risk factors like prolonged standing were observed in 86(50.6%) cases. This history was significantly seen among males ( $p = 0.001$ ) and among those involved in unskilled occupations ( $p < 0.001$ ). Recurrence of varicose vein was reported in 23(13.5%) cases. It was associated with patients of the age group 21-30 years ( $p = 0.021$ ). Doppler ultrasound was the most common 120(70.6%) investigation done. Micronized purified flavonoid fraction was used in management in 15(8.8%) cases. Conservative management methods like limb elevation 50(29.4%) and compression stocking 36(21.2%) were advised to patients. Saphenous vein stripping was the most common surgical procedure 40(23.5%) performed. The high-risk groups identified in this study need to be made aware of the risk of developing varicose veins. Use of compression stocking at workplace added with newer procedure in management could help in betterment in their quality of life.<sup>12</sup>

## CONCLUSION

Varicose veins are a combination of permanently elongated and dilated veins and should undergo

surgical treatment specially to avoid any future ulceration.

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