

## Clinical Study and Surgical Management of Lower Limb Varicose Veins

S. S. Roychowdhury<sup>1</sup>, Kishlaya Atharwa<sup>2\*</sup>, Arnab Adak<sup>3</sup>

<sup>1</sup>Associate Professor, Department of General Surgery, Calcutta Medical College and Hospital, Kolkata, West Bengal, India.

<sup>2</sup>Senior Resident, Department of General Surgery, Baruipur Super Speciality Hospital, Baruipur, South 24 Parganas, West Bengal, India.

<sup>3</sup>Senior Resident, Lady Dufferin Victoria Hospital, Kolkata, West Bengal, India.

### ABSTRACT

Varicose veins are the chronic venous disorders which are most commonly treated surgically. Varicose veins are common in age group 31- 40 years. Clinical examination of the varicose veins supplemented with Doppler ultrasound has very high accuracy. Operative line of treatment is a primary procedure in the management of varicose veins of lower limbs. The present study included 27 patients with primary varicose vein of lower limbs. The study was aimed at analysis of the clinical features of varicose veins and the patients were subjected to stripping of great saphenous vein with ligation of tributaries of sapheno femoral junction. The patients were closely followed up for 6 months to find out the complications including recurrence following the procedure.

**Keywords:** Varicose Vein, Doppler, Stripping.

### \*Correspondence to:

**Dr. Kishlaya Atharwa,**  
Senior Resident, Department of General Surgery,  
Baruipur Super Speciality Hospital, Baruipur, WB, India.

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### INTRODUCTION

Varicose veins and their associated symptoms and complications constitute the most common chronic vascular disorders leading to surgical treatment. The term varicose is derived from the Latin word meaning dilated. The symptoms of varicose veins range from asymptomatic varicose veins to more severe complications such as discomfort, pain, itching, eczema and deep vein thrombosis.<sup>1</sup> The term "varicosity" is generally applied to elongated, tortuous, pouched, thickened, inelastic and friable vessels which have permanently lost its valvular efficiency. The prevalence has been variously reported from as little as 2% to over 20% in population studies.<sup>2</sup>

The Edinburgh Venous study (EVS)<sup>3</sup> published in 1998 examined over 1500 adults in UK, showed that 39.7% of men and 32.2% of women had a dilated tortuous trunk of the long and/or short saphenous vein and their first or second order branches. The possible risk factor for varicose veins is standing for a long period of time and other risk factors include age, family history and pregnancy.<sup>4</sup> The management alternatives for lower limb varicose veins include Trendelenburg operation, stripping, sub-fascial ligation of perforators, laser, sclerotherapy, and subfascial endoscopic perforator surgery and radiofrequency ablation.

The investigation for more accurate means of treatment and prevention of varicose vein still continues. In this study, we have focused on studying clinical features of primary varicose veins and its treatment with ligation of perforators and stripping of saphenous vein.

### MATERIALS AND METHODS

This was prospective clinical study involving 27 patients who presented with symptoms of varicose veins in lower extremities to Calcutta Medical College Hospital Kolkata, during the period from January 2016 to June 2017.

All patients who presented to our outpatient department with symptoms of primary varicose veins were meticulously examined and later subjected to Colour Doppler studies before they underwent surgery for the same.

### Inclusion Criteria

Patients presenting with signs and symptoms of primary varicose veins.

### Exclusion Criteria

- Secondary varicose vein
- Patients who have previously undergone other treatment like sclerotherapy

After obtaining an adequate history, the patient was examined in standing position with good illumination, exposing both the lower limbs completely. The following tests were performed: Brodie-Trendelenburg test, Schwarts test, Morrissey's cough impulse test, Modified Part he's test, multiple tourniquet test. The result of the tests was noted according to the clinical preformed.

Colour Doppler ultrasonography was performed on patients in standing position along the whole length of the long saphenous and short saphenous systems.

The following signs were specifically looked for:

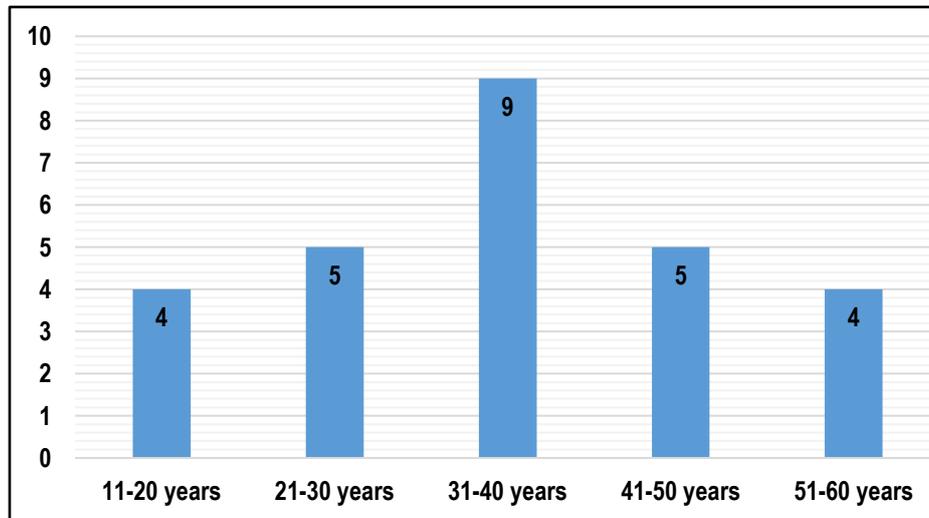
- 1) Saphenofemoral junction incompetence
- 2) Saphenopopliteal junction incompetence
- 3) Perforator incompetence
- 4) Deep venous system
- 5) Presence of abnormal or unnamed veins or perforators

The sites of incompetence were marked.

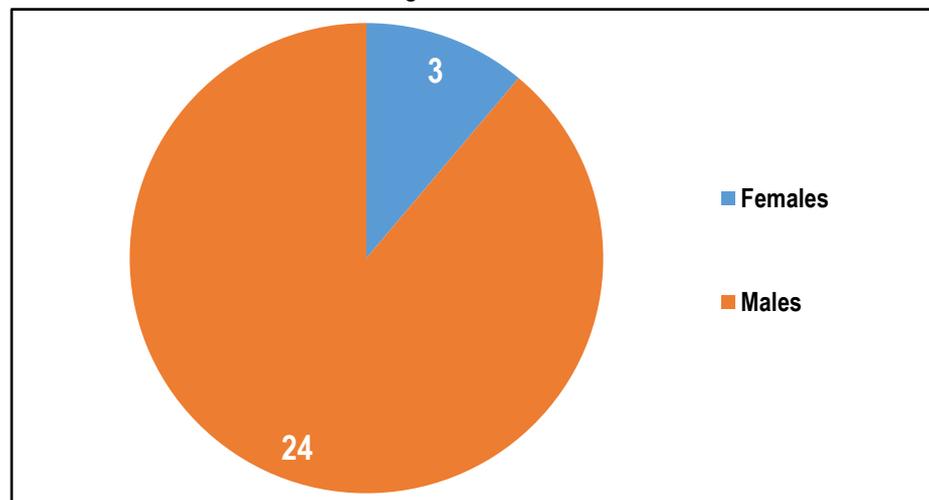
All the patients were subjected to high or flush ligation of saphenofemoral junction with incompetent perforator's ligation and stripping of great saphenous vein.

All patients were discharged after 5 to 10 days with mean 7 days after surgery with elastic bandage. They were all followed up for a minimum of 6 months after they were discharged for Symptomatic relief and Recurrence of varicosity.

**Fig 1: Age distribution: Diag. depicting no. of patients in each age group.**



**Fig 2: Sex distribution**



**Fig 3: Side affected**

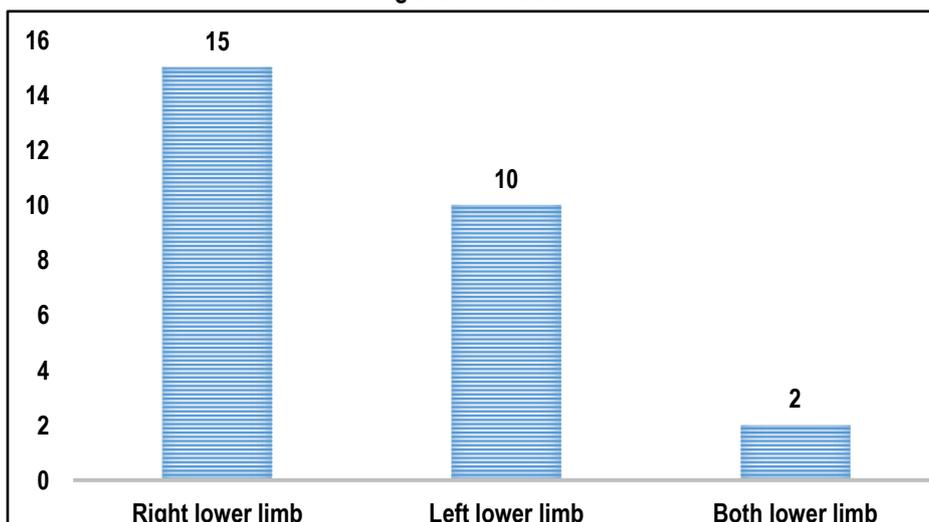


Fig 4: Venous system Involvement

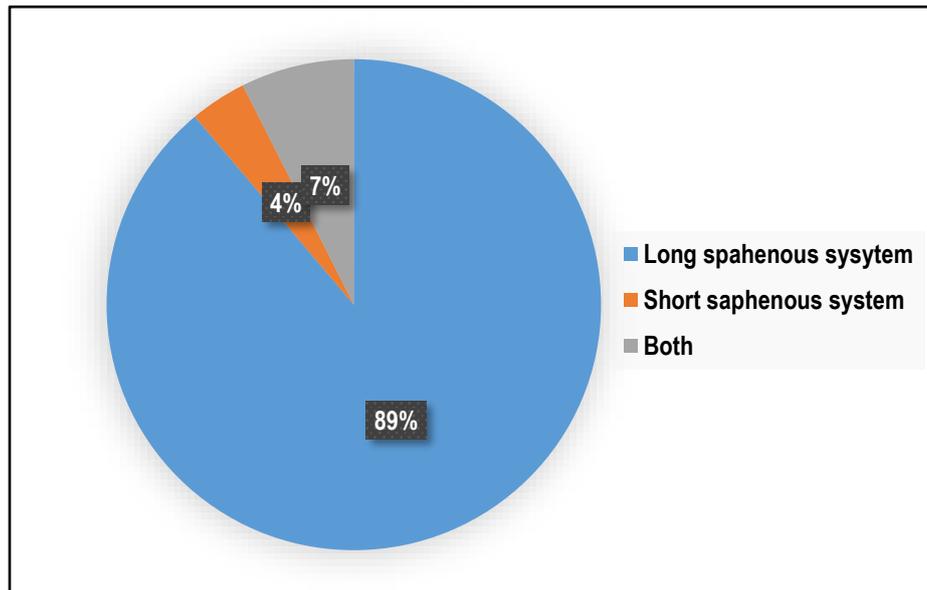


Table 1: Symptoms: Dilated veins (81.48%) were the most common presentation of the patients.

Symptoms	No. of cases
Dilated veins	22
Limb Edema	0
Pain	14
Ulcer	5
Others (skin changes, itching etc.)	11

Table 2: Complications

Complications	No. of cases
Delayed healing	1
Hematoma	2
Infection	0
Limb edema	1
Paraesthesia	0
Recurrence	1
Seroma	3
Asymptomatic	19

**RESULTS**

A total of 27 patients were included in the study and were followed up for a minimum of 6 months.

The right lower leg was most affected side among the patients.

Treatment given: All the patients were subjected to high or flush ligation of saphenofemoral junction with incompetent perforator’s ligation and stripping of great saphenous vein.

**DISCUSSION**

In our study maximum number of patients 9 (33.33%) presented in the 31-40 years age group. This age distribution correlates well with other studies conducted by Campbell et al., who showed the commonest age at presentation to be 30-40 yrs. Out of the 27 cases included in this study 39 cases 24 (88.88%) were male with only 3 female patients (11.22%). This disparity may be due to

the fact the patients are from the low socio-economic background and also cosmesis is not a concern, as these patients do not wear short clothes. All other studies show women to be affected more than men.<sup>5</sup>

In our study, in 15 (55.55%) cases, right lower limb was involved and in 10 (37.03%) cases left lower limb was involved and in 2 (7.4%) both limbs were involved.

In this study, long saphenous vein was involved in 88.88% of cases (24 patients), the short saphenous vein in 3.7% (1 patient) and both long and short in 7.4% (2 patients). Delbe and Mocquet in their study had found varicosity of long saphenous vein in 98% and only 2% in short saphenous vein.

In the present study, the commonest symptom in 22 cases was that of dilated, tortuous veins. 14 cases had complaints of pain in the affected limb and venous ulcer was present in 5 of cases. This findings correlate well with other studies done by Campbell *et al*, with cosmetic symptoms being 90% and aching pain 57%.

All the patients went high or flush ligation of saphenofemoral junction with incompetent perforator’s ligation and stripping of great saphenous vein. Stripping of short saphenous vein was avoided for fear of nerve injury.

Post-operative compression treatment was followed routinely to prevent haematoma formation after stripping and was advised elastic crepe bandage/stockings for three to four months.

In our study, we encountered 8 cases of complication, the commonest being seroma (3 cases), which were subsided with drainage, and haematoma in 2 cases which cleared after about 10 days.

There was no incidence of deep vein thrombosis or pulmonary embolism postoperatively in this series. Various Literatures show the incidence to be very low at 0.01%.

We had 1 (one) recurrence of varicosity in our study with a follow up of a minimum of 6 months. In a small series of this study, it is difficult to assess the results of operative treatment as such assessment should be taken up after a long follow up period of at least five years.

But with the present study we are able to state that varicose vein with incompetence can be very well dealt with ligation of sapheno femoral tributaries and stripping of long saphenous vein.

## CONCLUSION

A total of twenty seven cases of varicose veins of the lower limb have been studied in detail in the present study and we have come to following conclusions.

- 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 of the absence of symptoms.
- The commonest age group of patients suffering from varicose veins is 31 to 40 years.
- The involvement of long saphenous system is more common than the short saphenous system and right limb is affected more common.
- The outcome of cases of primary varicose veins depends on a thorough and complete clinical examination and duplex scan by experienced radiologists.
- Operative line of treatment is a primary procedure in the management of varicose veins of lower limbs. LSV stripping up to knee and none stripping of SSV is associated with less morbidity.
- The procedure adopted for the surgery in the present study enabled the patients to lead almost normal life after surgery.
- Complications are negligible if cases are meticulously selected and operated.
- Though the newer trends in the management of varicose veins are showing good results, they need a long term follow up and there is always cost factor associated with the newer techniques. Due to cost factor and with limited resources as in our country the procedure we performed is still relevant.

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