



## A CLINICAL STUDY ON VARICOSE VEINS OF LOWER LIMBS

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**ABSTRACT****AIM:** The aim is to analyze the incidence, distribution and clinical manifestations of varicose veins of lower limbs.**METHODS:** All the patients admitted with varicose veins of lower limbs in the Department of Surgery in tertiary hospital, Andhra Pradesh, India from October 2015 to June 2017 were studied.**RESULTS:** About 110 patients with primary varicose veins who met the inclusion and exclusion criteria were studied and the incidence, distribution and clinical manifestation were analyzed.**CONCLUSION:** Varicose veins are most prevalent in younger age group, 21 to 40 years with Male: Female ratio of around 3: 1. The long saphenous system is more commonly involved particularly in the left lower limb with above knee perforator involvement being most common. Dragging pain is the most common presenting symptom. The incidence of venous ulcer is higher in the present study compared with other studies i.e. 21%. Varicose veins are more prevalent in occupations involving prolonged standing.**KEYWORDS :****INTRODUCTION:**

Varicose veins is the most common chronic vascular disorder leading to surgical treatment. "Varicosity is the penalty for verticality against gravity".<sup>1</sup> The term varicose is derived from Latin word "varix" meaning a dilated vein, and is probably taken from 'varus' meaning 'bent'.<sup>2</sup>

The definition of varicose veins "Dilated, tortuous trunks of the long or short saphenous vein and their major branches of the first or second order" according to Widmer.<sup>3</sup> The term varicosity is applied for multiple, dilated, tortuous and elongated veins which have permanently lost their valvular efficiency such as hemorrhoids, varicocele and esophageal varices.<sup>4</sup> The diagnosis should be made early, and the type of therapy should be promptly instituted.<sup>5</sup>

Although mortality is minimal, morbidity due to lower limb varicosities causes much misery and enormous loss of man power. There reason to choose treatment for varicose veins is cosmetic in developed countries whereas it is the complications in developing countries like India.

**AIM AND OBJECTIVES:**

The aim of the study is to analyze the age, sex, occupational distribution, clinical manifestations and the incidence of venous ulcers of lower limbs.

**MATERIALS AND METHODS:**

The present study is a longitudinal study for a period of two years, with a follow up of 6 months.

**Source of Data:**

All the patients admitted with varicose veins of lower limbs in the Department of Surgery in NRI General Hospital, Guntur district, Southern India. The selection of the cases was random.

**Sample Size:**

110 patients with lower limb varicosities admitted in all the surgical units from October 2015 to June 2017 were studied.

**Collection of Data:**

All the patients presenting with varicose veins of lower limbs and which met the inclusion and exclusion criteria were selected and detailed history and clinical findings were recorded. The routine investigations were done along with special investigations if necessary. The pre-operative and operative findings were documented. The patients were followed up after 1<sup>st</sup>, 3<sup>rd</sup> and 6<sup>th</sup> months. The details of the cases were drawn in a master chart with

record of only relevant and positive findings.

**Inclusion Criteria:**

- Patients with unilateral and bilateral varicose veins of lower limbs.
- Patients with complicated varicose veins in lower limbs

**Exclusion criteria:**

- Patients with varicose veins as well as peripheral vascular disease (PVD).
- Patients having thrombophlebitis.
- Patients already having deep vein thrombosis (DVT).
- Patients with bleeding disorders.
- Lower limb varicose veins with pregnancy or per abdominal masses.

**Sampling methods / Statistical Analysis:**

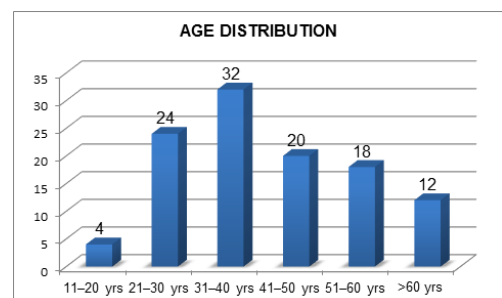
The data collected is analyzed using descriptive statistical principles (like frequencies and percentages).

**RESULTS AND ANALYSIS:**

This study was conducted in a tertiary care hospital during the period of October 2015 to June 2017. About 110 patients with primary varicose veins who met the inclusion and exclusion criteria were studied.

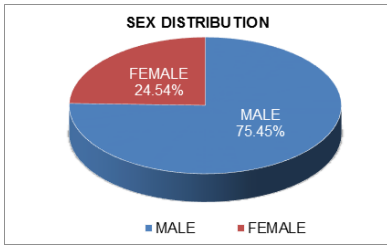
**Age distribution:**

In the present study majority of patients are in age group of 21-40 years. (Graph 1)

**Graph 1: Age distribution of the patients****Sex distribution:**

Out of 110 patients included in the study, 83 of them were males i.e. 75.45% and 27 of them were females i.e. 24.54% with Male: Female ratio of 3: 1. (Graph 2).

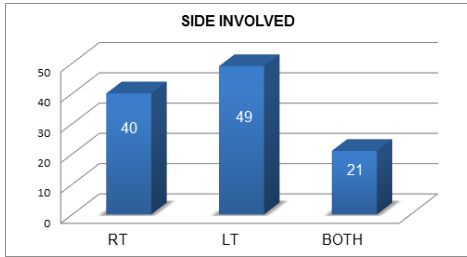
**Graph 2: Sex distribution of the patients**



**Side affected:**

Left limb was more commonly involved i.e. 44.54% compared to right limb (36.36%). In 19.09 % cases both the limbs were involved.(Graph 3).

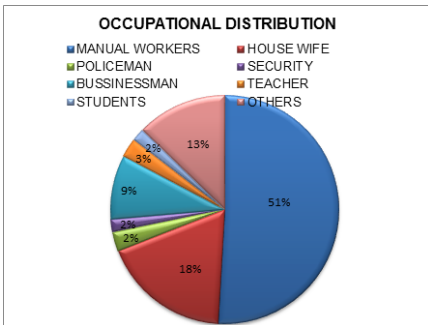
**Graph 3: Side involvement in patients**



**Occupational distribution:**

Manual labourers formed the largest proportion about 50.9% who included the hotel workers, vendors, agricultural workers, shop assistants etc. This disease affects mostly the low socioeconomic group and daily wagers. (Graph 4)

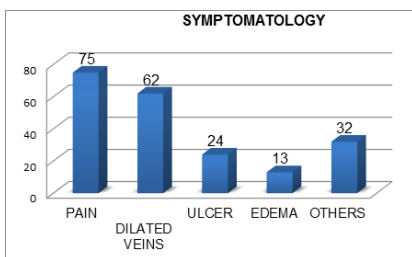
**Graph 4: Occupational distribution in patients**



**Symptomatology:**

68.18 % of the patients presented with dragging pain which was the most common symptom followed by dilated veins seen in 56.36% of the cases. Varicose ulcer was the presenting symptom in 21.81%. Symptoms like skin pigmentation, edema were present in 29.09% and 11.81% respectively. (Graph 5)

**Graph 5: Symptomatology of the patients**

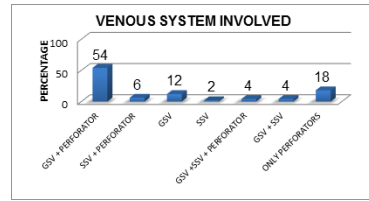


**Venous system involved:**

Long saphenous vein incompetence along with perforator incompetence accounts for majority of the cases i.e. 62.7 %. Long saphenous vein alone is involved in 14.5% of the cases. Short saphenous vein with perforator incompetence is observed in 2.7%.

Both long and short saphenous veins with perforator incompetence were seen in 4.5 % of the cases. Only incompetent perforators alone were present in 10% of the cases. (Graph 6)

**Graph 6: Venous system involved**

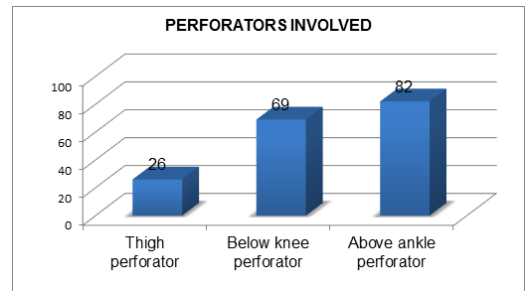


**GSV- Great Saphenous Vein, SSV- Short Saphenous Vein, P- Perforator incompetence**

**Perforators involved:**

Above ankle perforator is most commonly involved accounting to about 50.85%. Below knee perforator is involved in 39.42% and in only 14.85% cases mid- thigh perforator is involved. (Graph 7)

**Graph 7: Perforators involved**



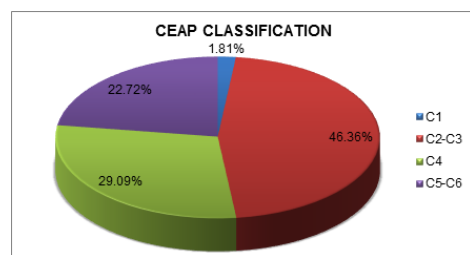
**Incidence of venous ulcer:**

Venous ulcer was seen in 24 patients accounting to about 21.81% of the total patients. Venous ulcer was the third most common presenting symptom in the present study following pain and dilated veins.

**CEAP classification:**

Majority of the patients presenting with symptoms of varicose veins are under CEAP class C2-C3 i.e. 46.36% of the cases followed by C4 i.e. 29.09%. Patients presenting with venous ulcer (active or healed) i.e. C5-C6 constitute 22.72%. (Graph 8)

**Graph 8: CEAP classification of the patients**



**DISCUSSION:**

Varicose veins of the lower extremities are one of the most common peripheral vascular diseases and calls for treatment due to the morbidity and economic impact due to loss of productivity and work hours.

**Comparison of the mean age incidence in present study with other studies:**

In present study maximum incidence was found in the age group 21-40 years. accounting for 50.9 % .The age distribution correlates well with other studies conducted by Kiran et al<sup>6</sup> which reported the maximum incidence in the age group of 21 – 40 years (61.9%) and

Pavan et al<sup>3</sup>(44).

Varicose veins are more common during the active and the productive phase in a man's life. It is therefore evident that the disease can cause significant morbidity

#### **Comparison of sex wise distribution in present study vs other studies:**

In the present study, varicose veins are predominant in males 75.45 % and females 24.5%. which was in concordance with Joseph et al<sup>7</sup> study (males 74.7% and females 25.3%) and Pramod et al<sup>8</sup> study (males 75% and females 25%) and Pavan et al<sup>3</sup> study (males 78% and females 22%).

Greater proportions of cases were males due to occupation related risk factors. 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.

#### **Comparison according to the limb involvement:**

In this study, 44.54% had varicosities of the left lower limb and 36.36% had varicosities of the right lower limb and 19.09% had affliction of both lower limbs. This was similar to other studies like Pramod et al<sup>8</sup> and Kiran<sup>6</sup> where left side involvement was 46.87 % and 42 % of the cases respectively.

The left lower limb is more commonly affected due to the pressure on the left common iliac vein by the right common iliac artery which traverses over it and also due to the loaded recto sigmoid.

#### **Comparison of the symptomatology of the present study with other studies:**

The most common presenting symptom of varicose veins is dragging pain i.e. 68.18% which was in concordance with Sameer et al<sup>9</sup> and Kiran et al<sup>6</sup> studies i.e. 72.85% and 64.3% respectively. The second most common presenting symptom was dilated veins i.e. 56.36% in the present study and 12.85% in Sameer et al<sup>9</sup> study.

#### **Comparison of occupational risk factor in varicose veins:**

The present study showed 58.14% of the patients had occupation history of prolonged standing which was supported by Pramod et al<sup>8</sup>, Kiran et al<sup>6</sup>, Sameer et al<sup>9</sup> and Joseph et al<sup>7</sup> studies which reported that 81%, 57.4%, 52.84% and 50.6% respectively. Thus occupations demanding prolonged standing precipitates varicosities in the presence of other factors like weak valves and vein walls.

#### **Comparison of Venous system involved with other studies:**

The sapheno-femoral incompetence along with perforator incompetence is most commonly involved i.e. 62.7% which is in correlation with the findings of Sameer et al<sup>9</sup> and Pramod et al<sup>8</sup> studies i.e. 42.85% and 71.43% respectively.

Long saphenous vein involvement is most common as it extends the whole of the lower limb and bears the brunt of the disease.

#### **Comparison of perforator incompetence with other studies:**

In the present study, the most commonly involved is the above ankle perforator i.e. 50.55 which was similar to the findings of Kiran et al<sup>6</sup> study (90.48%). The second most commonly involved is the below knee perforator (39.42%) and in Kiran et al<sup>6</sup> study (73%).

#### **Incidence of venous ulcer:**

The incidence of venous ulcer is 21.81% which is higher when compared to Kiran et al<sup>6</sup> (11.9%), Sameer et al<sup>9</sup> (5.71%). This higher incidence of venous ulcer indicates ulcerations where very frequent among varicose veins cases in the present setting.

#### **Comparison of CEAP classification:**

Most of patients were of CEAP class 2 and 3 i.e. 46.36% which is similar to Pramod et al<sup>8</sup>. Patients with C4 i.e. 29.09% which was higher when compared to Pramod et al<sup>8</sup> (12.5%) and Staurt WP et al<sup>10</sup> (18.64%). Patients with venous ulceration (active or healed) i.e.

C5-C6 is 22.72% similar to Pramod et al<sup>8</sup> (21.87%) and Staurt et al<sup>10</sup> (34.52%) studies. Thus majority of the patients seeking medical help were complicated varicose veins.

#### **CONCLUSION**

Varicose veins are most prevalent in younger age group, 21 to 40 years i.e. the economically productive group with Male: Female ratio of 3: 1. Varicose veins are more prevalent in occupations with prolonged standing. The left lower limb is more commonly involved than the right limb. The involvement of long saphenous is more common than the short saphenous system. The most commonly involved is the above ankle followed by the below knee perforator. Majority of the patients presented with dragging pain followed by dilated veins. The incidence of venous ulcer is higher i.e. 21%. Most of the patients seeking medical help for varicose veins are in CEAP class 2 and 3 followed by C4.

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