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Original Research Article

Status of clinical profile and management of varicose veins in a tertiary care teaching hospital

Atul Tandon*

Department of General Surgery, Varun Arjun Medical College and Rohilkhand Hospital, Banthra, Shahjahanpur, Uttar Pradesh, India

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***Correspondence:**
Dr. Atul Tandon,
E-mail: atuldeepa16@gmail.com

ABSTRACT

Background: Varicose veins are a widespread medical condition found in at least 10 percent of the general population. Symptoms of varicose veins range from asymptomatic varicose veins to more extreme symptoms such as ulceration and bleeding.
Methods: Fifty-six cases of varicose veins of lower limb were evaluated by taking detailed history and by carrying out thorough clinical examination. Patients with features of varicose veins and its complications were included in the study while patients with secondary varicose veins due to deep vein thrombosis, recurrent varicose veins, pregnancy, and venous flow obstruction were excluded from the study.
Results: It was more common in left lower limb then compared to right one, 26 (46.4%) patients developed in left and 23 (41.1%) patients in right lower limb. In the present study, right limb involvement of 41.1% and left limb involvement of 46.4%. In the present study bilateral involvement is seen in four patients (12.5%).
Conclusions: Distributions of varicose veins of lower limbs is greater common in center age organization of 30 to 50 years (58.9%) with male predominance, career and own family history are the opposite contributory factors.

Keywords: Primary varicose veins, Varicose vein, Long saphenous vein and lower limbs

INTRODUCTION

Varicose veins are defined as dilated, tortuous, subcutaneous veins ≥3 mm in diameter measured in the upright position with demonstrable reflux.[1] Varicose veins do not threaten life and are seldom disabling, but it causes a considerable demand on medical care.[2] It is the cause of morbidity and loss of precious work hours and a significant financial burden on the health-care system. It is a penalty we pay for adoption of the erect posture. It affects 10-20% of population in the Western world but in India, it is 5%.[3] The long saphenous vein is the extension of medial venous arch in front and lateral to the medial malleolus running up anteromedial surface of tibia and posteromedial to knee joint ascending to the foramen ovule and piercing cribriform fascia 3 to 3.5 cm below and lateral to pubic tubercle terminating into the femoral vein. Except in the middle third where it is subcuticular it is resting over the deep fascia.4 Varicose vein of lower limb and their treatment are as old as mankind. Hippocrates discussed their treatment at length about 2500 years ago and noted "that it was better not to stand in the case of an ulcer on the leg". It is not found in other animals and it is the human beings who have to pay for their erect posture, varicose veins constitute a progressive disease that becomes steadily worse.[5] Most of these persons have either symptoms or complications from chronic venous insufficiency and a substantial number suffer economic hardship from the resulting disability. Considerable advances in understanding of pathophysiology of venous disease and modern imaging techniques, in particular colour duplex ultrasonography,

have revolutionized concept of management of varicose veins.[6] The definitive operative treatment when indicated is well established depending upon type of varicosities. The op treatment is always proceeded and followed by conservative treatment. The conservative measures may be only treatment when op interference is not advisable. An earnest endeavour has been made to study predisposing factors, investigations, complications and treatment aspects of varicose veins of lower limb. Aim of study was to evaluate the clinical profile and management of varicose veins in a tertiary care teaching hospital.

METHODS

This prospective observational study was carried out in the department of general surgery, Varun Arjun medical college and Rohilkhand hospital, Banthra, Shahjahanpur, Uttar Pradesh, India during the period from August, 2020 to June, 2021. Total of fifty-six (56) cases of varicose veins of lower limb were evaluated by taking detailed history and by carrying out thorough clinical examination. Patients with features of varicose veins and its complications were included in the study while patients with secondary varicose veins due to deep vein thrombosis, recurrent varicose veins, pregnancy, and venous flow obstruction were excluded from the study. Informed consent was obtained from each patient before any investigations/interventions. Thorough physical examination done by investigator himself by using following clinical tests; Brodies Trendelenburg test, multiple tourniquet test, Perthes test, Schwartz's test, Pratts's test and localise the site of incompetence and confirm by doing a special non-invasive gold standard technique i.e., doppler ultra sound and also ruled out the presence or absence of deep vein thrombosis. Following routine investigation of the blood, urine, lipid profile, ECG, chest X-ray and usg abdomen and pelvis were done, to rule out associated disease or any contraindications for surgery. Doppler scanning was performed for accurate diagnosis with clinical tests and plan the treatment. A course of conservative treatment was given whenever indicated with rest, antibiotics and elastocrepe bandage. Depending on merits of the disease, appropriate surgical methods were adopted. Following surgical treatment were carried out in Varun Arjun medical college and Rohilkhand hospital, a) Trendelenburg's operation with subfascial or extra facial ligation of perforators and b) Sephanapopliteal junction ligation with multiple stab avulsions. The findings were noted in pretested semi-structured proforma. Data analysis was performed with Microsoft excel. Significance for continuous variables was calculated using appropriate statistical test were applied. The $p<0.05$ was considered significant. All the analysis was carried out on IBM SPSS-22.0 version.

RESULTS

Varicose veins appear to be common among the general population, but the incidences of hospital admission do not project the true prevalence rate. The hospitalized group is only a tip of the ice berg. An epidemiological study can give its true incidence in the general population. A total 150 number of patients with primary varicose veins admitted in general surgical ward of Varun Arjun medical college and Rohilkhand hospital, Banthra and following findings were noted and analysed.

Figure 1 shows the 40 (71.4%) of patients were males, and 16 (28.6%) of patients were females. Age of the patients ranged from 20 to 69 years. Maximum patients were in age group of 30 to 50 years (58.9%).

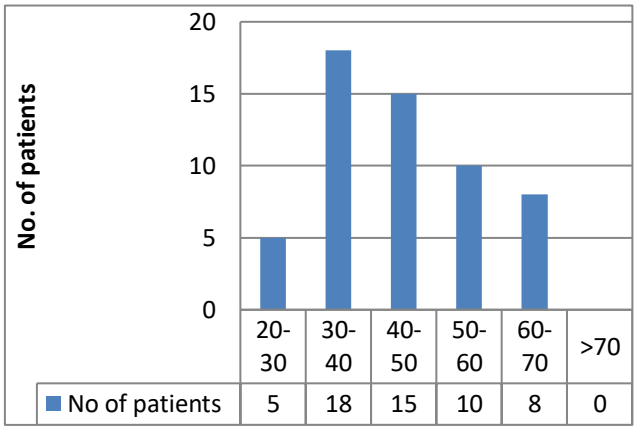

Figure 1: The number of patients according to age group.

It was more common in people with prolonged standing such as farmers-39.3%, shopkeepers-16.1%, house wife-17.9%, traffic police-10.7%, bar attender-7.1%, conductor-5.4% and others-3.6%.

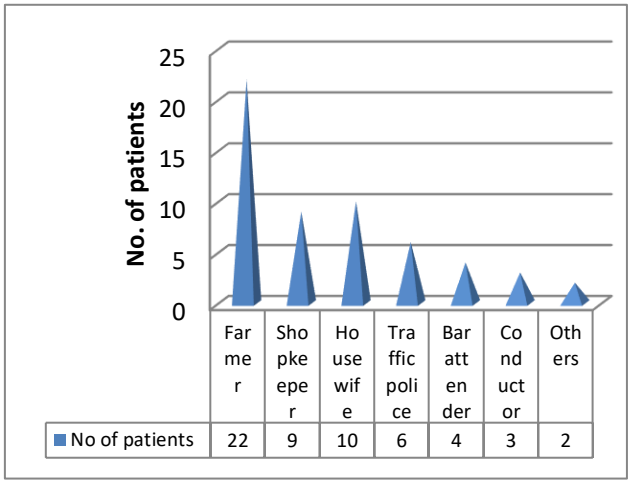

Figure 2: The occupation predisposed to varicose veins in the study.

Among fifty-six cases studied 12 cases (21.4%) had family history of relatives suffering from varicose veins. The occurrence of varicose veins in several members of the same family suggests that hereditary factors may be an important cause of varicosity.

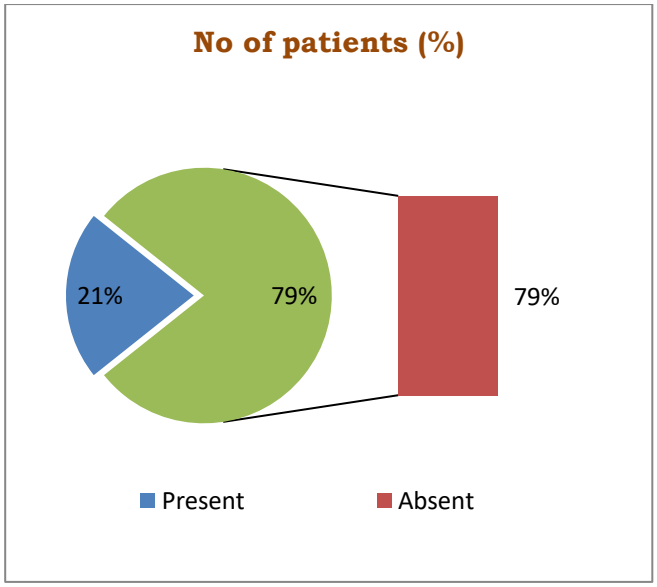

Figure 3: The family history of varicose vein.

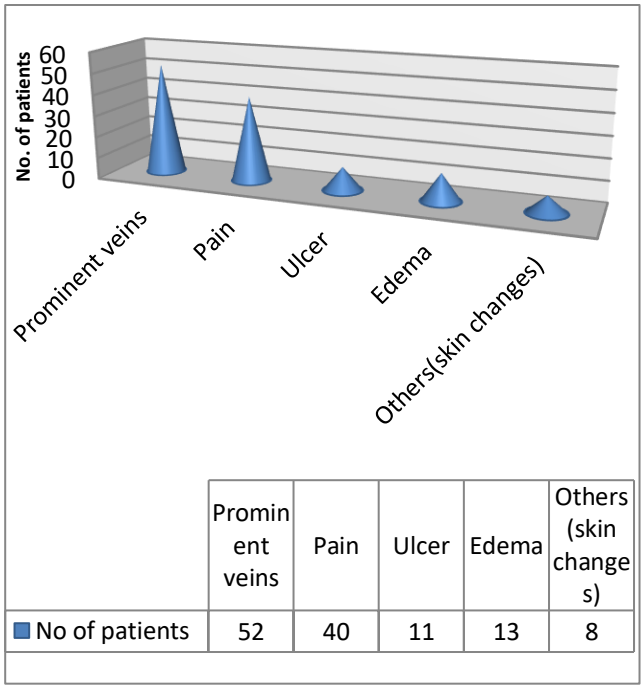

Figure 4: The clinical manifestations.

Table 1: Clinical class of CEAP.

Clinical class	Limbs (%)
0	00 (0.0)
1	03 (5.4)
2	41 (73.2)
3	07 (12.5)
4	08 (14.3)
5	06 (10.7)
6	02 (3.6)

It was more common in left lower limb then compared to right one, 26 (46.4%) patients developed in left and 23 (41.1%) patients in right lower limb. In the present study, right limb involvement of 41.1% and left limb involvement of 46.4%. In the present study bilateral involvement is seen in four patients (12.5%).

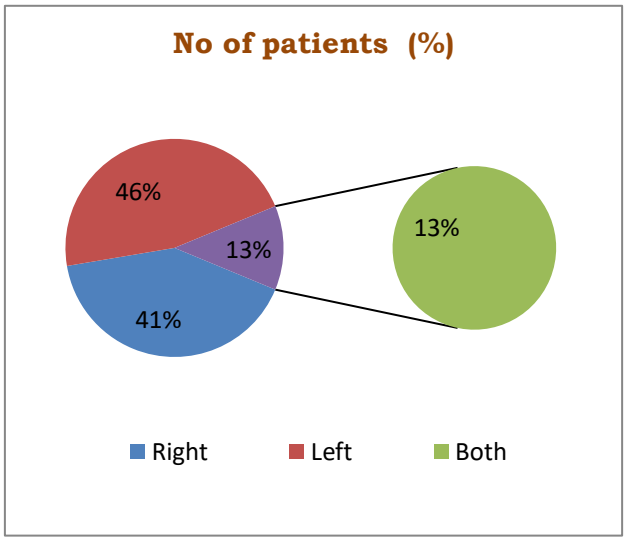

Figure 5: The limb involvement.

As, the long saphenous vein extends along the whole length of the limb, it bears the brunt of the erect posture. Further, the second victim being the known perforators; indicating that all the cases presenting to the hospital for treatment, are advanced cases of haemodynamically disturbed limbs.

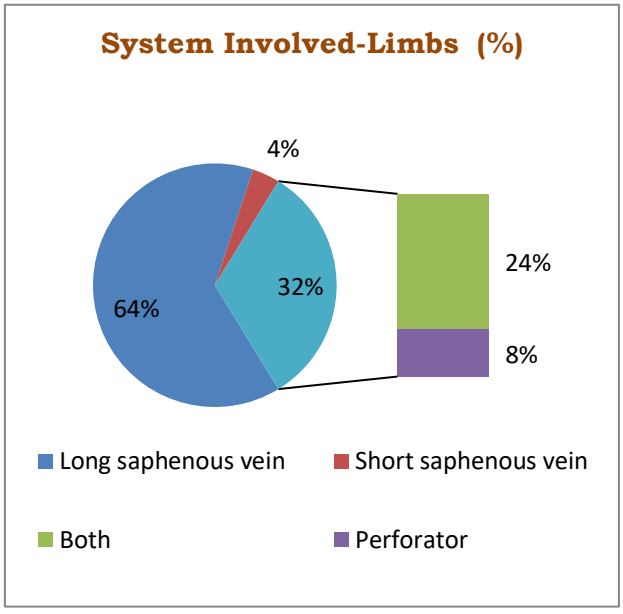

Figure 6: The venous system involved.

The majority of patients had combined saphenofemoral and perforators incompetence. Isolated perforator incompetence was not seen in any patients in this study. So, majority of patients presented for advanced haemodynamic disturbances.

Table 2: Site of incompetence.

Site of incompetence	No. of patients (%)
Saphenofemoral	04 (7.1)
Saphenofemoral + Perforators	48 (85.7)
Sapheno popliteal + Perforators	24 (42.9)
Perforators	00 (0.0)

Table 3 shows the 31 (55.4%) limbs underwent saphenofemoral flush ligation (SFJL) with perforator ligation (PL), 16 (28.6%) patients underwent saphenofemoral flush ligation with saphenopopliteal junction ligation (SPJL) with perforator ligation. In the present study some minor complications such as seroma, wound infection etc occurred which were managed conservatively in Figure 7.

Table 3: Surgical procedures performed.

Type of surgery	No of patients (%)
SFJL+PL	31 (55.4)
SFJL	03 (5.4)
SFJL+SPJL+PL	16 (28.6)
PL	00 (0.0)
SPJL+PL	06 (10.7)
Total	56 (100)

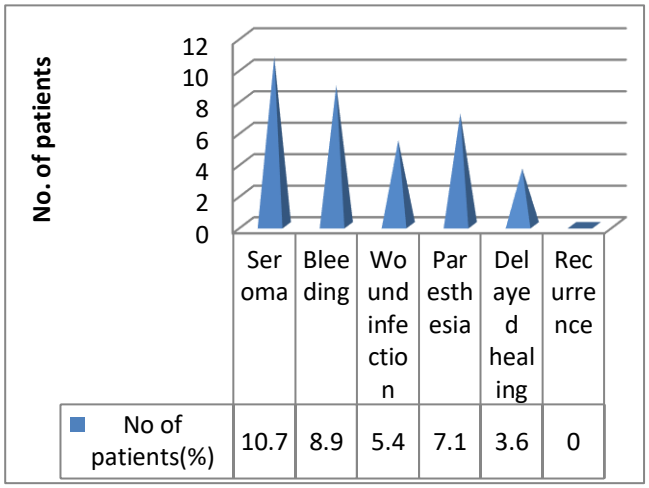

Figure 7: The complications.

DISCUSSION

This study was done to seek a better knowledge about the epidemiology of the varicose veins in the local population which visited this hospital. Varicose veins are more common in the Western countries as compared to India which results in considerable morbidity and costs to the health services.[7] Varicosity of the veins in the lower limb is a common clinical manifestation. Varicosities starts early in life, but assumes an innocent course for a variable length of time, which may vary from few months to several years. The male sex appears to be more prone to the development of varicosity of veins of lower limb than the females. Though the western study shows a clear female predominance (M: F=1:5).[8] In present study M: F=2.2:1 males are more prone for the development of varicose veins. The varicose veins are more predominant in the age group of 30- 40 years.[9] Varicose veins are common in persons, whose occupation forces them for prolonged standing, for long number of hours while executing their work. Management of cases were depended upon the individual cases. When complications like oedema, eczema and ulcer were present, Conservative treatment was given with compression dressings, elevation of the limb, antibiotics and other general supportive measures. Once the complications were controlled, patients were taken for definitive surgical management. Incompetent saphenofemoral valve is tackled by Trendelenburg-Brodie operation with flush ligation. Incompetent perforators were managed by excising them either by multiple ligations. These procedures were done in combination with other procedures depending on the venous system involved. In the present study some minor complications occurred which were managed conservatively. In our series, some patients, stripping of long saphenous vein was done, no patients complained of sensory impairment of the cutaneous distribution of long saphenous nerve. The lower incidence of the sensory impairment in the present study may be because of the fact that, our patients are mostly villagers and workers who may not be able to notice slight change in the sensation. Gay's (1812-1885) work appears to be the first scientific investigation of these conditions. He pointed out that there may be other serious lesions affecting both arteries and veins, deep and superficial and believed that venous thrombosis played an important role.[10] Harvey and lower gave the concept of leg muscle pump theory.[11] Sir Benjamin Brodie (1783-1862) was first to demonstrate reflux in the saphenous vein and advocated conservative treatment for all but the most severe cases. He developed a system of double bandaging and recommended elevation of the limb.[12] Friedrich Trendelenburg (1841-1924) and his disciple George Perthes, advocated ligation of saphenous vein and were successful in treating the varicose ulcers.[13] In 1930, Linton emphasized the pathological contribution of incompetent perforating veins to venous insufficiency. The introduction of stripper has been attributed to William Keller in 1905, Charles Mayo in 1906 and Stephen Babcock in 1907.[14] The Keller's instrument was a flexible intraluminal wire that turned the vein inside out, May instrument was an external ring that was passed along the vein, cutting the tributaries as it went, Babcock used an intraluminal stripper with an acorn shaped head that pleated the vein along its length, as do strippers in use today. The Keller operation was given up because it was ill conceived, the Mayo, because of severe haemorrhage and Babcock probably because the instrument was too short, too straight and flexible. In 1908 Beniamino Schiassi in Bologna, first used iodine as sclerosant. 1980s saw the emergence of duplex and Doppler which revolutionized the management of

vascular disease.[15] Numerous comparative researches were carried out. Recent trends like SEPS (Subfascial endoscopic perforator surgical treatment), endovenous laser ablations, endovenous radio frequency ablation, endovenous LSV stripping have revolutionized the affected person care.

CONCLUSION

These findings suggest that the distributions of varicose veins of lower limbs is greater common in center age organization of 30 to 50 years (58.9%) with male predominance, career and own family history are the opposite contributory factors. Combined SFJ and perforator incompetence is greater not unusual in place of individual incompetence. Trendelenburg-Brodie operation with flush ligation with sub-fascial or extra fascial ligation is the methods accomplished for powerful remedy of varicose veins. Much patients have varicose vein complications.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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