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Original Research Article

Varicose veins: a clinical profile

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ABSTRACT

Background: The CEAP classification includes classifying varicose veins on the basis of their clinical, etiological, anatomical and pathophysiological classification.
Methods: It was a prospective study of 50 patients presenting to a tertiary care hospital, MGM Medical College and Hospital, Kamothe, Maharashtra with varicose veins over a period of 2 years (November 2019 to November 2021). Institute Ethics Committee approval was obtained before start of study. All patients clinically diagnosed of symptomatic or complicated primary lower limb varicose veins with saphenofemoral and/or sapheno-popliteal incompetence with or without perforator incompetence were included. All cases with recurrent varicose veins were excluded. Result was tabulated and analysed at the end of the study using IBM SPSS software.
Results: The age group with maximum varicose vein was between 21-30 years and incidence being more common in male population. The majority of the patients had massive varicose veins (C2). Pain was the most frequent presenting symptom. The majority of the study group had both saphenofemoral junction and perforator incompetence. Primary varicose veins are far more common (76%) than secondary and congenital varicose veins.
Conclusions: Varicose veins are highly common in the Indian population. The CEAP classification has been a major contributor to advances in the field of varicose veins since its inception, and it has now become universally accepted due to its simplicity and reliability.

Keywords: Varicose veins, CEAP classification, Saphenofemoral junction

INTRODUCTION

Varicose veins are subcutaneous veins that are dilated, usually tortuos, and also have a diameter of >3 mm when measured in an upright position with reflux.[1]

Around 10% of population suffer from varicose veins and whose incidence is progressively increasing.[2] The frequency spectrum of chronic venous disease has a tremendous economic impact, especially due to the treatment-related costs of the disease and sometimes irreversible consequences, such as venous leg ulcers may occur. The overall aim of this study is to classify patients with varicose veins based on clinical, etiological, anatomical and pathophysiological criterias.

Aim

The aim of the study was to do clinical study on varicose veins based on CEAP classification.

Objectives

The objectives of the study were (a) to assess the clinical grades and its incidence in relation to the duration of varicose veins; (b) to identify the incidence of secondary varicose veins; (c) to identify if the saphenofemoral junction incompetance is more common than the perforator component; and (d) to study the significance of age, sex and occupation in those patients with varicose.

METHODS

It was a prospective study of 50 patients presenting to a tertiary care hospital, MGM Medical College and Hospital, Kamothe, Maharashtra with varicose veins over a period of 2 years (November 2019 to November 2021). Institute Ethics Committee approval and patient consent were obtained before the start of study.

All patients clinically diagnosed of symptomatic or complicated primary lower limb varicose veins with saphenofemoral and/or saphenopopliteal incompetence with or without perforator incompetence were included. All cases with recurrent varicose veins were excluded. All the patients with varicose veins satisfying the inclusion criteria were included in the study and detailed history and clinical findings were tabulated.

The parameters included were age, sex, occupation, duration of varicose veins, residential address, chief complain, BMI, past history of varicose veins, clinical grading, etiology, anatomical classification and pathophysiology according to CEAP classification, Doppler findings, family history, personal history, management given in hospital, duration of hospital stay.

Result was tabulated and analysed at the end of the study. Result was analysed by using IBM SPSS software.

Figure 1: CEAP classification of varicose veins.[12]

RESULTS

In our study the total of 50 cases were studied and it was observed that the most common age group affected was in the range of 21-30 years of age with youngest age being 21 years old and eldest being 70 years of age. As shown in the Figure 2, the number of males in the study was 36, accounting for 72 percent of the total population, while the number of girls was only 14, accounting for around 28 percent.

Out of 50 patients, around 24 (48%) patients left lower limb had varicose veins, 20 (40%) had right lower limb involvement and 6 (12%) had bilateral lower limb involvement.[11]

Patients with occupations such as farmers, school teachers, housewives, drivers, and coolies had higher rates of varicose veins, which is compatible with the pathogenesis of venous hypertension, which is evident in occupations that require long standing.[10] Out of 50 patients tested, 44 had jobs that required them to stand for long periods of time or perform violent muscular efforts, or both.

The majority of the study population had involvement of long saphenous veins (84%) and around 6% had short saphenous involvement, whereas 10% of the study group had both short and long saphenous involvement.[9]

The majority of the study group had both saphenofemoral junction and perforator incompetence- 36 (72 percent) of the 50 participants had both saphenofemoral junction and perforator incompetence, 4 had solely perforator incompetence, and 3 had involvement of all three systems and only 1 person had SP incompetence.

The distribution of varicose veins according to clinical classification is shown in the Table 2. C0: no clinical signs,

C1: small varicose veins, C2: large varicose veins, C3: edema, C4: skin changes without ulceration, C5: skin changes with healed ulceration, C6: skin changes with active ulceration.[8] The majority of the patients had massive varicose veins and inflammation in their lower limbs when they came to see us. Pain was the most frequent presenting symptom, while pigmentation was the most common illness consequence. Secondary varicose veins are far more common (76%) than primary and congenital varicose veins, with the most common causes being secondary to DVT, obesity, extended standing, pregnancy, sedentary lifestyle, and increasing age. Obese or overweight patients made up the majority of the study group.[7]

Table 1: Age distribution.

Age (years)	No. of patients	Incidence (%)
21-30	21	42
31-40	12	24
41-50	6	12
51-60	5	10
61-70	6	12

Table 2: Clinical grade of varicose veins according to CEAP classification.

Class	No. of limbs	Incidence (%)
0	0	0
1	0	0
2	21	42
3	17	34
4	4	8
5	2	4
6	6	12
0	0	0

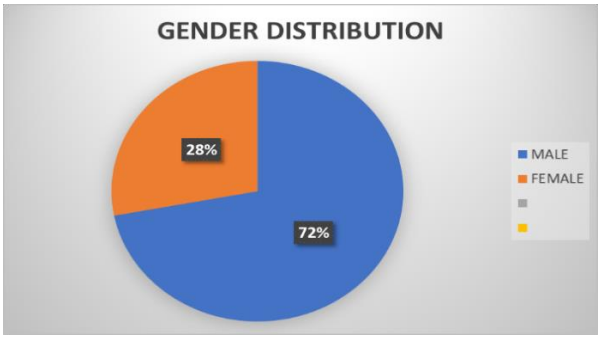

Figure 2: Gender distribution.

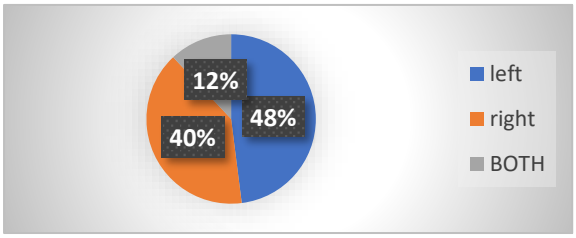

Figure 3: Limb involvement.

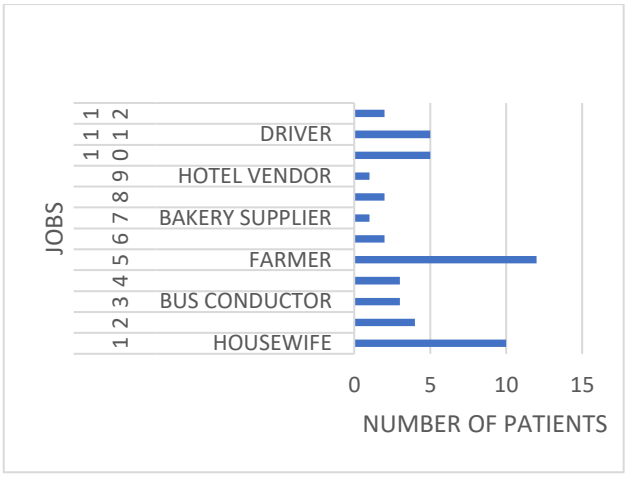

Figure 4: Occupational distribution.

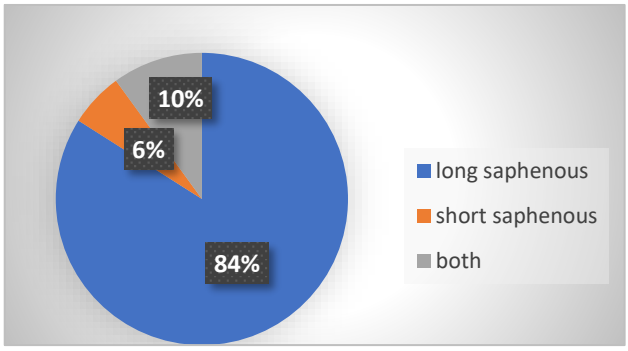

Figure 5: Venous system involvement.

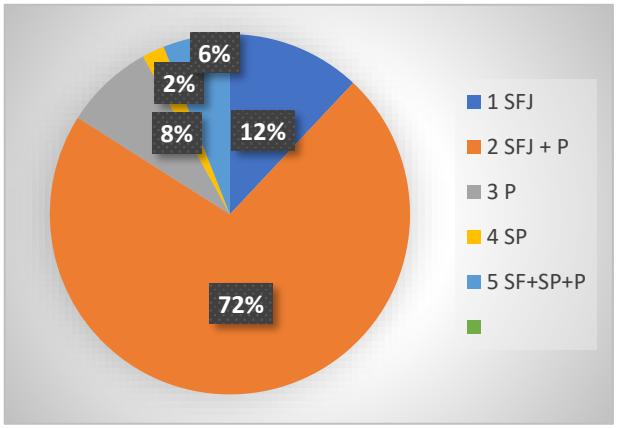

Figure 6: Site of incompetence.

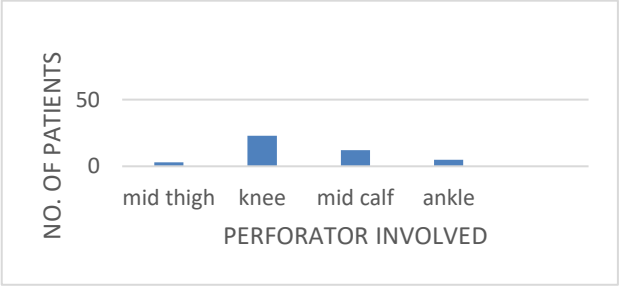

Figure 7: Site of perforator incompetence.

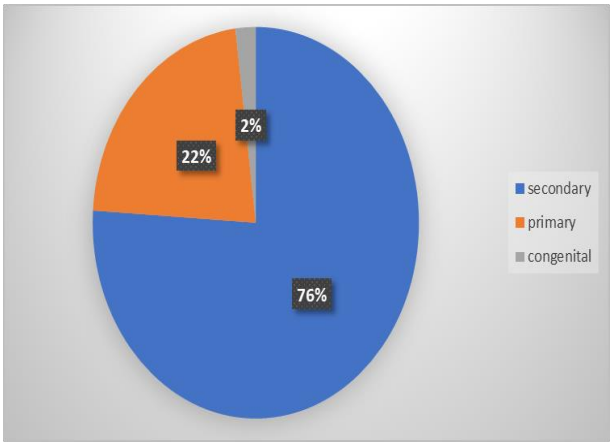

Figure 8: Etiology of varicose veins.

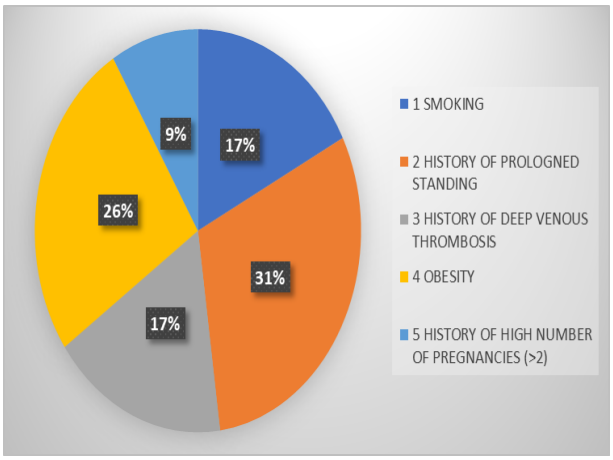

Figure 9: Secondary causes of varicose veins.

DISCUSSION

In our study involving 50 patients with varicose veins presenting to MGM Medical College and Hospital, Navi Mumbai between November 2019 to November 2021, it was found that the percentage of males affected were more than females which is in concurrence with the study of Lee et al and there was a predisposition for varicosities among males in the Edinburgh vein study.

Our findings were also in agreement with the study of Vashist et al which showed 64% of males and 36% of females.[6] It's possible that the lower prevalence of sickness in females at our facility is related to the fact that our middle-class Indian women are unconcerned about their beauty.

The patients ranged in age from 10 to 70 years old. The majority of patients (42 percent) were between the ages of 21 and 30, which is consistent with the findings of the Edinburgh vein study.[3] This study also supports the findings of Kiran et al who found that the age group 21-40 years has the highest incidence (61.9%). Varicose veins are more common in men during their busy and productive years, and as a result, they can cause severe morbidity.

In India, where males participate in more outdoor activities than women, it has been discovered that men have more varicose veins.[10] Farmers, drivers, housewives, chefs, coolies, and shopkeepers made up the majority of the population, which may be due to the lengthy tenure of these occupations. This matches the findings of Pramod et al, Kiran et al, Sameer et al, and Joseph et al, who found that 81 percent, 57.4 percent, 52.84 percent, and 50.6 percent, respectively, in their research.

In our study around 44 patients had unilateral limb involvement out of the 50 study groups which correlates with the study by Staniszewska et al where majority of the patients had unilateral lower limb varicose veins.[5]

The left lower limb was found to be more involved (48%) than the right lower limb, which could be due to the fact that the left lower limb is more commonly affected due to the pressure exerted on the left common iliac vein by the right common iliac artery that passes through it, as well as the loaded recto sigmoid.[4] Other investigations, such as Pramod et al and Kiran et al found that the left side was involved in 46.87 percent and 42 percent of the cases, respectively.

The majority of the patients in our study group had involvement of long saphenous veins (42 out of 50) with majority of them presenting in C2 stage of the disease. In a study by Staniszewska et al the majority of patients had varicosities in C2 class and this correlated with our study. Out of 50, 36 patients had both Saphenofemoral junction and Perforator incompetence which is consistent with the studies by Sameer et al and Pramod et al i.e.; 42.85% and 71.43% respectively.[11]

Secondary varicose veins were found to be more common than primary and congenital varicose veins. Long-term standing, increased abdominal pressure, hormonal influences, prior injury or blood clots in the affected area, and deep venous thrombosis can all result in venous blockage and secondary varicose veins.

The correlation of CEAP clinical class with the site of incompetence is depicted in the table below, showing that the majority of the patients have saphenofemoral junction and perforator incompetence with C2. Isolated perforator incompetence was seen only in 4 patients, saphenopopliteal incompetence in 1 and in 3 patients saphenofemoral, saphenopopliteal and perforator incompetence was seen.

In the Indian context, the CEAP method of categorization for varicose veins plays a critical role in improving diagnosis and quick care, reducing morbidity associated with the illness and, as a consequence, the disease burden on society.

Table 3: Sex distribution comparison.

Sex	Present study (%)	Vashist study (%)	Pramod study (%)	Vaidyanathan series (%)
Male	72	64	75	50
Female	28	36	25	50

Table 4: Age range comparison.

Study	Present	Lateef study	Kiran study
Age range in years	21-30	20-40	21-40
No. of patients	42%	65%	61.9%

Table 5: Occupation distribution comparison.

Occupation	Present study	Pramod study	Kiran study	Sameer study	Joseph study	Lateef study
With prolonged standing	72%	81%	57.4%	52.8%	50.6%	35%

Table 6: Patients comparison according to CEAP classification.

Class	Present study (%)	Pramod study (%)	Stuart wp study (%)
0	0	0	16
1	0	0	0
2-3	76	65.62	30.54
4	8	12.51	18.64
5-6	16	21.87	34.52

Table 7: Correlation of CEAP clinical class with site of incompetence.

Class	No. of limbs	Incompetence				
			SFJ+P	P	SP	SF+SP+P (%)
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	21	2	16	2	0	1
3	17	2	12	1	1	1
4	4	1	2	0	0	1
5	2	0	2	0	0	0
6	6	1	4	1	0	0

Note: SFJ-saphenofemoral junction; P-perforators; SP-saphenopopliteal.

Limitations

Insufficient sample size due to COVID 19 pandemic was the limitation.

CONCLUSION

Varicose veins are highly common in the Indian population, and the bulk of the population is between the ages of 21 and 30, i.e.; the economically productive age group. Males are more likely than females to suffer from varicose veins. Jobs that demand a lot of standing are more prone to get varicose veins.[6] The left lower leg is affected more frequently than the right. Long saphenous system participation is more common than perforator and short saphenous system involvement. The perforators at the knee are the most usually affected, followed by the perforators in the mid-calf. Pain was the most universal presenting symptom of the patients, followed by dilated veins. In comparison to secondary and congenital causes, primary varicose veins are more common. The majority of individuals seeking medical treatment for varicose veins are in CEAP classes 2 and 3, with C4 being the least common. The CEAP classification has been a major contributor to advances in the field of varicose veins since its inception, and it has now become universally accepted due to its simplicity and reliability.

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