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Original Research Article

Study of risk factors and clinical assessment of lower limb varicose vein in a tertiary care hospital

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ABSTRACT

Background: Lower limb varicose veins are one of the common peripheral vascular diseases which requires treatment for leading the productive life without compromise. The present study was undertaken to evaluate the risk factors and various clinical aspects of varicose veins of lower limb of the patients.
Methods: The clinical study involved 21 patients with lower limb varicose veins admitted in the surgical wards of Karnataka Medical College Hospital Hubli, during the period from January 1990 to February 1992. Clinical proforma was prepared before starting the study and based on this proforma the data was collected and analyzed.
Results: Majority of the patients (42.8%) were under the age group of 21-30 years. Male predominance (95.3%) was seen. Majority (85.7%) of the patient's occupation was involved in prolonged periods of standing and violent muscular efforts. The most common symptom was pain and prominent veins noted in 10 (47.64%) patients. varicosities were distributed equally in both the limbs (42.86%). Long saphenous vein involvement was seen in 18 (85.72%) cases. Incompetent perforator was observed in 20 cases.
Conclusions: We conclude that occupations involving prolonged periods of standing and violent physical effort are the major contributing factors for prevalence of varicose veins. Hence care to be taken to avoid its incidence by doing the physical activities that can improve the blood circulation and muscle tone in lower limbs.

Keywords: Lower limbs, Saphenous veins, Varicose veins

INTRODUCTION

Varicosity of the lower limb develops insidiously, easily visible and is often asymptomatic.[1] They are common in females but onset of the disease is earlier in males. They occur due to congenital or muscular weakness in the vessel wall. Prolonged standing and over muscular contraction intensifies the situation. Varicosity is the penalty for verticality against gravity.[2,3]

In the more developed countries where attire reveals more than it conceals, patient turn up in sizeable numbers for treatment of cosmetics reasons. In our country patients are hospitalized more for the complications of the disease than for the cosmetic purpose.[4] The aim of the present study was to evaluate the risk factors rand various clinical aspects of varicose veins of lower extremities of the patients.

METHODS

The present clinical study was conducted on 21 patients with varicose veins of the lower limb admitted in surgical wards of Karnataka Medical College Hospital Hubli, during the period from January 1990 to February 1992. Clinical proforma was prepared before starting the study

and based on this proforma the data was collected and analyzed.

Patients of both sexes aged between 15-70 years were included in the study. Patients aged less than 15 or more than 70 years and who are not willing to participate in the study were excluded.

Figure 1: Prominent varicose veins of long saphenous system.

Complete data of the patient including age, sex, occupation, hereditary tendency, previous history regarding the deep vein thrombosis and any other major illness or trauma were noted. The presenting complaints were recorded in detail in the chronological order.

In local examination, the long and short system involvement was seen and same time presence or absence of varicose ulcer was noted. The following clinical tests were done: Brodie-Trendelenburg test, Schawarts test, Morrissey's cough impulse test, Perthe's test, multiple tourniquet test etc. Routine investigations were done in all the cases and in suspected deep venous thrombosis case venogram and doppler study was done. Chest-screening and E.C.G. were done to rule out other associated systemic diseases. Conservative treatment was started for the patients with associated ulcers and deep vein thrombosis before surgery.

Statistical analysis

The data obtained was represented as number and percentages using MS excel and was represented in the form of tables.

Figure 2: Venogram showing filling defect in femoral vein.

RESULTS

A total of 21 patients with lower limb varicose veins were participated in the study. Majority of the patients were under the age group of 21-30 years. The youngest patient was 19 years old and the oldest was 62 years. About 20 patients were males. Only one patient admitted was woman (Table 1).

Table 1: Age and sex distribution of study participants.

	No. of patients	Percentage
Age in years		
10-20	2	9.52
21-30	9	42.84
31-40	5	23.84
41-50	3	14.28
51-60	1	4.76
61 and above	1	4.76
Sex		
Males	20	95.3
Female	01	4.7

Out of 21, 18 patients occupation was involved in prolonged periods of standing and violent muscular efforts. About 6 (28.56%) patients were farmers, followed by hotel workers 5 (23.84%), coolie 4 (19.04) and shop assistant 2 (9.52%) as shown in Table 2.

Table 3 presents the complaints of the patients with varicose veins. The most common symptom was pain and prominent veins noted in 10 (47.64%) patients. Only prominent veins were seen in 3 (14.28%) patients. But in 85.72% cases associated complications were present.

Table 2: Occupation distribution by place of work.

Occupation	No. of patients	Percentage
Agriculture	6	28.56
Hotel worker	5	23.84
Coolie	4	19.04
Student	1	4.76
House wife	1	4.76
Shop assistant	2	9.52
Weaver	1	4.76
Clerk	1	4.76

Table 3: Presenting complaints of patients.

Presenting complaints	No. of patients	Percentage
Prominent veins	3	14.28
Pain and prominent veins	10	47.64
Prominent veins and ulcer	2	9.52
Prominent veins and swelling of limb	1	4.76
Prominent vein, pain and ulcer.	1	4.76
Ulcer	2	9.52
Bleeding	1	4.76
Prominent vein, swelling of limb and pain	1	4.76

Out of 21 cases, varicosities of the lower limbs were seen equally on right and left sides in each nine cases (42.86%) respectively. In three cases (14.28%) both limbs were affected with varicose veins as given in Table 4.

Table 4: Limb involvement of varicose veins.

Limb involved	No. of patients	Percentage
Isolated right lower limb	9	42.86
Isolated left lower limb	9	42.86
Both limbs	3	14.28

Both long saphenous system and short saphenous system can be involved in varicose veins. They can be involved either singly or together. In this study, majority of patients had involvement of the long saphenous system 18 (85.72%) and both long and short saphenous system in about 9 (14.28%) of cases. There was no case of isolated short saphenous system involvement as presented in Table 5.

In this study 21 out of 20 patients had incompetence of perforator veins i.e. about 95.3% cases. They were divided like above knee, below knee, ankle and combination of these three perforator veins as shown in Table 6.

Table 5: Venous system involvement.

Venous system involved	No. of patients	Percentage
Long saphenous system	18	85.72
Short saphenous system	--	---
Both long and short saphenous system	3	14.28

Table 6: Showing different perforator vein incompetence.

Perforators	No. of patients	Percentage
Above knee and below knee perforator incompetence	8	38.08
Below knee and ankle perforator incompetence	5	23.8
Below knee perforator incompetence	4	19.04
Above knee perforator incompetence	2	9.52
Above knee, Below knee and ankle perforator incompetence	1	4.76

DISCUSSION

Varicose veins of the lower limbs are very common in the younger age groups. In our study, majority of the patients were presented at the age group of 21-30 years followed by 5 (23.84) at the age of 31-40 years. These findings correlate well with the findings of Shankar et al.[5] The reason for the highest incidence of varicose veins at this age might be due to excess physical activities in man's life.[6] The incidence is less before 20 years which can be because of greater elasticity of skin and veins and active muscular movement. The hydrostatic pressure within the venous system gets increased when the person attains his full height and hence, the frequency increases after puberty.[7]

In the present series, the incidence of varicose veins was more predominant in males. Similar results were reported by Mirji et al.[8] Only one (4.7%) female patient was presented with varicose veins. The incidence of the disease reports in our study was lower in females and this was probably due to less cosmetic concern in our Indian

lower and middle-class women. The present study showed 85.7% of the patients had occupation history of prolonged standing and violent muscular contractions, which suggests that occupation has a definite role as a causative or a contributing factor. These findings are similar with the reports of Mirja et al and Nagaraj et al.[8,9]

The common symptom observed in this study was pain and prominent veins in 10 (47.64%) patients. These findings correlate well with the outcomes of Mirji et al in which pain and prominent veins was observed in 12 (37.5%) patients out of 32.[8] In this series, the occurrence of varicose veins did not show any marked preference for any particular limb. Left limb and right limb was equally affected in each nine (42.86%) cases respectively. In only 3 (14.28%) cases both limbs were affected. These findings compare favorably with study conducted by Dur et al which was right limb 48.55% and left limb 51.45%. Both limb involvements in this study was 14.28%.10 On contrary, studies of Nagaraj et al showed that left side limb involvement in 26 (52%) cases and right-side incidence in 21 (42%) cases and bilateral involvement in 3 (6%) cases.[9]

Both the long saphenous venous system and the short saphenous venous system can be involved either singly or in combination in the incidence of varicose veins. The present study revealed long saphenous vein involvement in 18 (85.72%) patients. This might be due to the fact that the long saphenous vein encompasses the whole of the lower limb and bears the impact of the disease. Involvement of short saphenous vein was not observed in any patient. Delbe and Mocquet in their study reported varicosity of long saphenous vein in 98% and only 2% in short saphenous vein.[10] Another study by Shankar et al revealed the association of long saphenous vein in 83.3% of cases (35 patients), the short saphenous vein in 7.14% (3 patients) and both long and short in 9.53% (02 cases).[5]

In the present study, incompetent perforator veins were seen in 20 (90.54%) cases. Of them 8 (38.08%) cases had above and below knee perforator incompetency, 5 (23.8%) had below knee and ankle perforator incompetence, 4 (19.04%) had below knee and 2 (9.52%) had above knee perforator incompetence and 1(4.76%) had both knee and ankle perforator incompetence. Prevalence of incompetent perforator was noted in 41 (82%) cases by Delbe et al.[11] Another study done by Donnell et al reported perforator in competence in 79.48% of patients.[12]

CONCLUSION

This study revealed that the disease is most prevalent in the age of 20 to 50 years life. We conclude that occupations involving prolonged periods of standing and violent physical effort are associated with varicose veins.

Most of the patient came to the hospital because of pain and other complications, rather than cosmetic purpose. Majority of the patients had long saphenous vein involvement and had perforator incompetence indicating advanced hemodynamic malfunctions. Clinical examination or assessment was almost confirmative in diagnosis of the disease.

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