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Original Research Article

Clinical study of varicose veins of lower limbs

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ABSTRACT

Background: 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. Therefore, the present study has been undertaken evaluate the various clinical aspects of varicose veins of lower limb of the patients.
Methods: The clinical study and observations in this study were based on a clinical proforma which included the determination of Ratio of varicose veins to the total number of cases with vascular complaints, type of vascular complaints, The relationship between the age of the patient and the disease, The sex ratio, The relationship of occupation and the disease, The different presenting complaints, The venous system involved, The limb involved and predisposing factors in the Patients with Varicose Veins.
Results: Out of the 382 patients admitted with vascular complaints, only 42 cases were afflicted with varicose veins of the lower extremities. Maximum incidence was in the age group 21-40 years (61.9%). Male preponderance was observed. The most common presenting complaint was pain which varied from dragging pain to night cramps associated with heaviness of the limbs.
Conclusions: Our study reveals that the disease is most prevalent in the 2nd and 3rd decades of life. Most of the patients had long saphenous vein involvement while short saphenous vein was involved in 3 cases and 4 cases had involvement of both venous systems. Many of the patients had perforator incompetency indicating advanced hemodynamic malfunction. Therefore, it was concluded that occupation involving prolonged standing and/ or violent muscular contractions contribute to or precipitate varicose veins if not actually cause them.

Keywords: Saphenous nerve, Terminal incompetency, Varicose veins

INTRODUCTION

The evolution of Homo sapiens as a superior being involved the adoption of erect posture. As man walked erect he became susceptible to a pathological condition viz., varicosities of the dependent venous system. It can be said that varicosities of the dependent venous system is the price the Homo sapiens has to pay for his erect posture as four-legged animals are immune to this particular malady.[1] Varicosity of vein is said to exist when the vein is dilated, lengthened and tortuous.[2] According to Gunnar Baver, "It has been estimated that there are ten times as many sufferers from chronic venous disease of the lower limbs as from arterial disease of the same".[3] In western population the disease is highly prevalent and has attained national and industrial importance. This is not so in and incidence is apparently low in India.[4] The incidence of varicose veins in India seems to be far less compared to western population because most of the patients do not come to the hospital unless complications such as pain, edema and ulceration, etc. occur. The terminology varicose vein is derived from Latin language, which means "unnaturally and permanently distended veins".

Etiology of this disease are varied and some cause rapid progression of the disease and some slow deterioration. Conflicting views are present regarding the etiology of varicose veins and its prevalence in the western female population. Wedell JM reported that, the chief brunt is borne by females and male to female ratio is 1:3.5 to 5 or even higher in the westerners, but is seen infrequently in Indian and African women.[5] Varicosity of the vein of the lower limbs develops insidiously and is often asymptomatic and so overall effect of venous insufficiency is underestimated. Death though infrequent due to the complications of the disease, economic impact due to loss of productivity and work hours is enormous. There is also wide variation in the clinical picture, degree of varicosity and morbidity produced. A patient with typical venous ulcer may not have any obvious varicose veins and a patient with severe varicosity may not have any symptoms at all.

In the developed countries, where attire reveals more than it's conceals, patients turn up in sizeable numbers for treatment for cosmetic reasons, while in our country, patients are hospitalized more for the complications of the disease than for the disease itself.[6] Varicose veins of lower extremities are the most common peripheral vascular disease and it calls for treatment due to the morbidity and loss of working hours it causes. Therefore, the present study has been undertaken evaluate the various clinical aspects of varicose veins of lower limb of the patients.

METHODS

This clinical study consists of patients attending the surgery OPD the tertiary care hospitals with varicosities of the lower limbs. The study included the patients willing for surgery, who underwent surgery and also patients who were managed conservatively to compare the effectiveness of both modalities of treatment. Children below 12 years of age and women with pregnancy and history of post-partum thrombosis and those who are not willing to participate have been excluded. Patients over seventy years of age and those suffering from cardiopathy, bronchopneumopathy, nephropathy, metabolic disease and heavy obesity were managed conservatively as their general condition did not permit them to undergo surgery. All the cases in my clinical data have been studied by the same person.

The clinical study and observations in this study were based on a clinical proforma and the data were collected and analyzed. The proforma included the determination of ratio of varicose veins to the total number of cases with vascular complaints, type of vascular complaints, The relationship between the age of the patient and the disease, The sex ratio, The relationship of occupation and the disease, The different presenting complaints, The venous system involved, The limb involved and predisposing factors in the Patients with Varicose Veins

Statistical analysis

The data obtained was represented as percentages and was represented in the form of tables.

RESULTS

Out of 42 cases, only 3 female patients presented with varicosities of the lower limbs. The incidence in our series is much low 7.14% as compared to the western counterpart. The youngest patient who presented with varicose veins of the lower limb was 16 years old, while the oldest among these was 66 years old. The decade from 21-30 years showed the peak incidence, which is the most productive phase in a man's life. The 20 years period from 21-40 years accounts for 61.9% of all cases. Male preponderance was observed with male to female ratio 14:1. 57.14% of cases were involved in occupation requiring prolonged periods of standing and/ or violent muscular contraction (Table 1).

Table 1: Distribution of varicose patients based on the gender, age and occupation.

Gender-wise incidence of varicose patients
Males-39 (92.86%)
Females-03 (7.14%)
Age-wise incidence of varicose veins
10-20 years-02 (4.76%)
21-30 years-15 (35.71%)
31-40 years-11 (26.19%)
41-50 years-06 (14.28%)
51-60 years-06 (14.28%)
61-70 years-02 (4.77%)
71 years and above-Nil
Incidence of varicose veins based on occupation
Agricultural labourers-21 (50%)
Coolies and Rickshaw Pullers-11 (26.19%)
Policeman-04 (9.52%)
Shop assistant-03 (7.15%)
Mechanic-02 (4.76%)
House Wife-01 (2.38%)

Out of the total number of admission for vascular complaints 382, TAO was the foremost with 156 admissions accounting for 40.83% of the total admissions. Cases with varicose veins were third among all with 42 cases accounting for 10.99% of the total admission with vascular complaints. This study reveals that 57.14% of the cases were involved in occupations requiring long periods of standing and/ or violent muscular contractions. 14.28% of the cases had a family history of varicose veins. 2 cases of secondary varicose veins were reported due to SOL in pelvis. 1 patient had previous history of varicosities during pregnancy. 9 cases had no obvious predisposing causes (Table 2).

Table 2: Percentage distribution of patients with varicose veins based on vascular complaints, predisposing factors and type of presenting complaints.

Distribution of varicose patients based on type of vascular complaints
TAO-156 (40.83%)
Atherosclerosis-105 (27.49%)
Varicose veins-42 (10.99%)
Superficial vein thrombosis-41 (10.73%)
Deep vein thrombosis-38 (9.96%)
Distribution of varicose patients based on the predisposing factors
Idiopathic-09 (21.3%)
Occupation requiring violent muscular contraction-18 (42.86%)
Family history of varicose veins-06 (14.28%)
Occupation requiring prolonged standing-06 (14.28%)
Secondary varicose veins-02 (4.76%)
Previous history of pregnancy with varicosity-01 (2.39%)
Distribution of varicose patients based on the type of presenting complaints
Pain in the limb-17 (40.48%)
Swelling of the limb-06 (14.29%)
Eczema-08 (19%)
Pain and swelling-04 (9.52%)
Pain and ulceration-05 (11.9%)
Deformity-01 (2.4%)
Pain, swelling, eczema and ulcer-01 (2.4%)

Table 3: Percentage distribution of patients with varicose veins based on limb involvement and venous system involved.

Distribution of varicose patients based on limb involvement
Right limb-14 (33%)
Left limb-18 (42.86%)
Both-10 (23.81%)
Distribution of varicose patients based on the venous system involved
LSV only-35 (83.33%)
SSV only-03 (7.14%)
Both-02 (9.53%)

Out of the 42 cases 14 had varicosities of the right limb, 18 cases had varicosities of the left lower limb and 10 cases had affliction of both lower limbs. This may be due to more pressure on left iliac vein due to the crossing over of left common iliac artery or due to loaded recto sigmoid.

Both the long saphenous venous system and the short saphenous venous system can be involved either singly or in combination. In this series, the long saphenous venous system was involved in 83.33% of cases, while the short saphenous venous system was involved only in 7.14% of cases. This can be attributed to the fact that the LSV extends the whole length of the limb and bears the brunt of the erect posture. Both LSV and SSV were involved in 9.53% of cases (Table 3).

DISCUSSION

Forty-two cases of varicosities of lower limbs which were admitted in the surgical wards were analyzed in this study. This study reveals that the disease is most prevalent in the 2nd and 3rd decades of life and that most of the patients admitted for treatment are of this age group. An overwhelming majority of the patients involved in this study were males. The reason as to why fewer female patients turn up for treatment was not clearly established. It was not established as to whether the Indian females are less susceptible to this disease. The search for the truth regarding this would be fascinating and hope that it will be taken up in future.

The reasons for low rates in India could be due to the difference in stature, where Indians are short stature and have less hydrostatic pressure in their lower limb veins.[7] Also low residue; constipating diets may be responsible for higher incidence in western population. The commode system, which is used in the western countries, has a disadvantage as the limbs remain unsupported and dependent and do not prevent transmission of increased pressure to lower limb veins during straining.[8] This is not so in our country where we squat to defecate.

In this present series, the youngest patient to present with varicosity was 16 years old and the oldest patient was 66 years old. Maximum incidence was found in the age group 21-30 years. The 20 years period from 21-40 years accounted for 61.9% of all cases. This is the period during which a man is most active and is the most productive phase in a man's life. It is therefore evident that the disease can cause significant morbidity.[9] The incidence is low before puberty which can be because of greater elasticity of skin and veins and active muscular movement before puberty. The hydrostatic pressure within the venous system increases as the person attains his full height during that period and hence, the incidence increases after puberty.[10]

During our study of 42 cases of varicose veins, only 3 (7.14%) female patients presented with varicosities of lower limbs. Though this study projects the disease as one mainly affecting the male, it would certainly be erroneous to consider the disease as one with overwhelming male preponderance. While it is true that an Indian woman would not present for treatment of varicose veins for cosmetic reason because her attire covers the whole of her lower limbs, it would be unreasonable to expect a rural Indian male to present for treatment of varicose veins for cosmetic reasons.[11] A rural Indian female works as hard as, and stands as long

as an Indian male, but the Indian male outnumbers her as patients.

One study revealed that 57.14% of the cases were involved in occupation requiring prolonged periods of standing and/ or violent muscular contractions. Thus, it could be safely said that occupations demanding prolonged period of standing or violent muscular contractions by itself may not cause varicose veins but could contribute to, or precipitate varicosities in the presence of other factors like weak valves and vein walls because 9 patients in the present series had no predisposing factors.[12] 14.28% of the cases had positive family history of varicose veins. Previous data give a 40-80% family history. But, Dodd while disagreeing says that it is such a prevalent disease that any patient can have family history.[1] Hence, low incidence in our series tends to disagree with the previously reported high family incidence.

Both the long saphenous venous system and the short saphenous venous system can be involved either singly or in combination. The LSV was involved in 78.57% of cases while the SSV was involved in 11.91% of cases. This can be attributed to the fact that the LSV extends the whole of the lower limb and bears the brunt of the disease. Both LSV and SSV were involved in 9.52 of cases. Out of the 42 cases, only 2 cases (4.76%) had terminal incompetency of LSV alone. 12 cases (28.58%) had perforator incompetency of the long saphenous venous system while 28 cases (66.66%) had both incompetency of the saphenofemoral junction as well as perforator incompetency. Out of the 3 cases involving SSV none of them had perforator incomeptency. Among the cases with perforator incompetency of LSV 52.38% cases had Hunterian perforator incompetency. 73.8% cases had below knee perforator incompetency and 90.48% of cases had above perforator incompetency.

CONCLUSION

This study reveals that the disease is most prevalent in the 2nd and 3rd decades of life. I have concluded that occupation involving prolonged standing and/ or violent muscular contractions contribute to or precipitate varicose veins if not actually cause them. Most of the patients had long saphenous vein involvement while short saphenous vein was involved in 3 cases and 4 cases had involvement of both venous systems. Many of the patients had perforator incompetency indicating advanced hemodynamic malfunction.

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