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Clinical study of 50 patients of varicose veins in NSCB Subharti Hospital, Meerut, (U.P) with special reference to Clinical examination vs Color Doppler for evaluation and diagnosis of varicose veins.

General Surgery

KEYWORDS: INSULIN SENSITIVITY, OBESE, NONDIABETIC SUBJECTS ABDOMINAL SURGERIES.

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ABSTRACT

Varicose veins are a common condition that the current paper elaborates the features of the condition in a local Indian population. **Methodology:** The present study is a prospective observational study of 50 patients of Varicose veins which were evaluated for demographics, clinical manifestations, treatment and outcome done at Chatrapati Shivaji Subharti hospital, Meerut during the study period of SEPTEMBER 2014 to AUGUST 2016. **Results:** This study reveals that the disease is more prevalent during the active adult life in their 3rd (34%) and 4th (26%) decades and males (88%) were more affected. Age range in study was 16-74 years. The occupations needing prolonged standing and use of violent muscular efforts is found to be a contributing or precipitating factor for varicose veins. Majority of patients presented to the hospital for complications of the disease rather than for cosmetic purposes (20%). The commonest symptoms in the study were prominent swellings in the lower limb (72%) and pain (76%). Majority of the patients had combined valvular incompetence. The most common post-operative complication observed was hematoma formation (8%).

INTRODUCTION

Varicose veins are elongated, dilated and tortuous veins. They are defined as dilated, palpable subcutaneous veins generally larger than 4mm in the upright position [1]. The word 'varicose' is derived from the Latin word 'varix', which means twisted. The adoption of the erect position by man is thought to have greatly influenced the development of venous diseases of the lower limbs. Impairment of return of venous blood to the heart against gravity as a result of the erect position, results in the development of acute venous thrombosis, varicose veins, and chronic venous insufficiency [2]. Varicose veins have been recognized for thousands of years, being mentioned in the papyrus of Ebers around 1550BC and also by Hippocrates the father of modern medicine. The condition, affected by man's upright position and by gravitational forces, is wide spread, involving at least one out of five individuals in the world, hence making this a very common condition. 20% of the population suffers with varicose veins and 2% have skin changes that may precede venous ulceration [3]. In the developed countries patients turn up to treatment, for cosmetic reasons, however in our Indian scenario it is the complications and not the cosmetic reasons that brings the patient to the doctor. In Indian scenario the disease is one of the common surgical problems in low socio-economic class people, which at times compel the patient to change his occupation which is very disturbing. With continuing advances in methods of evaluating venous anatomy and haemodynamics the therapy for varicose veins is in a period of change.

OBJECTIVES OF STUDY

1) To study spectrum of clinical presentation in varicose veins of lower limbs.

2) To study various investigations done in varicose veins.

3) To study management strategies of varicose veins, it's complications and its outcome in our institution.

METHODOLOGY

SOURCE OF DATA

Patients with varicose veins satisfying inclusion criteria admitted in Surgery wards, surgical ICU or attending surgery OPD in Chatrapati Shivaji Subharti hospital during the study period of two years (September 2014 to August 2016)

Sample size

For this study 50 patients having Varicose Veins of Lower limb were taken which satisfied our inclusion criteria during the study period of September 2014 to August 2016.

- **Inclusion criteria**

Patients with the following presentation of varicose veins:
A. Cosmetic Presentation
1) Heaviness of lower limbs
2) Dilated Veins
3) Skin changes or eczema
B. Presentation with Complications of Varicose veins
1) Ulceration
2) Phlebitis
3) Bleeding

- **Exclusion criteria**

1) Patients with deep vein thrombosis of calf or thigh veins.
2) Patients with varicose veins and peripheral vascular disease.
3) Patients with recurrent varicose veins.

So this study consisted of fifty patients who met with these criteria. Informed consent was obtained from each patient before any investigation or intervention. A thorough history was taken in all the patients. A detailed clinical examination was done. All the clinical tests were applied to arrive at a probable diagnosis. Then the patients were subjected to duplex ultrasonography to confirm the diagnosis. The routine investigations were also done. The patients underwent suitable treatment based on their clinical and investigational profile. The post-operative course was noted. Further the patients were followed up and final outcome evaluated.

RESULTS

AGE DISTRIBUTION

Range of Age of patients included in this study ranged from 16 to 74 yrs.

Commonest age group for of varicose veins of lower limbs in our study was 21 to 30 yrs. (34%) and 31 to 40 yrs (26%) which was due to the fact that younger population were to get recruited in army and came mainly because of only with complains of visible dilated veins before their army medical checkup. It was a prerequisite for recruitment in army to have no dilated veins of lower limb. Older age group 41-50 yrs.(16%), 51-60 yrs.(8%) and Above 60 yr (2%) was less as they only came after development of complications such as venous ulcers.

SEX DISTRIBUTION
Only 12% (6) of the total patients in this study were females as compared to males who made 88% (44) of total cases.

Clinical Manifestations
SIDE AFFECTED
Left side lower limb was more affected (50%) than right side (30%).20% patients reported with bilateral lower limb varicosities.

SYMPTOMATOLOGY
76% presented with symptoms of Heaviness/Pain/dull ache in lower limb. 72% with dilated veins, 42% with ulcerations and 20% with Eczema/Edema/lipodermatoslerosis.

VENOUS SYSTEM INVOLVED
Only Long Saphenous Vein was involved in 90% patients. Only Short Saphenous Vein in 4%, both in 6% patients.

INCOMPETENCE
There was difference between incompetence found in clinical examination of Varicose Veins & Venous Doppler Study. Sapheno-Femoral junction incompetence 80% clinically and 88% on Doppler study z value for which is 1.091 and p value 0.275 which is not significant. Sapheno-Popliteal junction incompetence 6% clinically and 10% on Doppler study z value for which is 0.737 and p value 0.461 which is not significant. Above knee perforator incompetence 24% clinically and 34% on Doppler study z value for which is 1.102 and p value 0.271 which is not significant. Below knee perforator incompetence 44% clinically and 54% on Doppler study z value for which is 1.10 and p value 0.271 which is not significant. P value for this comparison was 0.905 and c2 (Chi Square) was 0.561 which were both not significant.

COMPLICATIONS
Hematoma (8%) accounted for major part of all Complications followed by Wound infection (4%) and bleeding (2%)

MANAGEMENT

Procedure done	No. of patients	%
SFJL+S+PL	28	56
SFJL+PL	7	14
SFJL	6	12
SFJL+SPJL+S+PL	3	6
PL	4	8
SPJL+PL	2	4

Table-
SFJL-Sapheno-femoral junction flush ligation
SPJL- Sapheno-Popliteal junction flush ligation
S-Stripping of vein
PL-Perforator ligation

Table 1
HOSPITAL STAY

No. of Days	No. of Patients	%
3-4	17	34
5-6	26	52
7-8	4	8
>8	3	6
Total	50	100

Table 2
FOLLOW UP

Presenting symptoms	Completely healed	Incompletely
Cosmetic changes	30	6
Ulcer healing	17	4
Skin changes	6	4

Table 3

DISCUSSION
In our study a total number of 50 patients with primary varicose veins were admitted, investigated, operated and followed up. The results were analyzed and compared with other similar studies.
The analysis is as follows;

AGE RANGE:
In my study the age range is from 16 yrs. to 74 yrs. Malhotra et al [4] in their study "An epidemiological study of varicose veins in Indian railroad workers from the south and north of India, with special reference to the causation and prevention of varicose veins." The survey included 323 men from Madras in the South and 354 men from Ajmer in the North of India had an age range of 18-65 years. In the West Wright et al [5] in their study "The prevalence of venous disease in a west London population of 1338 patients in England had an age range of 20-75 years.

AGE DISTRIBUTION
The age distribution in present study shows majority of patients are between the ages of 20 to 40 years. In this study they made 60% which correlates well with study done by Lateef [14], which showed 65% and Mirji [13] which showed 62.5%. The youngest in this study was 16 years and the eldest was of 74 years.

SEX DISTRIBUTION
Widmer [6] in their study "Peripheral venous disorders prevalence and socio-medical importance" in Switzerland recorded a male to female ratio to be 1:1. Callam et al [7] in their study "Epidemiology of varicose veins" in England showed that half of the adult population had minor stigmata of venous disease (women 50–55 per cent; men 40–50 per cent) but fewer than half of these had visible varicose veins (women 20–25 per cent; men 10–15 per cent). The data suggested that female sex, increased age, pregnancy, geographical site and race were risk factors for varicose veins .this study recorded male to female ratio to be 1:2. Leipnitz et al [8] in their study "Prevalence of venous disease in the population: first results from a prospective study carried out in greater Aachen" recorded a ratio of 1:2 Male: Female. In our study male to female ratio was found to be 3:1. In this present study of 50 patients of varicose veins 6 were females accounting to 12%, which is low compared to western study done by Callam MJ [7]. The female patients in this study mainly sought treatment for symptoms and complications rather than for cosmetic reason. The low incidence seen in present study is most probably due to less cosmetic concern in our Indian middle and lower class women.

LIMB INVOLVEMENT:
The present study showed slightly increased incidence of varicosity on the left limb. This compares with the study conducted by AHM Dur, AJC Mackaay et al [9] and Mirji P e al [13]. The cause of increased incidence of left side is not known. The probable reason for increased incidence on left side is that the venous drainage of the left leg follows a more tortuous course through the pelvis, with left common iliac ein traversed by the right common ileac artery. The bilateral varicose veins were seen in 20% of patients in present study as compared to Mirji P e al [13] which showed 9.7% incidence in both limbs.

PRESENTING SYMPTOMS:
In the present study, the commonest symptom in 38 (76%) cases was pain. 36 (72%) cases had complaints of dilated veins in the affected limb and 10 (20%) cases had limb edema, venous ulcer was present in 21 (42%) of cases. This findings is bit different with other studies done by W.B. Campbell et al,[10] with cosmetic symptoms being 90% and aching pain 57% because in our country patient come to hospital for some symptom rather than just cosmetic appearance. Similar findings were present in study done by Mirji P e al [13] the commonest symptom in 12 (37.5%) cases was pain. 10 (31.25%) cases had complaints of dilated veins in the affected limb and 4 (12.5%) cases had limb edema, venous ulcer was present in 6 (18.75%) of cases.

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INCOMPETENT PERFORATOR

Majority of the patients in the study done by Mirji P e al [13] had incompetence at multiple sites. Almost 71% had combined sapheno-femoral and perforator incompetence, followed by combined sapheno-politeal and perforator incompetence in 5.7%. Only isolated site incompetence was less commonly observed. Isolated perforator incompetence occurred in (8.57%) patients. Isolated sapheno-femoral incompetence seen in 11.4% and isolated sapheno-popliteal incompetence observed in 2.8% limbs. Perforator incompetence in total occurred in 30 limbs (87.6%) in Mirji P et al [13] study. Labropoulos N et al [11] perforator incompetence 68 %.In our study Almost 56% had combined sapheno-femoral and perforator incompetence, followed by combined sapheno-politeal and perforator incompetence in 4%. Only isolated site incompetence was less commonly observed. Isolated perforator incompetence occurred in (8%) patients. Isolated sapheno-femoral incompetence seen in 12% and isolated sapheno-popliteal incompetence was not observed in our study. Perforator incompetence in total occurred in 44 limbs (88%).

Comparison of Incompetence (Clinical Examination Vs Doppler Study)

There was difference between incompetence found in clinical examination of Varicose Veins & Venous Doppler Study. Sapheno-Femoral junction incompetence 80% clinically and 88% on Doppler study z value for which is 1.091 and p value 0.275 which is not significant. Sapheno-Popliteal junction incompetence 6% clinically and 10% on Doppler study z value for which is 0.737 and p value 0.461 which is not significant. Above knee perforator incompetence 24% clinically and 34% on Doppler study z value for which is 1.102 and p value 0.271 which is not significant.Below knee perforator incompetence 44% clinically and 54% on Doppler study z value for which is 1.10 and p value 0.271 which is not significant. P value for this comparison was 0.905 and c2 (Chi Square) was 0.561 which were both not significant.

VENOUS SYSTEM INVOLVED:

In this study, long saphenous vein was involved in 90% of cases (45 patients), the short saphenous vein in 4% (2 patients) and both long and short in 6% (3 patients).Delbe and Mocquet[12] in their study had found varicosity of long saphenous vein in 98% and only 2% in short saphenous vein. In the study conducted by Al-Mulhim et al [15] of Saudi Arabia, LSV involved in 68.42%. Both systems were involved in 24.56% of cases and isolated short saphenous vein was involved in 7.02% of cases.

COMPLICATIONS

Post-operative complications were comparable to study done by Mirji p et al except wound infection rate was only 4% in our study as compared to 25% in their study. This can be attributed to fact that total asepsis was maintained during operation and also in post op dressings in our setup. Bleeding and hematoma formation accounted for 2% and 8% respectively in our study as compared to 1% and 6.25% respectively in study done by Mirji P et al. Total complication rate in post op and follow up period was only 14% as compared to 34% in their study.

FOLLOW UP

Follow up of the patients was carried out for up to 6 months and following observations were made. Out of 36 patients having dilated veins 30 had complete cosmetic benefit from the treatment rest 6 had partial or total recurrence. Out of 21 patients having venous ulcer due to varicose vein 17 patients showed full recovery on follow up whereas 4 patients had incomplete healing of ulcer. Out of 10 patients of eczema /edema/ lipodermatosclerosis 6 patients showed full reverting of skin changes whereas there was no significant change in remaining 4 patients.

CONCLUSION

Fifty cases of varicose veins of the lower limb have been studied in detail. An analysis of the data has enabled this study to arrive at the following conclusions. Varicosity of the lower limb is a common clinical entity. The number of cases reporting to the hospital is much less than the real incidence; because in the absence of symptoms due to varicose veins patients do not seek treatment in our country. The commonest age group of patients suffering from varicose veins is 21 to 40 years. Most of the patient presented to the hospital for cosmetic purpose specially the students who wanted to be recruited to army. The majority of the patients were male. The involvement of long saphenous system is more common than the short saphenous system. Left limb is affected more common. The cause for the same is not known but could be attributed to the longer course traversed by the left iliac veins. Every patient as an individual is important and recurrence is not acceptable hence surgery cannot be planned based solely on clinical examination or it may lead to wrongful management. Color Doppler is gold standard in diagnosis of varicose veins and should be compulsorily done before going for management of varicose veins. Operative line of treatment is a primary procedure in the management of varicose veins of lower limbs. Saphenofemoral junction ligation with LSV stripping with perforator ligation and non-stripping of SSV is associated with very low recurrence and morbidity. Venous ulcer heal well after Bisgaard's regimen followed by surgery. Surgery is a quality modality for varicose veins patients with ulcer with low recurrence rate after conservative healing of ulcer. Complications are negligible if cases are meticulously selected and operated. The present procedures enable the patient to lead almost normal life after surgery with few recoverable morbidities.

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