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RESEARCH ARTICLE

CLINICAL PROFILE AND MANAGEMENT OF VARICOSE VEINS AT TERTIARY CARE HOSPITAL, INDIA

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ABSTRACT

Background and objectives of study: Varicose veins of lower limb is a common clinical manifestation, which starts early in the life but assumes an innocent course for variable length of time. The adult prevalence of visible varicose veins is 25–30 per cent in women and 15 per cent in men. This study intends to know the predisposing factors, management of varicose veins of lower limbs effectively and to prevent its complications.

Methods: 150 patients admitted to the hospital, who met with inclusion and exclusion criteria were subjected to detailed clinical examination and investigation. INCLUSION CRITERIA being Primary varicose veins, Perforator incompetence, Varicose ulcer EXCLUSION CRITERIA being Secondary varicose veins, Deep vein thrombosis, Recurrent varicose veins. The study period was 12 months with 2 months follow up. Patients were evaluated and followed up according to a protocol.

Results: In this study males are more prone to the development of varicosity of lower limb than the female (M: F = 3:1) the disease is more common in 30 to 40 years age groups (34%). Occupation involving prolonged standing are the main contributory factors, patients present with engorged vein (92%) and pain (70%) as main symptom and with its complications . Left lower limb (47%) and long saphenous and perforator systems (86%) are predominantly involved. Duplex USG is the gold standard investigation in diagnosis of the disease. Most common surgery done was SFJ with perforator ligation (56%). Among post op complications the seroma formation (10%) was more common.

Conclusion: This study shows the varicose veins of lower limbs is more common in middle age group with male predominance, and occupation and family history are the other contributory factors. Doppler ultra sound scanning is the investigation of choice. Saphenofemoral junction ligation with perforator ligation showed good outcome.

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INTRODUCTION

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. Most of these persons have either symptoms or complications from chronic venous in sufficiency 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 the concept of management of varicose veins. [2] The definitive operative treatment when indicated is well established depending upon the type of varicosities.

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The operative treatment is always proceeded and followed by conservative treatment. The conservative measures may be the only treatment when the operative interference is not advisable. An earnest Endeavour's has been made to study predisposing factors, investigations, complications and treatment aspects of the varicose veins of the lower limb.

Aims and objectives

- To study the age, gender, occupational and anatomical factors associated with varicose veins.
- To study the management of lower limb varicose vein and its outcome.
- To study the relation between site of incompetence and complications of lower limb varicose veins.

MATERIALS AND METHODS

This study includes all the patients admitted with lower limb varicose veins to the surgical department of EMPLOYEE'S

STATE INSURANCE CORPORATION MEDICAL COLLEGE, Rajajinagar, Bangalore from November 2013 to November 2014. All the cases were evaluated by taking detailed history and by carrying out thorough clinical examination. The findings were recorded in a clinical proforma.

Inclusion Criteria

- Primary varicose veins
- Perforator incompetence
- Varicose ulcer

Exclusion Criteria

- Secondary varicose veins
- Deep vein thrombosis
- Recurrent varicose veins

The study of 150 cases of varicose veins of lower limb. 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 test etc.

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.

Method of collection of data

Statistical analysis: collected data will be evaluated using SPSS 18 software.

Investigations

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.

Interventions included: Conservative Treatment and Surgical Treatment.

Conservative 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.

Surgical Treatment: Following surgical treatment were carried out in our institute

- Tendelenberg's operation with subfascial or extrafacial ligation of perforators
- Sephana popliteal junction ligation with multiple stab avulsions.

Data Analysis

The post operative course was noted and minor complications were attended and treated accordingly further patients were followed up. Final outcome evaluated. All the clinical data of each patient were recorded in the pre coded clinical proforma designed for the study. Important data pertaining to the each case is shown in the master chart and results are analysed by comparing with standard results of known authors. Ethical clearance obtained from our institution for the study.

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 surgical ward of ESIC MEDICAL COLLEGE, Bangalore, and following findings were noted and analyzed.

Sex distribution

Table 1. Sex Distribution

Gender	No of patients	Percentage
Male	109	72
Female	41	27
Total	150	100

It was more common in males (109) then compared to females (41) patients in the ratio 3:1.

The age distribution

The age distribution is characteristically between 30 - 40 years. The youngest patient is at the age of 20 years and the oldest at 70 years.

Table 2. Age Distribution

Age in years	No of patients	Percentage
20- 30	12	8
31- 40	51	34
41- 50	41	27.3
51- 60	25	16.6
61-70	21	14

Occupation

Table 3. Occupation predisposed to varicose veins in the study

Occupation	No of pts	Percentage
Farmer	60	40
Shopkeeper	25	16
House wife	25	16
Traffic police	15	10
Bar attender	10	6
conductor	10	6
others	5	3

It was more common in people with prolonged standing such as farmers - 60, shopkeepers -25, traffic police - 15 etc

Family history

Among 150 cases studied, 35 cases (23%) 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 causes of varicosity.

Table 4. Family History of Varicose Vein

Varicose Vein	No. of Cases	Percentage
Present	35	23
Absent	115	76

Varicose Vein No. of Cases Percentage

Clinical Manifestations

Table 5. Clinical Manifestations

Symptoms	No of patients	Percentage
Prominent veins	138	92
Pain	105	70
ulcer	35	23
edema	31	20
Others(skin changes)	22	14

Ceap Classification

Table 6. Clinical Class of CEAP

Clinical Class	Limbs	Percentage
0	0	0
1	10	6
2	110	73
3	20	13
4	25	16
5	15	10
6	6	4

Limb Involvement

Table 7. Limb Involvement

Limb involvement	No of patients	Percentage
right	62	41
left	71	47
both	17	11

It was more common in left lower limb then compared to right one, 71 patients developed in left and 62 patients in right lower limb. In the present study, right limb involvement of 41% and left limb involvement of 47%. In the present study bilateral involvement is seen in four patients (11%).

Venous System Involvement

Table 8. Venous system involved

System Involved	Limbs	Percentage
Long saphenous vein	143	95
Short saphenous vein	10	6
Both	55	36
Perforator	20	13

As, the long saphenous vein extends along the whole length of the limb, it bears the burnt 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.

Site of incompetence

Table 9. Site of Incompetence

Site of incompetence	Number on patients	Percentage
Saphenofemoral	13	8
Saphenofemoral + Perforators	129	86
Sapheno popliteal + Perforators	65	43
Perforators	0	0

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.

Surgical Procedures

Table 11. Surgical Procedures Performed

Type of surgery	No of patients	Percentage
SFJL+PL	85	56.6
SFJL	10	6.6
SFJL+SPJL+PL	40	26.6
PL	0	0
SPJL+PL	15	10
Total	150	100

In this study about 85 limbs underwent Saphenofemoral flush ligation (SFJL) with perforator ligation (PL), 40 patients underwent saphenofemoral flush ligation with saphenopopliteal junctionligation (SPJL) with perforator ligation.

Complications

Table 12. Complications

Complications	No of patients	Percentage
Seroma	15	10
Bleeding	14	9
Wound infection	10	6
Paresthesia	13	8
Delayed healing	8	5
Recurrence	0	0

Complications Number of patients Percentage

In the present study some minor complications such as seroma, wound infection etc occurred which were managed conservatively.

DISCUSSION

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.

Sex Distribution: 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 show a clear female predominance (M: F = 1:5)[57]. In present study M: F = 3:1 males are more prone for the development of varicose veins.

Age Distribution: The varicose veins are more predominant in the age group of 30- 40 years. [57,60]

Occupation: Varicose veins are common in persons, whose occupation forces them for prolonged standing, for long

number of hours while executing their work. In present study 76% patients are affected by prolong standing.

Family History: The occurrence of varicose veins in several members of the same family suggests that hereditary factors may be an important cause of varicosity. In present study it is 23 % many other studies have shown similar results.

Clinical manifestations: Almost all the patients will have pain and prominence of veins as common symptoms (87%), associated with other manifestations and complications of varicosities (38.7%). Cosmetic appearance was the commonest presenting complaint which favours with other comparative studies.

CEAP Classification: The majority of patients came to the hospital to seek treatment for one or the other complications of varicosities. The 74.2% of patients had complaint of prominent veins and pain (CEAP class 2)

Limb involvement: In the present study, right limb involvement of 41% and left limb involvement of 57%, favourably compares with the study conducted by A.H.M. Dur, A.J.C. Mackaay *et al*.[58] The cause for the increased incidence of left side is not known. This is a probably because that the left iliac veins joins at an angle; being constantly presented by the loaded left colon, the right common iliac artery crossing over the left common iliac vein and the longer course traversed by the left iliac veins. Unlike the right lower limb which is not subjected to these anatomical disadvantages.

Venous System Involvement: As, the long saphenous vein (95%) extends along the whole length of the limb, it bears the burnt 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 haemody namically disturbed limbs. Similar results were observed with Al-Mulhim *et al*.[64]

Site of Incompetence: The majority of patients had combined saphenofemoral and perforators incompetence (80.6%).

Doppler USG: All the patients in the present study underwent Doppler USG.

Management of Varicose Veins: 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 Sephana-femoral 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. Though antibiotics were routinely employed 10 (32.2%) out of 150 cases had wound infection. They took 15-20 days to heal completely. There was no incidence of deep vein thrombosis or pulmonary embolism post operatively in our study. The post operative follow up was for 2-3 months. There was no any mortality in our study.

Summary

Total number of 150 cases of varicose veins of the lower limb has been studied in detail and an analysis of the data has been presented with few conclusions.

- Varicosity of the veins of the lower limb is a fairly common clinical entity.
- In spite of dilated veins for years majority of patients presented only after complication.
- The disease is more prevalent in middle age adults (30-40). The majority of patients are males in the study.
- The occupation that needs prolonged standing is found to be the major contributory factor.
- Hereditary factors may play an important role in development of varicose veins. In the present study 23% of patients gave history of a first degree relative suffering from the disease.
- Most of the patients are presented to hospital for one or more of complications of varicosities rather than

Conclusion

Distributions of varicose veins of lower limbs is more common in middle age group (30-40 yrs) with male predominance, occupation and family history are the other contributory factors. Combined SFJ and perforator incompetence is more common rather than individual incompetence. Trendelenburg-Brodie operation with flush ligation with Subfascially or extrafascial ligation is the procedures done for effective treatment of varicose veins.

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