

Clinical Presentation and Management Of Varicose Veins: Findings From A Tertiary Care Hospital, Guntur.

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Abstract: *Introduction:* Varicose veins are a common medical condition present in at least 10% of the general population and remains most of the times remains asymptomatic.

Material & Methods:

This study includes all the patients who came with lower limb varicose veins to Surgical Department of Government General Hospital, Guntur Medical College, Guntur from September 2017 to September 2018. Total number of patients were 98 (102 limbs). All the cases were evaluated by taking detailed history & by carrying out thorough clinical examination. The findings were recorded in clinical proforma.

Results: Majority were males (80.61%) and belonged to 20-50 years age group. The long saphenous vein was involved in 92% of cases.

The patients with higher grade of clinical CEAP classification had combined valvular incompetence. All the patients with ulcers had perforator incompetence. Surgical procedures performed: Sapheno-femoral flush ligation and stripping was done in 93% of the patients.

Conclusions: Varicose veins mainly involves the Long saphenous system due to saphenofemoral and perforator incompetence. Most of the patients had complications of varicose veins. Duplex ultrasonography is the investigation of choice. Trendelenburg operation with stripping is very effective in the treatment of varicose veins.

Keywords: varicose veins, distribution, clinical features, management

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I. Introduction

Varicose veins of lower limb and their treatment are as old as mankind. Hippocrates discussed them 2500 years ago. It is not found in other animals and it is the human beings, who had to pay for erect posture. Varicose veins and their associated symptoms and complications constitute the most common chronic vascular disorder of the lower limb. The term varicose is derived from the Latin word meaning "dilated". Varicose veins is defined as dilated, tortuous and elongated veins in the lower limbs.

Varicose veins, though a common condition most of the times remains asymptomatic. It is in the developed countries, where Attire reveals more than it conceals, patients turn up for cosmetic reasons. In our Indian scenario it is the complications and not the cosmetic reasons, bring the patients to the doctor. That is the reason why, though common, varicose veins remain as an iceberg phenomenon.

Varicose veins are a common medical condition present in at least 10% of the general population^[1]. The symptoms of varicose veins range from asymptomatic varicose veins to more severe complications such as ulceration and bleeding. Varicose veins may cause morbidity including dermatitis, ankle edema, spontaneous bleeding, superficial thrombophlebitis, lipodermatosclerosis and ulceration.

Varicose veins were recognized pre historically and many inventions were made regarding the diagnosis and treatment of varicose veins by many phlebologists including various bandaging techniques, ligation and stripping of veins. The attention was mainly towards the mechanical effects of the varicosity rather than the basic cause. It is only in the recent past that enough knowledge has been gained concerning the anatomy of the venous system of the leg, the physiological mechanism of venous return to the heart against gravity and pathology of the disorder, which has led to many newer modalities of investigations and treatment.

The Doppler ultrasound and duplex imaging has become the mainstay of investigations in the diagnosis of chronic venous insufficiency^[2].

The treatment options for varicose veins includes conservatively by applying stockings, Bisgaard's regimen and surgically by doing Trendelenburg operation, Stripping, Subfascial ligation of perforators, Laser, Sclerotherapy, Subfascial endoscopic perforator surgery & Radiofrequency ablation. In the recent past, minimally invasive procedures are replacing the more invasive procedures.

The search for more effective means of diagnosing and treating the varicose veins and prevention and management of its complications continues and this dissertation aims at studying the distribution, pathology, clinical features, various modes of investigations and overall management of varicose veins of lower limbs.

Objectives of the present study were to study the distribution, pathophysiology and clinical features of varicose veins of lower limbs and to study the various modes of investigations and management of varicose veins in the lower limbs effectively and to prevent complications.

II. Material & Methods:

SOURCE OF DATA

This study includes all the patients who came with lower limb varicose veins to Surgical Department of Government General Hospital, Guntur Medical College, Guntur from September 2017 to September 2018.

SAMPLE SIZE

Total number of patients were 98 (102 limbs). All the cases were evaluated by taking detailed history & by carrying out thorough clinical examination. The findings were recorded in clinical proforma.

INCLUSION CRITERIA

- 1) Primary varicose veins
- 2) Symptomatic varicose veins with symptoms of aching, heaviness and cramps
- 3) Complications of venous stasis such as pigmentation, dermatitis, ulceration and superficial thrombophlebitis.
- 4) Large varicosities subject to trauma.
- 5) Cosmetic concern.

EXCLUSION CRITERIA: patients with

1. Dermal flares, reticular veins and telengectasia (C 1 clinical class)
2. Secondary varicose veins
3. Deep vein thrombosis
4. Recurrent varicose veins were not included in the study.

Informed consent was obtained from each patient before all investigations and procedures.

Thorough physical examination done by investigator himself by using the fore mentioned clinical tests and confirmed by doing special non-invasive investigations such as Duplex ultrasound.

INVESTIGATIONS:

ROUTINE INVESTIGATIONS LIKE-

- 1) Hemoglobin percentage
- 2) Total & differential WBC count
- 3) ESR
- 4) Bleeding & clotting time
- 5) Urine routine Urine albumin, sugar & microscopy
- 6) Blood sugar
- 7) Blood urea
- 8) Serum creatinine
- 9) Chest X-ray
- 10) ECG

SPECIAL INVESTIGATIONS LIKE-

- 1) Doppler of venous system.
- 2) Duplex scanning for accurate diagnosis and planning of treatment.
- 3) Plain X-ray of affected part in case of venous ulcer particularly in presence of signs of infection for evidence of periostitis.

TREATMENT

CONSERVATIVE TREATMENT:

A course of conservative treatment was given whenever indicated with rest and elevation of foot while on bed, antibiotics, avoid work which entails prolonged standing, elastocrepe bandage and Bisgaard's regimen for ulcer.

SURGICAL TREATMENT:

Following surgical treatment were carried out in our Institute.

- 1)Trendelenberg’s operation
- 2) Stripping of long Saphenous vein
- 3) Subfascial or extra facial ligation of perforators.
- 4) Multiple stab avulsion of long Saphenous vein
- 5) Saphenopopliteal junction ligation

DATA ANALYSIS

The postoperative course was noted, minor complications were attended and treated accordingly. Patients were followed up further. 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 each case is shown in the master chart & the results are analyzed by comparing with standard results of known Authors.

III. Observation And Results:

The Indian male appears to be more prone to the development of varicosity of veins of lower limb than the females. In the present study 79patients (80.61%) out of are males and 19patients (19.38%) out of 98 are females.The age distribution is characteristically between 20 to 50 years. This group includes 75% of cases. The youngest patient is of the age of 16 years and the oldest at 70 years.

Occupation has a definite role to play as a causative factor. Varicose veins are common in person, whose occupation demands prolonged standing. It is the part of the penalty for adopting an erect posture. In the study, most common occupation observed was agriculture (25%) followed by manual labour (17%).

Among 98 cases studied, 48 cases had family history of close relatives,suffering from varicose veins. The occurrence of varicose veins in several members of the family suggests that hereditary factors may be an important cause of varicosity.

Almost all patients had prominent varicosities as common symptom seen in all the patients (100%), associated with other manifestations and complications of varicose veins such as pain, edema.

In the CEAP classification, majority of the patients 39% belonged to clinical class II followed by class III 36%). The 61% of patients had complications.

In the present study, right limb involvement of 36% and the left limb involvement of 60%. Both limbs were involved in 4 patients.

Venous system involvement:As the long saphenous vein extends along the whole length of the limb, it bears the brunt of the erect posture. The long saphenous vein was involved in 92% ofcases, the second victim being the perforators which was involved in 87%of cases.The short saphenous vein involvement in the present series was 4%.

Sites of Incompetence: Majority of the patients 75% have saphenofemoral and perforator incompetence. Isolated perforator incompetence is seen only in 3%of patients. 7% of patients have combined saphenofemoral, sapheno-popliteal and perforator incompetence.

Majority of patients (70%) have Lower leg and ankle perforators incompetence.

Correlation Between CEAP And Site Of Incompetence:

The patients with higher grade of clinical CEAP classification had combined valvular incompetence. All the patients with ulcers had perforator incompetence.

Table1: Correlation between CEAP and Site of Incompetence

CEAP	limbs	SFI	SFI+PI	SFI+SPI+PI	SPI+PI	SPI	PI
0	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-
2	40	4	28	5	-	1	2
3	37	5	27	3	-	1	1
4	15	1	13	-	1	-	-
5	4	1	2	-	1	-	-
6	6	-	6	-	-	-	-

DUPLEX ULTRASOUND:Duplex ultrasound was required to accurately diagnose perforator incompetence in 11 patients.

Table 2: Correlation Between Clinical Examination Versus Duplex Ultrasound

Findings	Clinical examination	Duplex USG
Sapheno-femoral incompetence	95	95
Sapheno-popliteal incompetence	12	12
Perforator incompetence		
Above knee perforator	02	03
Below knee perforator	22	24
Lower leg and ankle perforators	54	62
Deep vein thrombosis	-	-

Surgical procedures performed: Sapheno-femoral flush ligation and stripping was done in 93% of the patients.

Complications of Surgery: Most of the patients in this study (12%) developed wound infection post-operatively followed by sensory neuritis (10%) and Haematoma (8%). Other complications seen were Lymphorrhoea and Wound dehiscence

IV. Discussion

Though the western study show a clear female predominance (Male : Female = 1:5),⁴¹ the present study showed Male:Female ratio of 4.1:1. It is because, females do not undergo occupational hazards of that of males, like prolonged standing, physical stress involving increased intra-abdominal pressure. And these females sought treatment for symptoms due to varicosities rather than cosmetic reason.

Majority of the patients in the study were less than 50 years, so it is the disease, which affects the youth and bread-earning members of the family. These findings are consistent with other studies.

In the present study 48.97% of patients had family history of varicose veins which are in consistent with other studies. Works of many others like, Basle study, studies of Hirai, Mekay and Colleagues, Prerovsky and study by Belcaro agree for positive family history in patients of varicose veins, but in all these studies none of the relatives were assessed clinically, importance was given only to the history given by the patient^[3].

Almost all the patients (100%) had prominent veins as the presenting complaint. Pain is present in 53 %, edema is present in 49%, skin changes seen in 26% and venous ulceration seen in 10%. Cosmetic appearance was the commonest complaint which favours with the other comparative studies^[4].

Majority of patients came to hospital to take treatment for complication of varicose veins (61%). Only 39% of patients had only prominent veins , which belong to class II. In Rao SV et al study, 45% of patients, present with clinical grading (C2) followed by active ulceration and lipodermatosclerosis (C6) in 40%^[5]. In Mishra S et al study, 20 patients are with C2, 15 cases are with C3, 15 cases are with C4 and 10 cases are with C5^[6].

In the present study right limb is involved in 36%, left limb is involved in 60%. Bilateral involvement is seen in 4% of patients. This favourable compares with the study conducted by A.H.M.Dur, A.J.C. Mackaayet.AI^[7].

Majority of the patients has combined saphenofemoral and perforator involvement. Similar results were observed in Al-Mulhim.et.al^[8]. In Heyerdale WW et al study, great saphenous vein and short saphenous vein were affected in the ratio 3:1^[9].

In the present study, 70% of patients have lower leg and ankle perforator incompetence. Patients who had lower leg and ankle perforator incompetence had one or the other complications of varicose veins. Isolated above knee perforators is seen in four patients only and below knee perforator incompetence seen in 27%. In Liu CH, Wu CJ et al study, Mid-thigh perforators are involved in 17.6%, upper calf perforators are involved in 52.6% and lower calf perforators are involved in 29.8%^[10]. In this study below ankle perforator involvement is high.

In Delis KT et al study, in Chronic vein Insufficiency, incompetent perforator veins are located predominately in the medial aspect of the lower extremity, more often in the middle third of the calf, followed by the lower calf and middle thigh^[11].

Treatment: In the present study sapheno-femoral flush ligation + stripping (SFFL+STRP) was performed in 10% of patients, Sapheno-femoral flush ligation+ multiple stab avulsion (SFFL+MSA) was performed in 4% of patients, sapheno-femoral flush ligation+ stripping+subfascial ligation (SFFL+STRP+SFL) was performed in 61%, saphenofemoral flush ligation + stripping+ subfascial ligation+ split skin grafting (SFFL+STRP+SFL+SSG) was performed in 10% of patients, saphenofemoral flush ligation + stripping + saphenopopliteal ligation +subfascial ligation (SFFL+STRP+SPL+SFL) was done in 8% of patients,

saphenopopliteal ligation (SPL) alone is done in 2% of patients, saphenopopliteal ligation+ subfascial ligation (SPL+SFL) was done in 2% of patients, subfascial ligation (SFL) alone is done in 3% of patients.

S.K.Sahu, S.Bhushan, P.K.Sacha, ^[12] showed that SF flush ligation combined with multiple stab avulsion or perforator ligation offered very good results. Other studies like Kompally GR et al study, "Trendelenburg's operation with subfascial ligation has given good results in their set up."^[13]

With regards to complications, patients were observed for complications both intraoperatively and postoperatively. Wound infection was seen in 12% of patients, Hematoma was observed in 8%, saphenous neuritis was observed in 10% of patients, wound dehiscence was observed in 3% of patients and 4% patients had lymphorrhea from the inguinal wound. None of our patients had femoral vein injury, femoral artery injury, deep vein thrombosis or pulmonary embolism.

The study conducted by Hagmuller G.W ^[14] showed incidence of some major complication which are very rare and none of which occurred in the present study group.

In the present study no recurrence was seen as the flush ligation and GSV stripping is the best surgery than SF ligation and Sclerotherapy. This statement is also confirmed by other studies like Miyazaki K et al, the recurrence-free rates at 4 years after stripping, saphenofemoral ligation and sclerotherapy were 80.7%, 64.5%, and 51.3%, respectively. The saphenofemoral ligation group and sclerotherapy group had significantly higher recurrence rates than the stripping group. There was no difference in recurrence rates between the saphenofemoral ligation group and sclerotherapy group^[15].

Sutures were removed at postoperatively 8-10 days. Patients were advised elastic compression stockings for 1 year post operatively. Patients were followed regularly, none of them developed recurrence.

V. Conclusions

Our study shows that the prevalence of varicose veins of lower limbs is more in people of younger age group. Family history of varicose veins of lower limb is an important risk factor in the development of lower limb varicose veins. Occupations involving prolonged standing is an important predisposing factors in the development of lower limb varicose veins. Varicose veins mainly involves the Long saphenous system due to saphenofemoral and perforator incompetence. Most of the patients had complications of varicose veins. Duplex ultrasonography is the investigation of choice. Trendelenburg operation with stripping is very effective in the treatment of varicose veins.

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