International Journal Dental and Medical Sciences Research
Volume 4, Issue 2, Mar-Apr 2022 pp 127-131 www.ijdmsrjournal.com ISSN: 2582-6018

# A Study of Clinical Features and Management of Varicose Veins of Lower Limb

Dr, Praveen Kumar Mishra[(1)], Dr S. K. Sagar [(2)] Dr Anil Negi[(3)] Dr Dhiraj Kumar [(3)]

*Sri Ram Murthi Institute of Medical Sciences Bareilly*

Submitted: 05-03-2022 Accepted: 16-03-2022

**ABSTRACT**

Varicose vein are defined as dilated usually tortuous , subcutaneous vein > 3mm in diameter mainly affect economically productive age group individual. Current paper elaborate the feature of the condition in a local Indian population .

METHODOLOGY

Overall two year period all admitted patients of varicose vein were evaluated demographics clinical manifestation , treatment & outcome

Result

Study reveals that disease is more prevalent during the active adult life and male are commonly affected , prolong standing occupation is found to be a contributing factor for varicose vein . Majority presented to hospital for complication rather than cosmetic purpose .Dilated veins with pain (48%) is the most common symptom presented . majority of patients had left lower(50%) involvement and long saphenous system(62.97%) involvement were commonly found .Wound infection (25%) was most commonly post op complication observed .

## I. INTRODUCTION

Veins are part of a dynamic and complex system that returns low nutrient deoxygenated blood to the heart . Varicose vein is defined as dilated , tortuous and elongated veins . varicose veins are a common medical condition present in at least 10% of the general population . The condition affected by man's upright position and by gravitational forces , is widespread , involving at least one out of five individuals in the world , hence making this a very common condition . 20% of the population suffer with varicose vein and 2% have skin changes that may precede venous ulceration The doppler ultrasound and duplex imaging has become the mainstay of investigation in the diagnosis of chronic venous insufficiency . The treatment option for varicose veins include Trendelenburg operation , stripping , subfascial of perforators, laser , sclerotherapy, subfascial endoscopic perforator surgery & radiofrequency ablation . This study aims at studying the distribution , pathology , clinical features , investigations and overall management of varicose veins of lower limbs.

**Methodology**

Present study was done in SRMS , Bareilly in department of General Surgery between the time period of NOV 2019- APRIL 2021 . It is prospective & observational study with sample size of 50 patients

**INCLUSION CRITERIA**

Includes patients more than 18 years of age with primary symptomatic varicose vein .Patients presenting with complication of varicose vein such as pigmentation , eczema , ulceration and with cosmetic concern are also included .

**EXCLUSION CRITERIA**

Patient treated on outpatient basis , varicose vein d/t DVT & other course of venous obstruction Most specific criteria for exclusion is patient having varicose vein due to secondary cause

## II. OBSERVATIONS AND RESULTS

In present study, 50 patients with primary varicose veins were admitted and studied, out of 50 patients , 43(86%) patients were male and 7(14%) were female . Amongst males maximum 10(20%) are from 21 – 30 year age group where as in female maximum 3 (6%) belongs to age group of 41 – 50 years. Twenty ( 40%) patients presented with symptoms persisting for more than 2 years. Ten (20% ) patients presented within 6 months of duration and other 12(24%) presented with in 2 years. Fourteen (28%) of the patients were security personals which include police men , army personals , security guards. Most common presenting symptom was prominent vein in all the patients associated w0ith swelling in 10 (20%) , pigmentation 7(14%) , eczema 6(12%) and ulceration 3(6%) patients. out of total 50 patients that were included 54 lower limbs were studied , 25(50%) of the patients had their left lower limb involvement followed by 21 (42%) had right lower

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limb and 4 (8%) had there both lower limb involvement. The most commonly involved venous system was long saphenous system. The most common site of venous incompetence observed was sapheno-femoral with perforator incompetence in 32(59.26%) patients followed by sapehno femoral incompetence alone in 11 (20.37%) patients.

Various operative procedures were performed on the basis of age , severity , pathology , and choice of the patient. Trendelenberg operation was performed in most of the patients 31(63%). Newer methods such as EVLT and RFA was also given as choice to patients and performed in 5 (10%) and 14 (28%) of the patients respectively. Skin staining was found to be the most common post- procedure complication overall. Whereas, least complications occurred in EVLT. Fifteen (30%) patients were discharged on the same day as a day care procedure , twenty patients (40%) stayed in hospital 3-4 days where as 10 (20%) patients stayed maximum , 5- 6 days in hospital. Only 1 patient stayed in hospital more than 7 days because of post surgery complication.

Table 1 - **occupational distribution of the patients**

| Occupation | Frequency | Percentage(%) |
|---|---|---|
| **House wife** | 4 | 8.0% |
| **Athlete** | 6 | 12.0% |
| **Student** | 8 | 16.0% |
| **Teachers** | 3 | 6.0% |
| **Security** | 14 | 28.0% |
| **Farmer** | 5 | 10.0% |
| **Barber** | 1 | 2.0% |
| **Shopkeeper** | 4 | 8.0% |
| **Lineman** | 1 | 2.0% |
| **Bus conductor** | 1 | 2.0% |
| **salesman** | 3 | 6.0% |
| **Total** | 50 | 100.0% |

**Table 2- Distribution of patients according to symptoms at presentation**

| Symptoms | Number of Patients | Percentage |
|---|---|---|
| **Pain with prominent vein** | 24 | 48.0% |
| **Prominent veins with swelling** | 10 | 20.0% |
| **Prominent veins + swelling + pigmentation** | 7 | 14.0% |
| **Prominent veins +Eczema + pigmentation** | 6 | 12.0% |
| **Prominent veins +Ulcer +eczema +pigmentation** | 3 | 06.0% |
| **Total** | 50 | 100.0% |

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Table 3 - **Venous System Involved on the basis of Colour Doppler**

| Venous System | Numbe of limbs | Percentage |
|---|---|---|
| **LSS** | 34 | 62.97% |
| **SSS** | 6 | 11.11% |
| **Both** | 14 | 25.92% |
| **Total** | 54 | 100.0% |

Table 8 - **Different Procedures Performed**

| Procedures | Number of Patients | Percentage |
|---|---|---|
| **Trendelenberg** | 31 | 62% |
| **RFA** | 14 | 28.0% |
| **EVLT** | 5 | 10.0 |

## III. DISCUSSION

In the present study, males had outnumbered female and we have found male to female ratio was 6:1 which is in accordance with the previous study done by N.Joseph et al[1]. In an another study done by Pramod Mirji et al[2] similar ratio of 3:1 was observed. The reason for increase in number of male as compared to female might be occupational hazard, i.e. prolong standing and more physically exertional work[3,4].

As far as age is concerned, majority of patients 18(36%) were in middle age group that is between 21 – 40 years, which is consistent with the study published earlier by Pramod mirji et al[2]

The average duration of symptoms in our study was 4 years, the longest duration of presentation observed was more than 10 years. It was consistent with the duration mentioned in a study done by R. sachin raj et al[3] where the minimum and maximum duration of presentation was 4 years and 15 years respectively.Reason for the late presentation being the benign nature and asymptomatic presentation of the disease which make the patient careless about it.In Indian setup females are not much concerned about the cosmetics unlike female of western countries.[2,5] thus female reporting less.

As prolong standing predisposes for varicose veins , in this study also majority of cases were seen in prolong standing workers. It was observed that security personals were the most, and they contributed to 28% (14) patients in our study. Almost every previous study have similar results stating that prolong standing occupation is a very common risk factor for causing varicose veins as in study done by H.Nagaraj et al [6]

In this present study of total 50 patients , 5(10%) patients had positive family history, which suggest that hereditary factors may also be important factor in etiology of varicose veins. Similarly, Pramod mirji et al[2] in his study had observed that 25% patients have positive family history.

NMajority of patients presented in hospital with symptoms or complications of varicose veins, in which the most common presentation was prominent vein associated with pain in 24(48%). Second most common presenting complaint was prominent veins with swelling in the same limb in 10(20%) patients. Other presenting complaints were prominent veins with or without eczema, ulceration and pigmentation.

Majority of patients presented late and with symptoms and complications, reason being ignorance of the disease and asymptomatic

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presentation. It is the observation of the author that patient seeks treatment for the complications of varicose veins most of the time rather than for varicose vein and for cosmetic reasons per se.[5]

Among all the patients, left lower limb involvement was found the most in 25(50%) patients, there were 4(8%) patients in which both the lower limbs were involved. In the work of Mackaay et al [7] he observed 51.45% patients have their left lower limb involved. Fanilda Souto Barros et al [8] in his study observed 41.7% patients with left lower limb involvement while 37.8% patients involving there right lower limb.the exact etiology behind this is still not known but the most probable cause is that the venous drainage of the left leg involves more tortuous course through the pelvis with left common ileac vein traversed by the common ileac artery and also due to presence of loaded sigmoid colon which exerts contact pressure on the vein in the pelvic cavity.[5]

Out of total 50 patients that were included for this present study 54 limbs were involved and underwent colour Doppler ultrasound for the confirmation of the diagnosis and was observed that long saphenous system involvement was present in 34(62.97%) limbs followed by both long and short saphenous system involvement in 14(25.92%) limbs and only short saphenous system involvement was present in 6(11.11%) limbs.Comparable results were observed in work of Al Mulhim et al[9] Majority of all patients that were observed had multiple site incompetence. 32(59.26%) limbs had a combined sapheno femoral and perforator incompetence followed by 11(20.37%) limbs had sapheno femoral junction incompetence.

Out of total 54 limbs involved in total 50 patients, patients with bilateral limb involvement were operated for only one limb at a time. Mainstream treatment as surgery was offered to 31 (62%) patients. Decision for surgery as a procedure was decided on the basis of age, severity, pathology, availability of other procedure and patients choice. The surgery performed was Trendelenberg procedure which is described as gold standard treatment for varicose veins surgery[10]. In this study 31(62%) underwent surgical procedure.

Incompetent perforator were managed by either multiple superficial flush ligation or multiple superficial avulsion. These procedures were done individually or with combination depending upon the venous system involvement.

Treatment of venous ulcer was done with compression and drug like micronized purified flavoid fraction (MPFF) and Pantoxifylline . With this treatment faster healing was noted , similar treatment was given in studies done by N.joseph et al [1], M.S.gohel et al [11].

Newer modalities like Radio frequency ablation (RFA) and Endo Vascular Laser Treatment (EVLT) were also performed in 14(28%) and 5(10%) of patients respectively. Benefit of such procedure is that they can be performed on the day care basis[12], other benefits of such procedures are shorter recovery periods and fewer complications[13], and improved quality of life. [9,10]. In the present study, complication rate that was observed post procedure and follow up was in 11 ( 22%) patients .Staining was found to be most common complication

Follow up rate of the patients was very less, Recurrence was noted in 2(4%) patients The most probable cause for recurrence according to T. Kostas et al[14] can be inadequate treatment, failure of identifying all incompetent veins or due to neovascularization in the pathway of previously stripped veins.Recurrence in newer procedures like RFA can be cause of new or recurrent perforating veins, recanalized GSV [15]. In comparison of EVLT with RFA, EVLT was found to be having less complications, better compliance , less recurrence [16].

Newer modalities like RFA, EVLT used in this study was helpful in patients for those who were in search of a day care procedure , total 15 (30%) patients were admitted for day care.Other studies had also stated that newer procedure like EVLT and RFA can be used as day care surgery or on out patient basis [12]

## IV. CONCLUSION

In the present study, we concluded that Varicose veins is more common in younger age group, amongst which males were more commonly affected. Prolong standing is an , important predisposing factor. Most patients had a late presentation. Varicose veins mainly involve the long saphenous vein due to sapheno femoral junction incompetence and perforator incompetence.

Colour doppler is the investigation of choice. Trendelenberg procedure with various ligation was the most common procedure. Newer methods like RFA and EVLT have given promising results in terms of decreased the hospital stay.

Varicose veins is a diverse topic of research and needs further study.

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