

ORIGINAL RESEARCH

Clinical Study of Primary Varicose Veins and its Complications

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ABSTRACT

Background: Varicose veins are the most common chronic vascular disorders requiring surgical treatment at one stage or other. Though considerable advances in understanding of venous patho physiology and modern imaging techniques have revolutionized the concept of management of varicosity of lower limb, the treatment of primary varicose veins still remain unsatisfactory. **Objectives of the Study:** To study the clinical signs & symptoms of the patients admitted for varicose veins. To study the prevalence of varicose veins in the patients admitted to Govt Medical College & Hospital, Suryapet, To study the age & sex distribution, To study the complications of varicose veins, To evaluate & manage the varicose veins & its complications, To study the outcome of surgery.

Materials and Methods: A prospective follow up study was undertaken for 40 patients who were admitted for various symptoms of varicose vein during August 2012 to August 2014. They were subjected to detailed history taking and examination with relevant investigations including Doppler venous study and were subjected to treatment. They were followed up to assess long-term morbidity and late complications.

Results: Total 40 patients admitted for varicose veins admitted during the period from Aug 2020 to Aug 2021 were studied. Out of 40 patients studied, 24 (60%) patients were agriculturists, who admitted of having been exposed to prolonged hours of standing. Among the 40 cases studied, 57 limbs showed varicose veins, of which 32 limbs had long saphenous vein and communicating system involvement (64%). 20 limbs had long saphenous vein involvement (40%) alone. Among 32 limbs with long saphenous and communicating system involvement, 45 had pain (90%), 12 had edema (24%), 29 had disfigurement (58%), 14 ulcers (28%). Of the 46 limbs that underwent surgery 26 (52%) underwent saphenofemoral flush ligation with stripping of LSV and subfascial ligation of perforators & 10 (20%) underwent saphenofemoral flush ligation alone.

Conclusion: Definite relationship exists between occupation involving prolonged standing and primary varicose veins. The involvement of long saphenous and communicating system together is commonest followed by long saphenous involvement alone. Patients with involvement of long saphenous and communicating system or long saphenous and short saphenous system were more symptomatic than others. Complications of varicose veins were responded well to operative treatment. Results of surgical treatment are good.

Keywords: LSV, SSV, Varicose vein, Doppler, Sclerotherapy, Radiofrequency ablation, Trendelenburg operation, Compression bandage, Duplex scan

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INTRODUCTION

Varicose veins are dilated, often palpable subcutaneous veins with reversed blood flow, most commonly found in the legs. Estimates of the prevalence of varicose veins vary. Visible varicose veins in the lower limbs are estimated to affect at least a third of the population. There is little reliable information available in the literature on the proportion of people with varicose veins who progress to venous ulceration. One study reported that 28.6% of those who had visible varicose veins without oedema or other complications progressed to more serious venous disease after 6.6 years. However there was no information about the numbers progressing to ulceration. Other data on the lifetime prevalence of varicose veins estimate that approximately 3–6% of people who have varicose veins in their lifetime will develop venous ulcers. Risk factors for developing varicose veins are unclear although prevalence rises with age and they often develop during pregnancy. In some people varicose veins are asymptomatic or cause only mild symptoms, but in others they cause pain, aching or itching and can have a significant effect on their quality of life. Varicose veins may become more severe over time and can lead to complications such as changes in skin pigmentation, eczema, superficial thrombophlebitis, bleeding, loss of subcutaneous tissue, lipodermatosclerosis or venous ulceration.^[1-4]

There are several options for the management of varicose veins, including:

- Advice and Reassurance
- Interventional Treatments
- Compression Hosiery

Interventional treatments include surgery, foam sclerotherapy and endothermal ablation. Surgery is a traditional treatment that involves surgical removal by 'stripping' out the vein or ligation (tying off the vein). In foam sclerotherapy sclerosant foam (irritating agent) is injected into the vein to cause an inflammatory response which consequently closes it. There are two main endothermal methods: radiofrequency and laser ablation, these methods heat the vein from inside causing irreversibly damage to the vein and its lining and closes it off. All treatments may be performed under general or local anaesthesia and do not usually require an overnight stay in hospital.^[5]

In this study an attempt is being made to study various clinical presentations of varicose veins, their management and their complications.

Varicose veins are the most common chronic vascular disorders requiring surgical treatment at one stage or other. Though considerable advances in understanding of venous pathophysiology and modern imaging techniques have revolutionized the concept of management of varicosity of lower limb, the treatment of primary varicose veins still remain unsatisfactory.

Objectives of the Study:

- To study the clinical signs & symptoms of the patients admitted for varicose veins. To study the prevalence of varicose veins in the patients admitted to Govt Medical College & Hospital.
- To study the age & sex distribution.
- To study the complications of varicose veins
- To evaluate & manage the varicose veins & its complications
- To study the outcome of surgery.

MATERIALS & METHODS

The present study—clinical study and management of varicose veins—was done at Govt Medical College & Hospital, Suryapet during the period between 2021—2022.

Source of Material

During this period 50 number of cases of varicose veins were studied, which were admitted to surgical wards at Govt Medical College & Hosptal during the period of Aug 2021 to Aug 2022. The selection of cases was random.

Method of Collection Data

The study was performed as per the proforma drafted for study of varicose veins. The clinical finding with coexisting medical illness was recorded in detail. The routine investigations were done and special investigations were performed wherever necessary. The pre-operative treatment, operative findings and post- operative outcome are documented. The details of cases of varicose veins were drawn as a master chart with record of only relevant and positive findings

Inclusion Criteria

- Patients aged between 20 to 80 yrs.
- All patients with dilated, tortuous veins with symptoms of venous insufficiency were included.
- Patients with venous ulcer are included.
- Patients with SFJ incompetence & SPJ incompetence,
- Patients with perforator incompetence.

Exclusion Criteria

Patients under the age of 20yrs & above 80yrs Patients with secondary varicose veins like those with:

- Arteriovenous fistula
- Iliac vein thrombosis
- Pelvic tumor
- Pregnant females
- Patients with DVT

Method of collecting the data

The patients included in this study are interrogated, detailed history taken, examined thoroughly, investigated and subjected them to the surgical treatment. All data including the name, age, sex, occupation, place of residence, etc, brief h/o, clinical findings, investigation reports, type of operation, operative findings, post- operative complications are entered in proforma prepared for the study. Patient followed up at the interval of three months noted the outcome of surgery.

All the cases were given tetvac injection before surgery. The parts and spine were prepared well. On the table, thorough preparation of the part was done with iodine scrub and spirit after giving anesthesia and surgical approach is decided.

Routine follow up was done during the immediate post-operative period and every day till discharge. Attention was paid to note the development of any complications like, Treatment was administered from time to time according to the needs of patients. Most of patients who underwent surgery received IV fluids for a day, broad spectrum antibiotics, sedatives and analgesics.

After removal of sutures and improvement of general condition, the patients were discharged from the hospital with an advice regarding diet, rest, type of work to done, drugs to be taken and to prevent long standing, and usage of elastic crepe bandage, etc and with a further advice to come to check up once in 15days for one month and further once in a month. Those who came for checkup were examined in detail. The general condition and examination of

operated limb were carried out to find out the healing of wounds, appearance of any scar, any presence of tenderness and recurrence.

RESULTS

50 patients with primary varicose veins who were treated in Govt Medical College & Hospital, were included in the study. Total number of 84 patients operated at Govt Hospital, during the study period from Aug 2021 to Aug 2022, out of which 50 cases were for varicose veins, amounting to 59%

Table 1: Age Distribution

Age groups (years)	No. of cases	Percentage
21-30	10	25
31-40	8	20
41-50	14	35
51-60	06	15
>61	02	5
Total	40	100

The age of these patients ranged from 20yrs to 64 yrs. The commonest age group of our patients was between 41 to 50 yrs. (35%).

Table 2: Sex Distribution

Gender	No of cases	Percentage
Female	6	15
Male	34	85
Total	40	100

Out of 50 patients 6 were female and 34 were male.

Table 3: Limb Distribution

Side	No. of cases	Percentage
Right	20	50
Left	29	72.5
Bothlimbs	09	22.5

Most commonly affected limb was left limb, (in 29pts 72.5 %), when compared to right (in 20 pts. 50%).

Table 4: Symptomatology

Symptoms	No. of cases	Percentage
Pain	35	87.5
Cramps	0	0
Limbedema	8	20
Ulcer	10	25
Disfigurement	21	52.5

Our patients presented with varied symptoms, out of which pain was most common compliant in 87.5% of the patients, followed by disfigurement in the leg in 52.5%.

Out of 40 patients studied, 24 (60%) patients were agriculturists, who admitted of having been exposed to prolonged hours of standing. 6 (20%) were students, 6 (20%) housewives.

Table 5: Occupational distribution

Occupation	Frequency	Percent
Agriculture	24	60
Housewife	6	20
Student	6	20
Total	40	100

Systems Involved

Among the 40 cases studied, 36 limbs showed varicose veins, of which 22 limbs had long saphenous vein and perforator involvement (55%). 18 limbs had only long saphenous vein involvement (45%). 8 limbs had perforator involvement (20%), 4 limbs had long saphenous and short saphenous involvement (10%). 2 limbs had short saphenous and perforator involvement (5%). 2 limbs had short saphenous involvement only (5%).

Table 6: Diagnosis

System involved	No. Of patients	Percentage
SFJI	18	45
SPJI	2	5
SFJI+ PI	22	55
SPJI+ PI	2	5
I	8	20
SFJI+ SPJI	4	8

Complications

Of the 36 limbs involved, 24 (60%) had pigmentation, 11(27.5%) had ulceration, 10(25%) had dermatitis, 2(5%) had eczema, 4(10%) had lipodermatosclerosis, 1(2.5%) had thrombophlebitis and intradermal venules.

Table 7: Distribution of Complications

Complications	Total	Percentage
Hemorrhage	0	0
Thrombophlebitis	1	2.5
Intradermal venules	1	2.5
Deep vein thrombosis	0	0
Pigmentation	24	60
Dermatitis	10	25
Varicose eczema	2	5
Lipodermatosclerosis	4	10
Ulceration	11	27.5
Periostitis	0	0
Stiffness	0	0
Equinus deformity	0	0

Operation

Of the 36 limbs that underwent surgery 24 (60%) underwent saphenofemoral flush ligation with stripping of LSV and subfascial ligation of perforators, 8 (20%) underwent saphenofemoral flush ligation and stripping, 4 (10%) underwent saphenofemoral flush ligation with stripping of LSV and saphenopopliteal junction ligation, 1 (2.5%) underwent subfascial ligation of perforators, 1 (2.5%) underwent saphenopopliteal junction ligation with subfascial ligation of perforators, 2 (5%) limb underwent saphenopopliteal junction ligation.

Table 8: Treatment

Procedure Done	No. Of Patients- 50	Percentage
SFFL	8	20
SPJL	1	2.5
SFLP	1	2.5
SFFL+SFLP	24	60
SFFL+ SPJL	4	10
SPJL+SFLP	2	5

Table 9: Post-Operative Complications

Complications	No of patients	Percent
Hematoma	6	15
Neuritis	2	5
Infection	2	5

DISCUSSION

As per the literature the incidence of varicose veins in females 3 times when compared to males. In this study of 40 patients, only 6 patients were females (15%). Widmer in Switzerland recorded a ratio of 1:1. Callam et al in England and Leipnitz et al recorded a ratio of 1:2. The decreased occurrence of disease in females at our set up may be due to the fact that our middle class and lower class women are not much worried about the cosmetic appearance.

In our study age incidence was maximum in the group 41-50 which accounted for 30% of patients followed by 14 patients (35%) in the age group 21-30. This is also the observation in the study conducted by Aditya Kanwar et al. The graph shows the sex distribution of varicose veins in the study conducted between 1998 to 2008.

Malhotra et al (1972) in their study comprising 677 patients from both North and South India had an age range of 18- 65 years. In the West Wright et al in their study of 1338 patients in England had an age range of 20-75 years. In the study conducted by Aditya Kanwar et al, during the period from 1998 to 2008 shows similar age distribution. This may be because of productive age that they work in the field, which requires prolonged standing & majority of the patients in this age group are agriculturists. In our study most of the patients were agriculturists (60%) by occupation who admitted of having been exposed to prolonged hours of standing, about 10 hours per day. This may point towards the possibility of prolonged erect posture being the etiology for varicose veins.

Most commonly affected limb was left limb, (in 29pts 72.5 %), when compared to right (in 20 pts. 50%). Compared with study conducted by A.H.M. Dur, A.J.C. Mackaay et al, in which right and left limb accounted respectively for 48.55% and 51.45%. Both the limbs were involved in 9 patients (22.5 %).

Among the 36 limbs studied, commonest system involved was long saphenous and communicating system (22 limbs, 55%), next was long saphenous involvement alone (18, 45%). Left side was found to be involved more than the right side. In a similar study by T.A. Lees & D. Lambert (60 patients with skin changes), 39 (65%) had combined superficial and perforator incompetence, 17(28.33%) had isolated superficial incompetence. Delbe and Mocquet in their study had found varicosity of long saphenous vein in 98% and only 2% in short saphenous vein. Incompetent perforator was noted in 34 (85%) cases in our study.

Among the various symptoms with which the patients presented, pain was the commonest symptom seen in 36 limbs (90%) followed by disfigurement 24 limbs (60%), ulcer 11 limbs (27.5%) edema 10 limbs (25%). None of the patients had cramps. Of the various systems

involved, limbs with long saphenous and communicating system involvement had more symptoms than any other, followed by limbs with long saphenous and short saphenous involvement and long saphenous involvement alone. In a study conducted by T. Sakurai, P.C. Gupta, M. Matsushita, N. Nishikimi and Y. Nimura, it was found that of the 266 limbs examined, long saphenous and communicating system involvement was seen in 118(44%) and long saphenous involvement alone was seen in 56(21%). They showed that these were the commonest patterns involved. They also showed that limbs with long saphenous and short saphenous involvement or long saphenous and communicating system involvement were associated with severe venous disease. With regards to symptoms the findings were a bit different with other studies done by W.B. Campbell et al, with cosmetic symptoms being 90% and aching pain 57% because in our country patient come to hospital for some symptom rather than cosmetic appearance.

Among the various complications pigmentation was the commonest seen in 24 limbs (60%) followed by ulceration 11 limbs (27.5%), dermatitis 10 limbs (25%), eczema 2 limbs (5%), lipodermatosclerosis 4 limbs (10%) hemorrhage in no case.

Among the various modalities of treatment, 36 of 40 limbs were subjected to surgery, 4 were conserved. The recent modalities of surgery were not possible in our set up due to lack of availability of facilities and expertise. The commonest operation performed was saphenofemoral flush ligation with stripping of LSV and subfascial ligation of perforators in 26 limbs (52%), followed by saphenofemoral flush ligation with stripping of LSV 10 limbs (20%). Least common operation was saphenopopliteal junction ligation, subfascial ligation of perforators & both together (4%). Postoperative compression was followed routinely for all patients to prevent hematoma formation. All patients were advised to use elastic crepe bandage for 2 months after discharge from the hospital.

Among the postoperative complications hematoma, was the commonest (6 limbs) probably due to loose application of postoperative compression bandage & lack of compliance of the patient. 2 limbs had saphenous neuritis and 2 limbs had infection. Low incidence of neuritis could be because of good surgical technique as the veins were stripped to the knee. Low incidence of infection could be due to good antibiotic coverage coupled with sterile theatre technique.

The complications responded well to surgical treatment. Among 11 patients with varicose ulcer 4 needed grafting, rest healed without any intervention. There was no mortality.

CONCLUSION

40 patients of primary varicose veins of lower limbs were admitted to Govt Medical College & Hospital and study of these patients revealed-

1. Commonest age group affected is 21-50 years
2. Definite relationship exists between occupation involving prolonged standing and primary varicose veins.
3. The involvement of long saphenous and communicating system is commonest followed by long saphenous involvement alone.
4. Pain is the commonest symptom.
5. Patients with involvement of long saphenous and communicating system or long saphenous and short saphenous system had more symptoms than the others.
6. Commonest complication is pigmentation.
7. Complications of varicose veins responded well to operative treatment. Results of surgical treatment are good.
8. Mortality is nil

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