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RESEARCH ARTICLE

CLINICAL STUDY AND MANAGEMENT OF LOWER LIMB VARICOSE VEINS

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Abstract

Background: Varicose veins of the lower limb are the most common peripheral vascular disease. A clinical study and surgical management of varicose vein was conducted to study the age, sex and occupational distribution of varicose veins of lower limb. Evaluations of clinical features and surgical methods of treatments that were in practice in the management of varicose veins in terms of recurrence and symptoms improvement were alsostudied.

Methods: A prospective study was carried out between July 2013 to June 2015. During this period 50 cases of varicose veins of lower limbs were admitted to our hospital and were studied in detail. After thorough clinical examination and relevant investigation they are all subjected to surgical management.

Results: Out of 50 cases studied, 35 (50%) had long saphenous vein involvement, 6 (12%) had short saphenous vein involvement and in 5 (10%) cases both short and long saphenous system were involved. In addition to long saphenous vein involvement, incompetent perforators were present in 4 (8%) cases. Among them prominent veins and pain were the main complaints in 36 (72%) patients. Itching and pigmentation were present in 7(14%) patients. Ankle edema was present in 4(8%) patients. Pain and ulceration of lower leg were present in 3(6%) patients. After clinical assessment appropriate surgical procedures were followed for each of patients.

Conclusions: This study reveals that the disease is more prevalent during the active adult life in their 3rd and 4th decades and males were more affected. Definite relationship exists between the occupation and the incidence of varicose veins. The patients were in the occupation which required standing for long time had the higher chances of varicose vein. Severity of the symptoms is not proportional to the duration of varicose veins. The involvement of long saphenous vein is more common than the short saphenous vein. Since our study shows very low percentage of recurrence and symptoms related to varicose vein the surgical line of treatment is an ideal treatment for varicose vein. If cases are selected properly with good operative technique the complications are negligible.

INTRODUCTION :

Varicose veins are defined as saccular or cylindrical widened superficial veins, where the widening may be circumscribed or segmental. In general, the dilatation of the veins is associated with tortuosities.Varicosity of the lower limb is a common clinical entity with, age group of 20-40 being commonly affected. The involvement of long saphenous vein is the commonest. Clinical examination has a high predictive accuracy. The use of color Doppler is a valuable supplement to clinical examination for effective treatment of varicose veins.

Primary varicose veins:

They occur as result of congenital weakness in the vessel wall. It can also be due to muscular weakness or due to congenital absence of valves. Primary varicosity can also be familial. These factors, in addition to prolonged standing, help in the development of the varicose veins. Varicosity is the penalty for verticality against gravity.

Klippel-Trenaunay syndrome is a congenital venous abnormality wherein superficial and deep veins do not have any valves. It is also called as "valveless syndrome".

Secondary varicose veins:

Women are more prone for varicose veins because of the following reasons:

1. Pregnancy and pelvic tumours.

2. Pills (oral contraceptive pills) alter the viscosity of blood.

3. Progesterone dilates vessel wall.

4. Congenital arterio-venous fistula increases blood flow and increases venous pressure.

5. Deep vein thrombosis can result in destruction of valves resulting in varicose veins.

Spider veins are similar to varicose veins, but they are smaller. They are often red or blue and are closer to the surface of the skin than varicose veins. They can look like tree branches and spider webs with their short jagged lines. Spider veins can be found on the legs and face. They can cover either a very small or very large area of skin. Chronic venous insufficiency may result in feeling of heaviness, tendency for swelling, leg pain, and leg ulcer.

Aims and Objectives :

This prospective clinical study of surgical management of varicose vein was conducted.

1. To study the age, sex and occupational distribution of varicose veins of lower limb.
2. Evaluations of clinical features and surgical methods of treatments that were in practice in the management of varicose veins in terms of recurrence and symptoms improvement were also studied.

Methodology:

Source of Data:

This was a prospective study involving 50 patients who presented with symptoms of primary varicose veins of lower limb in the Department of General surgery ,RIMS, KADAPA,during July2013 to June 2015.

All the patients presenting with varicose veins of lower limb, which met the inclusion and exclusion criteria were selected for this study.

Inclusion criteria :

The inclusion criteria, being, patients presenting with symptomatic varicose veins, those patients presenting with complications of the disease such as pigmentation, eczema, ulceration, superficial thrombophlebitis, etc. and patients with cosmetic concern. The most specific criteria was patients with primary varicose veins of lower limb.

Exclusion Criteria :

The patients who were treated on an outpatient basis were not included in the study. Patients with secondary varicose veins due to deep vein thrombosis and other causes of venous obstruction

Clinical examination :

After obtaining an adequate history, the patient was examined in standing position with good illumination, exposing both the lower limbs completely. The following tests were performed

- Brodie trendelunburg I and II
- Modified Parthe's test
- Multiple tourniquet test
- Schwartz test
- Morrissey's cough impulse test
- Fegan's test.
- Abdominal and rectal examination

The results of the tests were documented according to the clinical proforma.

Color Doppler ultrasonography:

The patient was examined in standing position along the whole length of the long saphenous and short saphenous systems.

The following signs were specifically looked for:

- Saphenofemoral junction incompetence
- Saphenopopliteal junction incompetence
- Perforator incompetence
- Deep venous system
- Presence of abnormal or unnamed veins or perforators.
- The sites of incompetence were marked by indelible skin pencil.

Intraoperative findings:

The following operative procedure were undertaken –

- High, flush ligation of saphenofemoral junction with or without stripping of long saphenous vein.
- High, flush ligation of saphenopopliteal junction without stripping of short saphenous vein.
- Incompetent perforator vein ligation.

The intra-operative results were documented in the proforma.

Follow Up :

All patients were discharged 10 days after surgery with elastic bandage. They were all followed up for a minimum of 6 months after they were discharged for:

- Symptomatic relief.
- Recurrence of varicosity.
- Healing of varicose ulcers.

Results :

A total of 50 patients with primary varicose veins admitted, investigated, operated and followed-up are studied.

Results are as follows:

Table -1 Age Distribution :

AGE	PATIENTS	%
10-20	1	2
20-30	10	20
30-40	20	40
40-50	10	26
50-60	6	12
60-70	2	4

The youngest in the study was 20 years old and the eldest was 65 years.

Table -2 Sex Distribution:

Only 30% (15) of the total patients in this study were females as compared to males who made 70% (35) of total cases.

SEX	NO	%
MALE	36	72
FEMALE	14	28

Table-3 Occupation :

OCCUPATION	PATIENTS	%
Bus conductor	5	10
Traffic Police	6	12
Farmer	12	24
House wife	9	18
Hotel vendor	3	6
Hotel cook	2	4
Coolie	8	16
Bakery supplier	2	4
Costruction worker	3	6

Table -4 Presentation of symptoms :

Symptom	No. of cases	%
Prominent veins and pain	36	72
Ankle edema	07	14
Itching and pigmentation	04	08
Pain and ulceration	03	06

Table-5 Venous System Involvement :

System Involved	Limbs	%
Long saphenous	35	70
Long saphenous + incompetent perforators	04	08
Short saphenous	06	12
Both long and short saphenous veins involvement	05	10

Table-6 Surgical Procedures Performed :

Sl. No	Surgery	Limbs	%
1	SFJ flush ligation (SFFL) with stripping of LSV	10	20
2	SFJ flush ligation with stripping of LSV with incompetent perforator ligation	28	56
3	SFJ, SPJ ligation with stripping of LSV with incompetent perforator ligation	09	18
4	SPJ ligation without stripping of SSV	03	06

Table-7 Complications :

Complications	NO.of cases	%
Haematoma	3	6
Seroma	2	4
Wound infection	2	4
Residual varicosity	1	2
Limb oedema	1	2
Parasthesia	3	6
Delayed healing	2	4

Discussion :

Varicose veins of the lower limb are the most common peripheral vascular disease. The term varicose is derived from Latin word 'varicose', which means dilated. Varicose vein by definition means dilated, elongated and tortuous vein. In 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 bring the patient to the doctor. The age distributions of varicose vein shows majority of patients are between the age of 20 to 40 years.

Among 50 patients studied, all patients exhibit a definite history of standing for long duration. In that 12 were farmers, 8 were cooli, 6 were traffic police, 5 were bus conductors and related workers and 9 were house wifes who required standing for long duration during their work. This suggests occupation has a definite role as a causative or a contributing factor. The occurrence of varicose vein in members of the same family suggests that the hereditary factors may play a role. In our series among 50 patients, only 2 gave the family history of the same problem. So the incidence of family history of varicose vein in this study were very low (4%).

The most common symptom was dilated veins with dull aching pain which occurred alone or in combination of limb edema, pigmentation or ulceration. It is evident from this series that the cosmetic factor is not the thing that prompts the Indian patient to seek treatment as do those in the west.. Higher incidence of varicosity is in conformity with some authors who think that the varicose veins are more common in the left limb probably due to the venous drainage of the left leg follows a more tortuous course through the pelvis, with left common iliac vein traversed by the right common iliac artery and also due to presence of loaded sigmoid colon which exerts constant pressure on the vein in the pelvic cavity.

The present study revealed long saphenous vein involvement that was 29 patients (58%) with or without short saphenous system and perforators incompetence was most common. All patients in our study underwent Doppler ultrasound of both the legs for confirmation of the diagnosis and to rule out presence of deep vein thrombosis which we felt must before proceeding with surgical management.

The total duration of hospital stay was 10 days in our study. In our series, no cases gave definite history of deep vein thrombosis and also no case had superficial thrombophlebitis. This finding was in conformity with some authors that the superficial thrombophlebitis as a cause of varicose veins is very rare and most probably phlebitic changes occur in the veins which are already varicosed. The complications of varicose vein surgery are as such very rare.

In our study, we noticed haematoma formation in 3 cases, which resolved by conservative treatment. 2 patients had postoperative wound infection, which was treated with antibiotics. There was no incidence of deep vein thrombosis postoperatively. Out of 50 cases, 3 patients complained of sensory impairment in cutaneous nerve distribution of long saphenous nerve. The low incidence of sensory impairment in the present series may be because of better surgical technique and avoiding stripping of vein below midcalf where the nerve and vein travel very closely. In addition to surgery, sclerotherapy, foam therapy, laser endoluminal ablation and radiofrequency endoluminal ablation are the other available treatments for varicose vein. In one meta-analysis of treatment of varicose vein mentioned these treatments appear to be safe with rare side effects. Surgery is the only treatment with long term effectiveness .

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 conclusion. Varicosity of the lower limb is a fairly 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.

Commonest age group of varicose vein of lower limb was 20 to 40 years. Definite relationships exist between the occupation and the incidence of varicose veins. The patients were in the occupation which required standing for long time had the higher of varicose vein. Severity of the symptoms is not proportional to the duration of varicose veins. The involvement of long saphenous vein is more common than the short saphenous vein. Since our study shows very low percentage of recurrence and symptoms related to varicose vein the surgical line of treatment is an ideal treatment for varicose vein. For incompetent perforators, sub-fascial ligation appears to be a better method of treatment than extra fascial ligation. If cases are selected properly with good operative technique enable the patient to lead almost normal life after surgery and the complications are negligible.

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