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Original Research Article

Clinical Study and Management of Varicose Veins of Lower Limbs at DMCH, Laheriasarai, Bihar

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Abstract:

Background: Varicose veins are described as dilated, convoluted, subcutaneous veins that are less than 3 mm in diameter and clearly exhibit reflux when measured in the upright posture. Although varicose veins have been around since the beginning of time, current emphasis has been drawn to improvements in diagnosis and new therapeutic strategies. The current study aimed to investigate the clinical profile, risk factors and their correlation, various surgical techniques used, and consequences related to varicose veins.

Methods: The current prospective study was carried out from January 2021 to December 2021 at the upgraded surgery department of the Darbhanga Medical College and Hospital in Laheriasarai, Bihar. Clinical examinations were conducted on cases that met the inclusion criteria, and duplex ultrasonography colour Doppler was used to diagnose varicose veins and record the location of incompetence. All cases underwent surgery and received six months of follow-up care. Microsoft Excel was used to tabulate the results and look for any necessary corrections.

Results: 40 cases, 66.25% males and 33.75% females, a mean age of 40.24 years, and 40% of the cases were in the group of people aged 41 to 50. Right limb varices were present in 60% of patients, and lengthy saphenous veins were implicated in 52.5% of cases. 30% of instances below the knee exhibited perforator incompetence, while 85% had dilated veins. Saphenofemoral flush ligation with lengthy saphenous vein stripping occurs in 41.25% of cases. The most frequent surgical consequence was wound infection.

Conclusions: Even though conservative management eases the symptoms, decisive management is always necessary, therefore operational management should be the primary line of treatment.

Keywords: Varicose veins, Colour Doppler, Long saphenous vein, Wound infection.

Introduction

Varicose veins refer to any dilated, tortous, elongated vein of any caliber. The term varicose veins is, in the common parlance, a term that encompasses a spectrum of venous dilation that ranges from minor telangiectasia to severe dilated veins. Telangiectasias are intra dermal varicosities that are small and tend to be cosmetically unappealing but not symptomatic. Reticular veins are subcutaneous dilated veins that enter the tributaries of the main axial or trunk veins. Varicose veins of lower limbs

are the penalty, man has to pay for his erect posture. They are associated with high morbidity even though mortality may not be significant. Twenty percent of the population suffer from varicose veins. High post-operative recurrence rates and technical challenges demand extensive clinical evaluation, exhaustive inquiry, and successful treatment. Hippocrates noted a connection between leg ulcers and varicose veins. He was the first to recommend compression bandages as a treatment for leg ulcers. Leg ulcers were related to hypoxia by Homans. It was believed that a fibrin cuff would prevent oxygen from transferring. The first person to notice the entrapment of white cells in a dependent limb was Professor Michel. The White Cell Trapping in Venous Ulcers Hypothesis was put forth by Coleridge Smith, Thomas Dormandy, and Scurr.

Material and Methods

From January 2021 to December 2021, this prospective study was conducted at the Darbhanga Medical College and Hospital, Upgraded Department of Surgery in Laheriasarai, Bihar. The study's subjects were people who visited our hospital with varicose veins.

We used 40 patients as our sample size. The study covered all varicose vein patients who visited our hospital, regardless of age. The study excluded patients who had a history of acute or chronic deep vein thrombosis. A Performa was created, and in the outpatient department, individuals with varicose veins underwent complete physical examinations and had detailed medical histories taken.

All patients had Doppler ultrasound of both lower limbs in order to rule out deep vein thrombosis and appropriate laboratory testing was done to confirm the diagnosis. Before including a patient in a study, their written informed consent has been obtained after they have been told of the procedure. Prior to the surgical surgery, long-term varicose vein complications such edema, ulceration, and dermatitis were treated.

Results

A total of 40 cases that met the inclusion criteria and gave their consent for the investigation were included in the current prospective study. There was a male predominance with 27 cases (67.50%) and a female predominance with 13 instances (32.50%). According to the distribution of cases by age, 37.5% (15 out of 40) were between 41 and 50, 27.50% (11 out of 40) were between 51 and 60, 12.50% (5 out of 40) were above 60, 12.5% (5 out of 40) were between 31 and 40, and 10.0% (4 out of 40) were between 21 and 30. None of the observed patients were under 20 years old (Table 1).

Table 1: Age distribution of study cases

Age distribution (years)	Number of cases	Percentage
10-20	0	0.0%
21-30	4	10.0%
31-40	5	12.5%
41-50	15	37.5%
51-60	11	27.5%
>60	5	12.5%

The age range of the study's cases ranged from 24 to 74 years. In our investigation, varicosities were found to be bilateral in 15.0% of instances, on the right limb in 57.5% of cases, and on the left in 27.5% of cases. In our cases, 42.5% of cases had a long-standing occupation and 32.5% of cases had a clear family history of varicose veins. 45.0% of the cases involved alcoholism, and 47.5% involved smoking. Given that it runs the entire length of the lower leg, the lengthy saphenous vein

carries the full weight of the entire posture. 42.5% of instances involved the long saphenous vein, 30% the short saphenous vein, and 17.5% both (Table 2).

Table 2: Risk and associated factors of study cases

Factors	Number of cases	Percentage
Side effected		
Right	23	57.5%
Left	11	27.5%
Bilateral	6	15.0%
Venous system		
Long saphenous	21	42.5%
Short saphenous	12	30.0%
Both	7	17.5%
Risk factors		
Family history	13	32.5%
Agricultural workers	4	10.0%
Sedentary activity	21	42.5%
Smoking	19	47.5%
Alcoholism	18	45.0%

Pain predominated in 47.5% of patients, followed by heaviness in 45.0% of cases, as the main symptom. In 87.5% of the cases, dilated veins, skin abnormalities such pigmentation and dermatitis, edoema of the afflicted limb, and ulcerations were all seen (Table 3).

Table 3: Signs and symptoms of study cases

Sign and Symptoms	Number of cases	Percentage
Pain	19	47.5%
Dilated veins	35	87.5%
Heaviness	18	45.0%
Edema of limb	12	30.0%
Ulcerations	11	27.5%
Skin changes (pigmentation etc.)	18	45.0%

In the current study, the long saphenous system was implicated in 50.0% of cases, the long saphenous system and incompetent perforators in 22.5% of cases, the short saphenous system in 12.5% of cases, and both in 15.0% of cases. Sites of perforator incompetence were found below the knee in 30% of patients, above the ankle in 27.5 percent, in the thigh in 20 percent, and unidentified in 10.0% of cases (Table 4).

Table 4: Distribution of venous system and site of perforator incompetence among the cases

Variables	Number of cases	Percentage
Venous system involved		
Long saphenous system	20	50.0%
Long saphenous + incompetent perforators	9	22.5%
Short saphenous system	5	12.5%
Both	6	15.0%
Perforator incompetence		
Thigh	8	20.0%
Below knee	12	30.0%
Above ankle	11	27.5%
Unnamed	4	10.0%

Table 5: Surgical procedure performed among the cases

Surgical Procedures	Number of cases	Percentage
SSFL + stripping	14	35.0%
SSFL + Ligation + Multiple avulsion	3	7.5%
SSFL + Stripping + Subfascial ligation	8	20.0%
SPL	4	10.0%
SPL + Stripping	1	2.5%
Multiple stab avulsion	3	7.5%

Table 6: Complications of surgery among the cases in the study

Complications	Number of cases	Percentage
Wound Infection	6	15.0%
Hematoma	3	7.5%
Saphenous neuritis	1	2.5%
Wound dehiscence	2	5.0%

All cases in the current study were surgically treated. 35.0% of cases involved saphenofemoral flush ligation (SSFL) and stripping of the long saphenous vein, 20.0% involved SSFL combined with stripping and subfascial ligation, 7.5% involved saphenopopliteal ligation alone, and 2.5% involved SSFL alone. Multiple stab avulsions were performed in 7.5% of patients (Table 5). Six wound infections occurred during our investigation, along with three wound dehiscences, one episode of saphenous neuritis, and two other moderate sequelae (Table 6).

Discussion

One of the common clinical conditions that surgeons deal with on a daily basis is a varicose vein. This silent illness starts early in childhood and progresses subtly throughout the course of a person's lifetime. Due to the development of venous hypertension, this illness is not connected with mortality but rather severe morbidity and related consequences. In our study, there were 27 cases (67.50%) of males, which is similar to the findings of many Indian studies. However, studies carried out in western nations show a female predominance, which is likely because women in India are not exposed to high risk jobs that require prolonged standing and physical stress because of cultural and socioeconomic factors.[1]

The majority of cases (37.5%) in the current study were between the ages of 41 and 50, with a mean age of 43.40 years, which is comparable to the results of studies by McGuckin et al. and Mishra et al. from India.[2,3] Dilated veins were the most prevalent symptom in our investigation, as reported by the majority of studies, in 87.5% of cases, compared to Rudofsky et al.'s 90% and Shankar et al.'s 94% in their studies.[4,5]

In our study, 32.5% of the cases had a clear family history, which is similar to the findings of Staniszewska et al., who conducted a study among the European population and reported a significant association between varicose veins and family history. The observation of varicose veins in multiple members of the same family suggests a clear hereditary factor as the cause of varicose veins.[6]

In the current study, skin changes like lipodermatosclerosis, pigmentations, and eczema were found in 45.0% of cases, which is quite higher when compared to studies in the western population. This could be because Indians place less value on appearance than Westerners do, and because minor conditions like swelling without pain are often ignored. According

to Agarwal's study, which is comparable to the current study, 52% of cases in his study had skin abnormalities.[7] In the study, the right limb was implicated in 57.5% of cases, the left in 27.5 percent, and both limbs in 15% of instances. Numerous investigations indicated a greater involvement of the left limb, which is not the case in the current study. The explanation for left limb involvement may be related to the left common iliac vein crossing across the left iliac artery, compression of the left iliac veins by the left loaded colon, and the longer course taken by the left iliac veins.

The occurrence of varicose veins and drunkenness were not significantly associated in the current study. The results of our investigation were equivalent to those of Carpentier et al.'s publications.[8]

In the current study, 42.5% of instances involved the long saphenous vein, 30.0% the short saphenous vein, and 17.5% both. The results of our study were comparable to those of several studies conducted both internationally and within the context of India. 60 percent of patients in a study by Vashist et al. had involvement of the great saphenous vein (GSV), 17 percent had involvement of the small saphenous vein (SSV), and 23 percent had involvement of both the GSV and SSV.[9] Our study's results were comparable to those of Marrocco et al. in that 30% of cases in which perforator incompetence was recorded were below the knee, 27.5% above the ankle, 20.0% in the thigh region, and 10.0% were nameless.[10]

The most frequent postoperative complication seen in all instances treated surgically was wound infection. In 35.0% of the instances, SSFL with lengthy saphenous vein stripping was done.

Conclusion

Males are more likely to have varicose veins than females in the current study, with a peak age range of 30 to 50 years. Visible dilated veins throughout the lower limb are the most typical presenting sign, however more than half of the patients also have one or more problems.

Great saphenous vein system is the most frequently involved venous system, and below knee perforators are the most frequently encountered perforators. The most typical operation was SSFL with lengthy saphenous stripping. After a year of follow-up, there were no recurrences in any of the instances. Even though conservative management eases the symptoms, decisive management is always necessary, therefore operational management should be the primary line of treatment.

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