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Research Article

Evaluation of surgical methods and outcome of the treatment for varicose veins

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ABSTRACT

Background: Varicose veins of lower extremities are the most common peripheral vascular disease and it calls for treatment due to the morbidity and loss of working hours it causes. In advocating surgery the need to establish the need for surgery in the patient cannot be over emphasized. In the present study, the various surgical methods available and the outcome of the treatment for varicose veins in patients were evaluated.
Methods: The study was conducted in teaching & general hospital and government general hospital, attached to medical college. The various available surgical procedures were used in the present study after the informed consent from all the patients.
Results: Trendelenburg's operation was done in 4.76% of cases, it was coupled with stripping of long saphenous and subfascial ligation of perforators 33.33% cases. In 9.52% cases with competent saphenofemoral junction, only subfascial ligation was carried out by small transverse incisions. Postoperative wound infection was seen in 20.59% of cases.
Conclusion: Our study revealed that the Trendelenburg's operation is carried out in all the patients with saphenofemoral incompetence. Stripping of the long saphenous vein from above downwards is safer for the saphenous nerve than stripping from below upwards. Stripping of long saphenous vein till the below knee level is an adequate procedure. This can be combined with the multiple ligation or excision of varicose tributaries.

Keywords: Varicose veins, Prevalence, Mode of presentation, Saphenous nerve

INTRODUCTION

Varicosity of vein is said to exist when the vein is dilated, lengthened and tortuous.[1] According to Gunnar Baver, "It has been estimated that there are ten times as many sufferers from chronic venous disease of the lower limbs as from arterial disease of the same". In western population the disease is highly prevalent and has attained national and industrial importance. This is not so in and incidence is apparently low in India.[2]

The incidence of varicose veins in India seems to be far less compared to western population because most of the patients do not come to the hospital unless complications such as pain, edema and ulceration, etc. occur. Etiology of this disease are varied and some cause rapid progression of the disease and some slow deterioration. Conflicting views are present regarding the etiology of varicose veins and its prevalence in the western female population. Wedell JM states that the chief brunt is borne by females and male to female ratio is 1:3.5 to 5 or even

higher in the westerners, but is seen infrequently in Indian and African women.[3]

In the developed countries, where attire reveals more than it's conceals, patients turn up in sizeable numbers for treatment for cosmetic reasons, while in our country, patients are hospitalized more for the complications of the disease than for the disease itself. Varicose veins of lower extremities are the most common peripheral vascular disease and it calls for treatment due to the morbidity and loss of working hours it causes.[4-7]

Surgical treatment in some form or the other has been in use since the days of Hippocrates. These techniques have undergone changes and modifications as the knowledge of the disease grew. In advocating surgery the need to establish the need for surgery in the patient cannot be over emphasized.[8,9] It has to be borne in mind that deep vein thrombosis developing in a patient, whose long saphenous vein has been stripped, will jeopardize the limb as the alternate channel for return of blood is absent.[10] The other factors to be kept in mind are that the long saphenous vein may be needed for important vascular graft surgery at a future date. In the present study, the various surgical methods available and the outcome of the treatment for varicose veins in patients were evaluated.

METHODS

The present clinical study was conducted on patients who were admitted in the teaching hospital. The study was conducted after the institutional ethical committee approval and written informed consent from all the patients. The clinical material for this study consists of patients, who came to surgical OPD of teaching & general hospital with varicosities of the lower limbs. This study included not only the patients willing for surgery but also patients who were managed conservatively to view the patterns of presentation of varicosities. A proper history was taken and a thorough clinical examination was done and recorded. Patients over seventy years of age and those suffering from cardiopathy, bronchopneumopathy, nephropathy, metabolic disease and heavy obesity were managed conservatively as their general condition did not permit them to undergo surgery.

The various surgical procedures used were in the present study were Trendelenburg's operation only, Trendelenburg's operation with stripping of LSV, Trendelenburg's operation + stripping of LSV + subfascial ligation, Trendelenburg's operation + subfascial ligation (with excision of LSV below knee), subfascial ligation only.

Preoperative preparation

All the patients were informed beforehand regarding the type of surgical procedure and the surgical and anesthetic complications. Written consent was taken. Whole of the limb up to umbilicus and perineal region was shaved the previous night and the parts were cleaned with soap and water. Varicosities and blow outs were marked with water proof ink and sterile dressings were applied.

Anesthesia

Spinal anesthesia was used in most of the patients. The anesthetist chose selective spinal anesthesia or epidural on technical basis or on the basis of patient's clinical situation. Local anesthesia was used when the surgeon had to treat both unilateral and bilateral multiple varices on the thigh and/or leg. General anesthesia was limited to patients suffering from cardiopneumopathies or from a minor hepatic or renal insufficiency.

Surgical procedure

Operative treatment was undertaken in fit, willing and uncomplicated patients. Following operations were done whenever indicated either singly or in combination according to the need. It includes, Trendelenburg's operation, saphenopopliteal ligation, extrafascial ligation of incompetent perforators, subfascial ligation of incompetent perforators and stripping of long saphenous vein or short saphenous vein.

Sclerotherapy was not done in our series. After the surgical procedure, an elastocrepe bandage was applied from toes to groin.

Postoperative care

The patients were put in Trendelenburg's position with foot end elevation. Broad spectrum antibiotics and adequate analgesics were given. Elastocrepe bandage was removed after 48 hours and reapplied. Patient was encouraged to walk about with elastocrepe bandage in situ 2 days after the surgery. Sutures were removed 8-10th postoperative day.

RESULTS

Surgical modality was selected on the basis of the age, severity and occupation of the patient. All the patients, except those who had complaints of only pain and/or swelling of the limb were subjected to conservative therapy prior to surgery. This involved elastocrepe bandaging from toes to the groin, elevation of the limb above the level of heart, antibiotics, dressings and exercises. The duration of treatment varied from patient to patient and averaged 12 days. Conservative therapy was continued till surgery was feasible.

Trendelenburg's operation was done in all cases involving long saphenous vein. In 2 cases (4.76%), Trendelenburg's operation alone was done. In 1 case (2.38%) Trendelenburg's operation combined with stripping of LSV from above downwards was done (Table 1).

In 14 cases (33.33%), Trendelenburg's operation with stripping of long saphenous and subfascial ligation of perforators was done. In 10 of the cases, Trendelenburg's operation combined with subfascial ligation of perforating veins and excision of long saphenous vein to below knee level was done. In cases with competent saphenofemoral junction, only subfascial ligation was carried out by small transverse incisions in 4 cases (9.52%), (Table 1).

Table 1: Various surgical modalities selected for the management of varicosities in patients with lower limb varicosities.

Procedure	No. of cases	Percentage
Trendelenburgs only	2	4.76
Trendelenburgs + stripping of LSV	1	2.38
Trendelenburgs operation + stripping of LSV + subfascial ligation	14	33.33
Trendelenburgs + subfascial ligation (with excision of LSV below knee)	10	23.81
Subfascial ligation only	4	9.52
Extrafascial ligation only	-	-
Saphenopopliteal flush ligation + subfascial ligation	1	2.38
Trendelenburgs + stripping of LSV + saphenopoplitealflush ligation + stripping of SSV (with or without subfascial ligation)	2	4.76
Conservative management	8	19.06
Total	42	100.00

Out of the 42 cases, 8 cases were managed conservatively because the general condition of the patient did not permit them to undergo surgery (Table 2).

Table 2: Number of cases managed conservatively in patients with lower limb varicosities.

Reasons	No. of cases
Pulmonary tuberculosis	4
IHD	2
HIV+	1
Malignancy	1
Total	8

Out of the 34 cases operated for varicosities of lower limbs, 7 cases (20.59%) had postoperative wound infection, especially in the groin due to its close proximity to the perineum. 4 cases developed saphenous neuritis, all of which recovered in 20-25 days. Serous collection in the groin wound was observed in 4 cases, which was let out and culture yielded no growth. One patient presented with residual varicosity for which he was advised further therapy, but refused (Table 3).

Table 3: Complications due to surgery in patients with lower limb varicosities.

Complications	No. of cases	Percentage
None	18	52.94
Post-operative wound infection	7	20.59
Saphenous neuritis	4	11.76
Lymphomatoma	4	11.76
Residual varicosities	1	2.95
Total	34	100.00

DISCUSSION

Several new surgical techniques for management of varicose veins were introduced. VNUS closure involves the intraluminal destruction of the long and short saphenous veins using an ablation catheter. The technique involves inserting the catheter under ultrasound control to the saphenofemoral junction and then withdrawing the catheter slowly under ultrasound control to destroy the veins. Complications include deep vein thrombosis recurrence of varices and damage to the overlying skin. One of the advantages claimed for this technique is a reduced incidence of thigh hematoma and pain.[11]

Surgical modality was selected on the basis of the age, severity and occupation of the patient. All the patients except those who had complaints of only pain and/or swelling were subjected to conservative therapy before surgery. The duration of treatment varied from patient to patient and averaged 12 days. Conservative therapy was continued till surgery was feasible.

In the management of perforator incompetency, the treatment modality used was the subfascial ligation of Linton. Sclerosant therapy was not used in our series because of paucity and non-availability of sclerosants. Trendelenburg's operation was done in all cases involving long saphenous vein. In 2 cases (4.76%), Trendelenburg's operation alone was done. In 1 case (2.38%) Trendelenburg's operation combined with stripping of LSV from above downwards was done.

In 14 cases (33.33%), Trendelenburg's operaton with stripping of long saphenous and subfascial ligation of perforators was done. In 10 of the cases, Trendelenburg's operation combined with subfascial ligation of perforating veins and excision of long saphenous vein to below knee level was done. In cases with competent saphenofemoral junction, only subfascial ligation was carried out by small transverse incisions in 4 cases (9.52%).

In the cases with varicosities of short saphenous venous system, saphenopopliteal flush ligation with subfascial ligation was done in 1 case. In 2 cases involving both LSV and SSV, trendelenburgs operation combined with stripping of LSV, saphenopopliteal flush ligation and

stripping of SSV was done. Stripping was usually done from above downwards in one series. According to W. Grunjobust injury to saphenous nerve is more likely during stripping from below upwards as it runs very close to long saphenous vein near the ankle,[12] J. J. Hobbs has suggested stripping to only below knee level.[13]

The patients were put in Trendelenburg's position with foot end elevation. Broad spectrum antibiotics and adequate analgesics were given. Elastocrepe bandage was removed and reapplied after 48 hours.

Patient was encouraged to walk about the elastocrepe bandage in situ 48-72 hours after the surgery. Sutures were removed 8-10th postoperative day.

Out of the 34 cases operated for varicosities of lower limb, 7 cases (20.59%) had postoperative wound infection especially in the groin due to its close proximity to the perineum. 4 cases (11.76%) developed saphenous neuritis, fortunately all of which recovered in 20-25 days.

Serous collection in the groin would was observed in 4 cases, which was let out and culture yielded no growth. One patient had residual varicosity for which he was advised therapy but the patient refused.

CONCLUSION

Trendelenburg's operation is carried out in all the patients with saphenofemoral incompetence. Stripping of the long saphenous vein from above downwards is safer for the saphenous nerve than stripping from below upwards. Stripping of long saphenous vein till the below knee level is an adequate procedure. This can be combined with the multiple ligation or excision of varicose tributaries.

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