

# Study of Surgical Management Varicose Veins in a Tertiary Care Institution

Vamshi Krishna Gorle<sup>1</sup>, G Sambasiva Rao<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of General Surgery, Mamata Medical College, Khammam, Telangana, India, <sup>2</sup>Associate Professor, Department of General Surgery, Mamata Medical College, Khammam, Telangana, India

## Abstract

A total of 98 patients of both sexes aged between 30 and 65 years having varicose veins were studied with the involvement of 49 (50%) left leg, 41 (41.8%) right leg, and 8 (8.16%) both limbs were included in the study. The clinical manifestations were 27 (27.5%) had pain, 25 (25.5%) had dilatation of veins, 22 (22.4%) had ulceration, 8 (8.16%) had edema, 5 (5.10%) had itching and pigmentation, 6 (6.12%) had cramps, and 5 (5.10%) had heaviness legs. The occupation of the patients was as follows: 19 (19.3%) were farmers, 17 (17.3%) were shopkeepers, 21 (21.4%) were hotel/bar waiters (attenders), 14 (14.2%) were bus conductor, 16 (16.3%) were mason, and 11 (11.2%) were traffic police. The types of the involvement of venous system were 49 (50%) long saphenous venous system, 33 (33.6%) long saphenous and perforators, 9 (9.18%) had short saphenous system, and 7 (7.14%) had both long and short saphenous. The surgical procedures were 45 (45.9%) saphenofemoral flush ligation and ligation of constant tributaries, 33 (33.6%) ligation of perforator veins in addition to flush ligation, 6 (6.12%) ligation of saphenopopliteal flush ligation, 4 (4.08%) saphenofemoral and saphenopopliteal flush ligation with stripping of long and short saphenous vein, 8 (8.16%) flush ligation of saphenopopliteal with stripping of short saphenous, and 2 (2.04%) flush ligation of saphenopopliteal junction along with ligation of subfascial perforators.

**Key words:** Flush ligation, Long saphenous, Perforators, Vein stripping, Vein

## INTRODUCTION

Varicose veins are the disadvantages of erect postures such as hemorrhoids and hernia, sinusitis.<sup>[1]</sup> Due to antigravity, hence, it is rightly said “varicosity is the penalty against gravity.” It is observed mainly in the persons whose occupation is to stand persistently against gravity.<sup>[2]</sup> Most of the patients try to manage the symptoms by wearing compression stockings; these special stockings are meant to help the veins transport blood by applying pressure on them.<sup>[3]</sup> If wearing compression stockings do not relieve the symptoms enough, surgical procedure may be considered. Varicose veins can be removed or closed off using number of different techniques. This will not harm the blood supply in the legs because blood will redirect into other healthy veins. Surgery can be done on both superficial and deep veins.

In varicose vein surgery, the varicose veins are removed to relieve the symptoms such as pain and ulceration of legs. Phlebectomy technique is mainly used for smaller varicose veins and is time consuming; hence, vein stripping was carried out in the varicose patients of different occupation/profession to avoid significant mortality including spontaneous bleeding, ulceration, dermatitis, superficial thrombophlebitis, ankle edema, and lipodermatosclerosis.<sup>[4]</sup>

## MATERIALS AND METHODS

A total of 98 patients of both sexes aged between 30 and 65 years having varicose veins attending the Surgery Department, Mamata Medical College Hospital, Khammam - 507002, Telangana, were selected for study. Acute or deep venous thrombosis and patients having neurological cardiovascular complication were excluded from the study.

The duration of the study was about 3 years (November 2015–October 2018).

All the patients belonged to middle socioeconomic status. Routine blood examination, Doppler ultrasound

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**Corresponding Author:** Dr. Sambasiva Rao G, Associate Professor of Surgery, Mamata General and Super Speciality Hospital, Khammam - 507 002, Telangana, India. Phone no: +91-9440913135, E-mail -gorantiasambasivarao@gmail.com

of both lower limbs was done to confirm the varicose veins and to rule out deep venous thrombosis and the associated complications such as edema, ulceration, itching and pigmentation, pain, and cramps were treated preoperatively.

The technique or method to approach of veins was vein stripping - two incisions (cuts) were made, one at the top of the leg just below the groin and one just below the knee joint or at the ankle. The vein was then tied or clamped off at the incision using techniques called vein ligation. A long wire/stripper is passed through the lower incision up through the vein, and at the lower end, a button-like cap was attached to the wire. This allows the entire vein to be pulled out through the incision near the groin. The procedures done include -saphenofemoral flush ligation and ligation of anatomical constant tributaries at their termination along with stripping of long saphenous vein 45 (45.9%). In addition to above-mentioned procedure along with stripping of long saphenous vein, those having perforators were identified subfascially and ligated 33 (33.6%). Saphenofemoral and saphenopopliteal flush ligation with stripping of both long and short saphenous vein 6 (6.12%). The saphenofemoral, saphenopopliteal flush ligation with stripping of long and short saphenous vein and sub-fascial ligation and excision of incompetent perforators 4 (4.08%). Saphenopopliteal flush ligation with stripping of short saphenous vein was done after ligating the tributaries 8 (8.16%) and saphenopopliteal flush ligation with subfascial ligation of perforators 2 (2.04%).

Post-operative elastocrepe bandage was applied to all cases to prevent hematoma formation after stripping the veins and advised to continue it for 2 more months after they were discharged from the hospital. The ratio of male and female was 3:1.

## OBSERVATION AND RESULTS

Table 1 Involvement of lower limbs - 49 (50%) left leg, 41(41.8%) right leg, 8 (8.16%) bilateral (both legs).

In Table 2, profession/occupation of varicose vein patients - 19 (19.3%) were farmers, 17 (17.3%) shopkeepers, 21 (21.4%) were hotel/bar waiters, 14 (14.2%) were bus conductors, 16 (16.3%) were mason, and 11 (11.2%) were traffic police.

In Table 3, clinical manifestation of varicose patients - 27 (27.5%) had pain, 25 (25.5%) had dilatations of vein, 22 (22.4%) ulcers, 8 (8.16%) had edema, 5 (5.10%) had itching and pigmentation, 6 (6.12%) had cramps, and 5 (5.10%) had heaviness of legs.

In Table 4, types of veins involved in varicosity - 49 (50%) were long saphenous venous system, 33 (33.6%) were

**Table 1: Involvement of limbs**

Legs involved	No of patients - 98	
	n (%)	
Left leg	49 (50)	
Right leg	41 (41.8)	
Bilateral	08 (08.16)	
Total	98	

**Table 2: Profession or occupation of the varicose patients**

Particular	No of patients - 98	
	n (%)	
Farmers (agriculturist)	19 (19.3)	
Shopkeeper	17 (17.3)	
Hotel/bar waiter (attender)	21 (21.4)	
Bus conductors	14 (14.2)	
Mason	16 (16.3)	
Traffic police	11 (11.2)	

**Table 3: Clinical manifestations**

Particular	No of patients - 98	
	n (%)	
Pain	27 (27.5)	
Dilation of vein	25 (25.5)	
Ulcer	22 (22.4)	
Edema	08 (8.16)	
Itching and pigmentation	05 (05.10)	
Cramps	06 (06.12)	
Heaviness of legs	05 (05.10)	

**Table 4: Type of venous system involved**

Types	No of patients - 98	
	n (%)	
Long saphenous venous system	49 (50)	
Long saphenous + incompetent perforators	33 (33.6)	
Short saphenous venous system	09 (09.18)	
Both long and short saphenous veins involvement	07 (07.14)	

long saphenous with incompetent perforators, 9 (9.18%) short saphenous venous system, and 7 (7.14%) were both long and short saphenous veins involvement.

In Table 5, description of surgical procedure - 45 (45.9%) saphenous saphenofemoral flush ligation and ligation of anatomical constant tributaries at their termination along with stripping of long saphenous vein, 33 (33.6%) incompetent perforators were identified subfascially and ligated in addition to the above-mentioned procedure, 6 (6.12%) saphenofemoral and saphenopopliteal flush ligation with stripping of both long and short saphenous vein, 4 (4.08%) saphenofemoral saphenous popliteal flush ligation with stripping of long and short saphenous vein and subfascial ligation and excision of incompetent perforators were performed, 8 (8.16%) saphenopopliteal

**Table 5: Description of surgical procedures**

Particular	No of patients - 98
	n (%)
Saphenofemoral flush ligation and ligation of anatomical constant tributaries at their termination along with stripping of long saphenous vein using intraluminal stripper	45 (45.9)
Incompetent perforators were identified subfacially and ligated in addition to the above-mentioned procedure	33 (33.6)
A saphenofemoral and saphenopopliteal flush ligation with stripping of both long and short saphenous vein	6 (6.12)
The saphenofemoral saphenous popliteal flush ligation with stripping of long and short saphenous vein and subfacial ligation and excision of incompetent perforators were performed	4 (4.08)
Saphenopopliteal flush ligation with stripping of short saphenous was done after ligating the tributaries	8 (8.16)
Saphenopopliteal flush ligation with subfascial ligation of perforators	2 (2.04)

flush ligation with stripping of short saphenous was done after ligating the tributaries, and 2 (2.04%) saphenopopliteal flush ligation with subfascial ligation of perforators.

## DISCUSSION

In the present study of surgical management of varicose veins of patients attending institution/hospital 49 (50%) left leg, 41 (41.8%) right leg and 8 (8.16%) was bilateral varicosity [Table 1]. The profession/occupation of the patients was as follows: 19 (19.3%) were farmer, 17 (17.3%) were shopkeeper, 21 (21.4%) were hotel/bar waiters, 14 (14.2%) were bus conductors, 16 (16.3%) were mason, and 11 (11.2%) were traffic police [Table 2]. The clinical manifestation was as follows: 27 (27.5%) had pain, 25 (25.5%) had dilation of veins, 22 (22.4%) had ulceration, 8 (8.16%) had edema, 5 (5.10%) had itching and pigmentation, 6 (6.12%) had cramps, and 5 (5.10%) had heaviness of legs [Table 3]. The venous system involved in varicose veins was as follows: 49 (50%) were long saphenous venous systems, 33 (33.6%) were long saphenous with incompetent perforators, 9 (9.18%) were short saphenous venous system, and 7 (7.14%) were both long and short saphenous venous system [Table 4]. The surgical procedure was as follows: 45 (45.9%) were saphenofemoral flush ligation and ligation of anatomical constant tributaries at their termination along with stripping of long saphenous vein using intraluminal stripper, 33 (33.6%) subfascial ligation of incompetent perforators in addition to above procedure, 6 (6.12%) saphenofemoral and saphenopopliteal flush ligation with stripping of both long and short saphenous vein, 4 (4.08%) saphenofemoral, saphenopopliteal ligation of long and short saphenous vein, respectively, and subfascial ligation of incompetent perforators, 8 (8.16%) saphenopopliteal ligation with stripping of short saphenous vein, and 2 (2.04%) saphenopopliteal flush ligation with subfascial ligation of perforators. These findings were more or less in agreement with the previous studies.<sup>[5-7]</sup>

Involvement of long saphenous venous system was more common than the short saphenous vein. The left

limb was affected more commonly. The probable reason could be attributed to the longer course transversed by the left iliac veins of lower limbs. Moreover, incompetent perforators were observed. It was due to hemodynamic disturbances of the limb due to persistence standing on foot.<sup>[8]</sup> Saphenofemoral valve incompetence results into edema ulcer, and in severe cases, it may end in spontaneous bleeding also.<sup>[9,10]</sup>

Complications of the varicose vein after surgery are very rare and include - wound infections were the major complications and treated meticulously. Apart from surgery sclerotherapy, foam therapy and laser endoluminal ablation are the available treatment for varicose veins. However, surgery is the only treatment with long-term effectiveness because surgical method of flush ligation with vein stripping will maintain the competency of venous valves for longer duration and there will be less chances of recurrence in post-surgical cases.

## SUMMARY AND CONCLUSION

The present study of surgical management varicose veins in patients attending institution/hospital due to varicose veins of lower limb with incompetent perforators, vein stripping after flush ligation allows entire vein to be pulled out through the incision near the groin. It appears to be better methods of treatment than extrafascial ligation. Because in the former all the perforators could be visualized and dealt with while the latter there were chances of missing one or two perforators. This surgical procedure is safer and enables the patients to lead normal future life.

However, this study demands further, genetic, biomechanical, pathophysiological, nutritional, and angiological study because the exact mechanism of venous reflux is still unclear.

This research paper was approved by the Ethical Committee of Mamata Medical College, Khammam - 507 002, Telangana.

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