To evaluate the outcome of varicose vein surgery with and without venous stripping

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DOI: 10.47750/pnr.2022.13.S06.107

Abstract

Aim: The aim of this study to evaluate the outcome of varicose vein surgery with and without venous stripping.

Material and methods: This research covered 100 varicose vein operations across all surgical units. This research included all varicose vein patients between the ages of 18 and 70 who also had incompetent perforators and the saphenofemoral valve. The research excluded individuals with age extremes between 18 to 70, deep vein thrombosis, concomitant short saphenous vein varicosity, venous ulcer or other skin abnormalities, and recurring varicosity.

Results: The left leg was more commonly involved than the right side. The left limb was involved in 64% and the right limb was involved in 36% of patients in group 1 and 70% and 30% in group 2. 30% of patients who had venous stripping experienced hematoma development in the thigh, compared to 6% of patients who received the Trendelenburg operation alone without venous stripping. 18% of patients had haemorrhage. Due to the tissue stress that occurs during venous stripping, there is an increased risk of hematoma development in the thigh in individuals who undergo stripping. The ineffective perforators in the legs of both groups were accessed by making a transverse incision at the preoperatively indicated spot under Doppler guidance. In the days after the operation, these wounds were checked. In each group, 6% of patients had slower wound healing. On the first post-operative day, when patients were urged to walk, 70% of those who had had stripping and 90% of those who had undergone ligation alone were able to do so comfortably. It was discovered that there was increased discomfort, tissue stress, hematoma development, and bruising in the case of venous stripping.

Conclusion: There is no noticeable difference between the two processes with regards to wound healing, hospital stay, or pain treatment. It would seem that the Trendelen burg technique with incompetent perforator's ligation without venous stripping is preferable to the Trendelenburg method with incompetent perforator's ligation with venous stripping, based on the observed characteristics.

Keywords: Varicose veins with and without venous stripping, Outcome, Surgical management.

INTRODUCTION

Since the dawn of recorded history, humans have been suffering from varicose veins, making it one of the oldest recognised ailments. Exaggerated, elongated, and twisted veins are what we call varicose veins. With each passing day, the condition becomes more debilitating. 1 The morbidity from this illness is higher than the mortality rate suggests. Conservative, surgical, and endovenous treatments are all on the table. A patient's overall health and their specific symptoms should be taken into account while deciding on a course of therapy. 2 The deep plantar venous arch is the starting point for the deep veins in the leg. The anterior tibial vein, the posterior tibial vein, and the peroneal vein are the three major deep veins in the leg. The tibioperoneal trunk is often formed when the posterior tibial vein and peroneal vein merge. 3 At the knee, the three veins come together to create the popliteal vein, which travels anteriorly and upward via the adductor canal into the distal thigh, where it is known as the superficial femoral vein. At this point, it merges with the deep femoral vein to produce the common femoral vein, which then branches out into the external iliac vein. While standing or sitting up straight, blood naturally collects in the legs and feet because of gravity. The heart must be defined by gravity and forced open to receive this. 4 Specifically, this is accomplished by the existence of competent valves and the contraction of limb muscles (the limbs' "peripheral heart") that inhibit retrograde flow. 5 Normally, the vast majority (90%) of venous return takes place through the deep system, while perforator veins only allow for a single-directional flow (superficial to deep). When at rest in the supine posture, the venous pressure in the foot is

equal to the total of the resistance encountered in the arterioles and precapillary sphincters, and the remaining kinetic energy. Right atrial pressure is 10-12 mm Hg higher than left atrial pressure. However, in an upright position, the hydrostatic pressure exerted by the blood column from the right atrium to the foot serves as the resting pressure on the foot. 6

Material and methods

In the general surgery department, a comparative research was conducted. This research covered 100 varicose vein operations across all surgical units. This research included all varicose vein patients between the ages of 18 to 70 who also had incompetent perforators and the saphenofemoral valve. The research excluded individuals with age extremes between 18 to 70, deep vein thrombosis, concomitant short saphenous vein varicosity, venous ulcer or other skin abnormalities, and recurring varicosity.

Methodology

A thorough medical history, clinical examination, routine blood tests, chest x-ray, electrocardiogram (ECG), and venous Doppler of the injured leg were performed on each patient. To prevent bias, the sexes and ages of the chosen patients were matched. Patients underwent one of the two surgical therapy modalities after being told of the operation and given their agreement. A transverse incision of 3 cm in length was made immediately below the groyne crease in one group I, extending from the location of the femoral artery pulsation medially. This surgery was performed on 50 patients. By creating a tiny transverse incision along the vein's course at the location of the incompetent perforators identified preoperatively, the incompetent perforators in the thigh and leg are ligated and split subfascially. Next, a bypass stripper is inserted into the long saphenous vein, which extends from the groyne to just below the knee. 50 patients in group II had the Trendelenburg procedure, which is performed by creating a transverse incision 3 cm long just below the groyne crease that extends from the region of medial femoral artery pulsation. By creating a tiny transverse incision along the vein's course at the location of the incompetent perforators indicated prior to surgery, the incompetent perforators in the leg are ligated and split subfascially. Both groups had their wounds properly hemostasized, their limbs raised, and their final crepe bandage placed. Next their procedures, all patients were monitored for the following two months. Each patient's unique proforma included information on them, including information about all of the patients, their investigations, the surgery they had, and the follow-up.

Statistical analysis

To determine if there is a substantial difference in the results of two surgical procedures, the two studies were statistically compared. It was first considered that there was no discernible difference between the two processes, which is known as the null hypothesis. The significance of each individual variable was examined using the chi-square test. The difference is significant if the p value is 0.05.

Results

In groups 1 and 2, respectively, 82% and 80% of the patients were men. The age range covered by this research is 18 to 70. The average age of participants in our research is 68, with the lowest participant age being 23 and the highest being 50, with 30 being the youngest. Group 1 demographics were as follows: 30% and 20% between 50 and 70 years old; group 2 demographics were below 30 years old (28% and 20% between 50 and 70 years old); and 52% in the age group of 30 to 50 years.

Table 1: Gender and age wise distribution of the patients

Parameter	**With Venous Stripping**		**Without Venous Stripping**	
	Number	**%**	**Number**	**%**
Gender				
Male	41	82	40	80

Female	9	18	10	20
Age				
below 30	15	30	14	28
30-50	25	50	26	52
50-70	10	20	10	20

The left leg was more commonly involved than the right side. The left limb was involved in 64% and the right limb was involved in 36% of patients in group 1 and 70% and 30% in group 2.

Table 2: Limb involvement

Parameter	**With Venous Stripping**		**Without Venous Stripping**	
	Number	**%**	**Number**	**%**
Left leg	32	64	35	70
Right leg	18	36	15	30

30% of patients who had venous stripping experienced hematoma development in the thigh, compared to 6% of patients who received the Trendelenburg operation alone without venous stripping. 18% of patients had haemorrhage. Due to the tissue stress that occurs during venous stripping, there is an increased risk of hematoma development in the thigh in individuals who undergo stripping.

Table 3: Hematoma formation in the thigh

Hematoma formation in the thigh	**With Venous Stripping**		**Without Venous Stripping**	
	Number	**%**	**Number**	**%**
Present	15	30	3	6
Absent	35	70	47	94

The ineffective perforators in the legs of both groups were accessed by making a transverse incision at the preoperatively indicated spot under Doppler guidance. In the days after the operation, these wounds were checked. In each group, 6% of patients had slower wound healing. On the first post-operative day, when patients were urged to walk, 70% of those who had had stripping and 90% of those who had undergone ligation alone were able to do so comfortably. It was discovered that there was increased discomfort, tissue stress, hematoma development, and bruising in the case of venous stripping.

Table 4: Wound healing

Wound healing	**With Venous Stripping**		**Without Venous Stripping**	
	Number	**%**	**Number**	**%**
Good Wound	47	94	47	94
Delayed wound	3	6	3	6

Discussion

One of the first recognised human disorders, varicose veins were treated using a variety of techniques, from simple phlebotomy to minimally invasive methods. Based on a two-month follow-up period, the results of two surgical treatment methods for varicose surgery with and without venous stripping were compared in this research. In this research, men make up the majority of contributors, or roughly 81%. The age range covered by this research is 18 to 70. The lowest age in our study was 23, and the highest was 68. In group 1, 50% of patients were in the 30–50 age range, followed by those under 30 and those between 50–70. In group 2, 52% were in the 30–50 age range, followed by those under 30 and those between 50–70. 7 After venous stripping, hematoma development was 30%, compared to 6% in the control group.8 Leg wound healing did not vary significantly between the two trials. The ineffective perforators in the legs were accessed in both groups by making a transverse incision at the preoperatively designated location under Doppler guidance. 9 In the days after the operation, these wounds were checked. According to the study, 6% of patients in each group had delayed wound healing, and 6% of patients who had venous stripping experienced wound infection and delayed healing. On the first post-operative day, when patients were urged to walk,

70% of those who had had stripping and 90% of those who had undergone ligation alone were able to do so comfortably. 10 It was discovered that there was increased discomfort, tissue stress, hematoma development, and bruising in the case of venous stripping. 10% of patients who had venous stripping and 6% of patients who had Trendelenburg surgery without venous stripping had long stays of more than 6 days. Pain and a delay in wound healing were the causes. All patients subsequently made full recoveries with little morbidity. 11 In 98% of patients who had venous stripping and 90% of those who did not, there was symptom alleviation at the two-month follow-up. 12 This outcome is comparable to Ryan's outcomes. Patients who did not have venous stripping (90%) were more likely to be able to walk comfortably and painlessly after surgery than those who did (70%). 13 Of those who underwent stripping, 10% stayed longer than 6 days after surgery, compared to 6% of the other group. Pain and slow wound healing were the main causes of the prolonged stay. 14 At the conclusion of the second month, 98% of individuals who had venous stripping experienced pain alleviation, compared to 90% of those who did not.

Conclusion

The short-term factors observed in this comparative analysis of 100 patients indicate that venous stripping is associated with an increased risk of hematoma development and that patients experience significant discomfort while walking on the first postoperative day. There is no noticeable difference between the two processes with regards to wound healing, hospital stay, or pain treatment. It would seem that the Trendelen burg technique with incompetent perforator's ligation without venous stripping is preferable to the Trendelenburg method with incompetent perforator's ligation with venous stripping, based on the observed characteristics.

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