ORIGINAL ARTICLE

OUTCOME OF THE COMPRESSION DRESSING FOR TWO DAYS VS SEVEN DAYS AFTER VARICOSE VEIN SURGERY

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Background: Incompetence of the great saphenous vein (GSV) is a global issue and the most prevalent cause of chronic venous disease of the leg. Clinical manifestations range from moderate to severe, including tiredness, heaviness, and irritation, as well as hyperpigmentation and leg ulcers. Significant advancements in GSV ablation employing percutaneous methods, such as endovenous laser ablation, have been made in recent years. (EVLA). The objective of the study is to compare the outcome of the compression dressing for two days vs. seven days after varicose vein surgery. This case control study was performed on the Surgical floor, Mayo Hospital, Lahore, from September 15 to March 15, 2020. **Methods:** We took a sum of 60 patients admitted from the outpatient department fulfilling the inclusion criteria after the approval of the ethical committee of the hospital. Group-A wore compression dressing for 2 days after surgery and Group-B wore compression dressing for seven days after surgery. Each patient received 1gm paracetamol I/V 8 hourly followed by tab. paracetamol 500mg P/O 8 hourly. Then the outcome of compression dressing was analyzed in the form of mean postoperative pain. The mean pain score was assessed in 1 week. Data were entered in SSPS v23.0 and stratification of pain score was done against age, gender, and grades of varicose veins. A comparison of the two groups was done by applying a t-test. A *p*-value ≤0.05 was considered statistically significant. **Results:** We took a sum of 60 patients with Primary varicose veins based on their eligibility for this study. Patients were divided into two groups, i.e., Group-A (Compression dressing for 2 days) and Group-B (Compression dressing for 7 days). The average ages of patients in group A were 33.4±9.6 years and in group, B was 35.4±9.9 years. A mean pain score of 4.5±1.2 was noted in patients in group-A (Compression dressing for 2 days) while 2.9±0.8 in patients in group B (Compression dressing for 7 days) with a *p*-value of 0.0001 which is statistically significant. **Conclusion:** When compression stockings are used for more than two days after the Trendelenburg procedure is done, it can lead to lesser pain and enhanced physical activity in the first-week post operatively.

Keywords: Trendelenburg's procedure; Great saphenous vein; Compression stockings

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INTRODUCTION

Superficial venous insufficiency of the leg is estimated to occur in 40–50 percent of all adults and manifests mostly as a varicose vein. Great saphenous vein incompetence is associated with 80% of all significant lower limb varicosities.[1]

Patients with varicose veins usually present with aching in the legs at the end of the day after prolonged standing. Other symptoms include ankle swelling, itching, bleeding, superficial thrombophlebitis, eczema, lipodermatosclerosis, and ulcerations.[2]

The severity of varicose veins can be assessed by clinical grading from the CEAP system in which there are six classes. Class-0 is no visible or palpable signs of venous disease, Class-1 is telangiectasis, Class-2 is a varicose vein, Class-3 is varicose veins with oedema, Class-4 is varicose veins with pigmentation or lipodermatosclerosis, Class-5 is skin changes with healed ulcers and Class-6 is skin changes with an active ulcer.[3]

Saphenofemoral junction disruption and peeling of the great saphenous vein (GSV) with repeated phlebectomy is a popular surgical technique for the management of symptomatic varicose veins.[4]

Radiofrequency or laser ablation of GSV are two less aggressive therapy methods that are equally successful as compared to surgical management. Following GSV peeling or ablation, compression stockings are typically prescribed to minimize the possibility of haemorrhage, hematoma, oedema, and pain.[5]

A compression dressing is a form of dressing that can be flexible, deformable, a mix of the two, or a layered pressure system. It has the ability to

deliver continuous high tension for many days. It decreases venous wall pressure, avoids reflux, regulates venous regurgitation, redirects blood to deep veins, and enhances venous wall effectiveness.[6] There is a wide variety of opinions according to which the form and time for which this pressure in the form of compression stocking is used. Many studies were done showing different results such as Baker *et al*. have shown a lesser frequency of pain at one week in those patients who have continuous compression, as compared with more amount of pain in those cases with only 2 days of compression 2.0±1.1 versus 3.7±2.1 respectively.[7]

The optimal duration of compression dressing after varicose vein surgery remains a matter of debate.[5] To address this controversy, the study is planned to determine the outcome of compression dressing after varicose vein surgery in terms of postoperative pain. Moreover, no locally published literature is available. This study aimed to compare the outcome of the compression dressing for two days vs. seven days after varicose vein surgery. The outcome was measured in terms of mean postoperative pain.

MATERIAL AND METHODS

This case-control study was performed on the Surgical floor, at Mayo Hospital, Lahore, from September 15 to March 15, 2020. A sample size of 60 patients (30 patients in each group) is estimated by 95% of confidence level with 80% power of the test and taking an expected mean VAS score for two days after varicose vein surgery as 3.7±2.1 and seven days after varicose vein surgery as 2.0±1.1 (8)

All patients of age 18–50 years, of either gender diagnosed clinically by a consultant with primary varicose veins admitted for surgical management, were enrolled in the study.

All those patients with previous varicose vein surgery of GSV, any bleeding disorders diagnosed on previous medical records or having active ulceration diagnosed on clinical examination or having any other limb pain condition such as sciatica diagnosed on history were excluded from the study. Non-Probability Consecutive Sampling Technique was used for enrolment.

A total of 60 patients were admitted from the outpatient department fulfilling the inclusion criteria after the approval of the ethical committee of the hospital.

Written informed consent was taken. Data concerning their demographic profile (age and sex) were recorded. All patients underwent surgery (Trendelenburg operation) for varicose veins. All operations were performed by the same consultant. They were randomly allocated into two groups by the computer-generated method. Group-A wore compression dressing for 2 days after surgery and Group-B wore compression dressing for 7 days after surgery. All patients received 1gm paracetamol I/V 8 hourly followed by tab. paracetamol 500 mg P/O 8 hourly. Then the outcome of compression dressing was analyzed in form of mean postoperative pain. Mean pain score was assessed on 1 week by a doctor who was blind about the procedure. Score 1 on VAS was the lowest and 10 was the highest for pain.

Data were entered in SSPS v23.0. Quantitative variables like age and postoperative pain were presented as Mean±S.D. Qualitative variable like gender was presented as frequency and percentages. Stratification of pain score was done against age, gender, and grades of varicose veins. A comparison of two groups formed that was compression dressing for 2 days after varicose vein surgery and compression dressing for 7 days after varicose vein surgery is done by applying t-test. A *p*-value ≤of 0.05 was considered significant.

RESULTS

In this study, a sum of 60 cases having primary varicose veins were analyzed. These patients were made to form two groups viz. Group-A (Compression dressing for 2 days) and Group-B (Compression dressing for 7 days). In terms of numbers and percentages, a total of 19 (63.3%) male patients and 11 (36.7%) female cases were present in group-A, while 18 (60.0%) were males and 12 (40.0%) females in group B. The age range in this study was from 18 to 50 years with a mean age of 34.5±8.5 years. In this study, the average age of cases in our group A was 33.4±9.6 years and in group, B was 35.4±9.9 years. In group-A, 12 (40.0%) had 18–30 years of age, while 10 (33.3%) and 8(26.7%) had 31–40 years and >40 years of age respectively. In group B, 10 (33.3%) had 18–30 years of age, while 8(26.7%) and 12 (40.0%) had 31–40 years and >40 years of age respectively.

In group-A, 7 (23.3%) had class-2 grade of varicose veins, while 8 (26.7%), 9 (30.0%) and 6 (20.0%) had class-3, class-4 and class-5 grade of varicose veins respectively. In group-B, 13(43.3%) had class-2 grade of varicose veins, while 6 (20.0%), 4 (13.3%) and 7 (23.3%) had class-3, class-4 and class-5 grade of varicose veins respectively.

A mean pain score of 4.5±1.2 was noted in patients in group-A (Compression dressing for 2 days) while 2.9±0.8 in patients in group B (Compression dressing for 7 days) with a *p*-value of 0.0003 which is statistically significant as shown in table-1.

By stratification of mean pain score in both groups concerning gender, there was a significant difference in males (p=0.012) and females

(p=0.0001) in both groups as shown in table-2. By stratification of mean pain score in both groups concerning age, there was a significant difference in all age groups in both groups (p=0.0001, 0.010, 0.027) as shown in table-3. By stratification of mean pain score in both groups concerning grades of varicose veins, there was a significant difference in all grades of varicose veins in both groups (p=0.007, 0.017, 0.084, 0.003) as shown in table-4.

Table-1: Comparison of pain score in both groups

	Groups	N	Mean	SD	p-value
VAS pain score	Group-A (Compression dressing for 2 days)	30	4.50	1.22	0.0003
	Group-B (Compression dressing for 7 days)	30	2.97	0.81	

Table-2: Stratification of pain score in both groups concerning gender

	Gender	Groups	N	Mean	SD	*p*-value
VAS pain score	Male	Group-A (Compression dressing for 2 days)	19	4.55	1.37	0.012
		Group-B (Compression dressing for 7 days)	18	3.25	0.87	
	Female	Group-A (Compression dressing for 2 days)	11	4.47	1.17	0.0001
		Group-B (Compression dressing for 7 days)	12	2.78	0.73	

Table-3: Stratification of pain score in both groups concerning age

	Age groups	Groups	N	Mean	SD	*p*-value
VAS pain score	18-30 years	Group-A (Compression dressing for 2 days)	12	4.75	1.14	0.0001
		Group-B (Compression dressing for 7 days)	10	2.90	0.88	
	31-40 years	Group-A (Compression dressing for 2 days)	10	4.40	1.35	0.010
		Group-B (Compression dressing for 7 days)	8	2.88	0.64	
	>40 years	Group-A (Compression dressing for 2 days)	8	4.25	1.28	0.027
		Group-B (Compression dressing for 7 days)	12	3.08	0.90	

Table-4: Stratification of pain score in both groups concerning grades of varicose veins

	Grades of varicose veins	Groups	N	Mean	SD	*p*-value
VAS pain score	Class-2	Group-A (Compression dressing for 2 days)	7	4.29	1.38	0.007
		Group-B (Compression dressing for 7 days)	13	2.92	0.64	
	Class-3	Group-A (Compression dressing for 2 days)	8	4.50	0.93	0.017
		Group-B (Compression dressing for 7 days)	6	3.00	1.10	
	Class-4	Group-A (Compression dressing for 2 days)	9	4.11	1.27	0.084
		Group-B (Compression dressing for 7 days)	4	2.75	0.96	
	Class-5	Group-A (Compression dressing for 2 days)	6	5.33	1.21	0.003
		Group-B (Compression dressing for 7 days)	7	3.14	0.90	

DISCUSSION

Because GSV incompetence happens to be a widespread medical condition all throughout the globe, many clinicians are confronted by this. Despite the emergence of successful minimally invasive percutaneous methods like EVLA in recent years, postoperative protocols are still not defined as there is a shortage of viable research.[9] Applying compression bandage following Trendelenburg Operation for more than two days results in clinically detectable improvement after 1 week, according to our investigation. When evaluated one-week post surgery, the pain is lessened and much better in the patient group who wore the stockings for one week. As far as our knowledge, this is one of the first studies that directly compare the length of using compression stockings following Trendelenburg Operation.[10]

It is apparent that the current findings are only applicable to patients with Trendelenburg Operation-treated GSV incompetence. It is critical to understand that it would be a pilot project and that effective findings could not be presented because the current study is limited

Given Trendelenburg Operation's 95.0 percent success rate and finding an absolute difference of 5.0 percent in efficacy, a minimum of 868 patients should have been recruited in such research.

Compression stockings must not and are no to be recommended for any more days than 7 from a medical standpoint, as clinical outcomes and morbidity rates appear to be equivalent in both categories.[11] But when we measure the patient contentment, this pain is the most significant factor.[12]

As a consequence, it is impossible to overlook the finding that using compression stockings seven days a week has led to superior outcomes in terms of these variables.[13] As a result, it recommends the following algorithm: After

Trendelenburg Operation, the patient must use compression stockings postoperatively for at least seven days.[14]

Following thorough informed consent, where the individual is told of the potential implications, the patient is told to choose if the nuisance of using the stockings exceeds the potential discomfort along with impaired physical capability.

In this study, a Mean pain score of 4.5±1.2 was noted in patients in group-A (Compression dressing for 2 days) while 2.9±0.8 in patients in group B (Compression dressing for 7 days) with a *p*-value of 0.0003 which is statistically significant.

Baker *et al*. demonstrated lesser pain at one week in those patients who have continuous compression, as compared with the magnitude of pain in cases with only two days of compression 2.0±1.1 versus 3.7±2.1 respectively.[15] Compression is becoming common therapy following varicose vein surgery, as advised in the majority of current guidelines, to decrease bruising, pigmentation, discomfort, and oedema, as well as to increase effectiveness. Fewer adverse effects may be predicted now that venous procedures are minimally invasive. As a result, the requirement for compression is less obvious.[16] Limitations of our study were that we had a small sample size and we only performed this study at our center. At the same time, it was one of the pioneers' local studies in this regard where compression stockings are compared for 2 and 7 days.

CONCLUSION

Allowing the lower limb pressure with compression stockings when worn for more than 2 days post endogenous intervention, i.e., GSV ablation can lead to improved physical function as well as improvement in the pain during the first week after treatment.

AUTHORS' CONTRIBUTION

AK, Shehdost: Review of paper, Discussion writing. NS: Literature review. AR: Data collection/Entry

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