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Research Article

**SHORT TERM VS LONG TERM COMPRESSION DRESSING  
IN VARICOSE VEIN MANAGEMENT AFTER SURGERY**<sup>1</sup>Urwa Yaqoob, <sup>2</sup>Haafizah Anam Saeed, <sup>3</sup>Rimsha Yousaf,<sup>1</sup>Women Medical Officer, Children Hospital Faisalabad

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**Abstract:**

**Introduction:** Great saphenous vein (GSV) incompetence is the most common cause of chronic venous insufficiency. Associated symptoms range from mild conditions such as fatigue, heaviness, and itching to more serious conditions such as skin discoloration and leg ulceration. Over the last years, significant advances in GSV ablation using percutaneous techniques have emerged, including endovenous laser ablation (EVLA).

**Objective:** To compare the outcome of the compression dressing for two days vs. seven days after varicose vein surgery

**Study Setting:** The study was conducted at Surgical floor, DHQ Hospital, Faisalabad.

**Duration Of Study:** March, 2019 to September, 2019.

**Study Design:** Randomized Controlled Trial

**Subjects & Methods:** A total of 60 patients were admitted from outpatient department fulfilling the inclusion criteria after the approval of ethical committee of hospital. Group-A wore compression dressing for 2 days after surgery and Group-B wore compression dressing for 7 days after surgery. All patient received 1gm paracetamol I/V 8 hourly followed by tab. paracetamol 500mg P/O 8 hourly. Then the outcome of compression dressing was analysed in form of mean post-operative pain. Mean Pain score was assessed on 1 week.

Data were entered in SPSS v23.0. Stratification of pain score was done against age, gender and grades of varicose veins. Comparison of two groups was done by applying t-test. A p-value  $\leq 0.05$  was considered significant.

**Results:** Total 60 patients with Primary varicose vein were enrolled in this study. Patients were divided in two groups i.e. Group-A (Compression dressing for 2 days) and Group-B (Compression dressing for 7 days). The mean age of patients in group A was  $33.4 \pm 9.6$  years and in group B was  $35.4 \pm 9.9$  years. Mean pain score  $4.5 \pm 1.2$  was noted in patients in group-A (Compression dressing for 2 days) while  $2.9 \pm 0.8$  in patients in group-B (Compression dressing for 7 days) with p-value of 0.0001 which is statistically significant.

**Conclusion:** Prescribing compression stockings for longer than 2 days after Trendelenburg's procedure leads to reduced pain and improved physical function during the first week after treatment.

**Key Words:** Trendelenburg's procedure, Great saphenous vein, Compression stockings.

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## INTRODUCTION:

Superficial venous insufficiency of leg is estimated to occur in 40-50 percent of all adults and manifest mostly as varicose vein.<sup>1</sup> Great saphenous vein incompetence is associate with 80% of all significant lower limbs varicosities.<sup>2</sup>

Patients with varicose vein usually presents with aching in the legs at the end of day after prolonged standing. Other symptoms include ankle swelling, itching, bleeding, superficial thrombophelbitis, eczema, lipodermatosclerosis and ulcerations.<sup>2</sup>

The severity of varicose vein can be assessed by clinical grading from 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 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 active ulcer.<sup>3</sup>

A common surgical procedure for treatment of primary varicose vein is sapheno-femoral ligation and stripping of the great saphenous vein(GSV) with multiple phlebectomies.

Other less invasive treatment modalities considered as effective as surgery, include radiofrequency or laser ablation of GSV. After GSV stripping or ablation, the prescription of compression stockings to reduce hemorrhage, hematoma, edema and pain is standard practice.<sup>4</sup>

Compression dressing is a type of dressing which may be elastic, inelastic, combination of elastic and inelastic, multilayered compression system. It can provide sustained high compression for several days. It reduces the venous wall tension, prevent reflux, control venous over distention, divert blood towards deep veins and improves the efficacy of venous wall.<sup>5</sup>

There is considerable variation in type and duration of compression employed. Many studies were done showing different results such as Baker et al. reported less pain at 1 week in patients having ongoing compression, compared with pain in those with only 2 days of compression  $2.0 \pm 1.1$  versus  $3.7 \pm 2.1$  respectively.<sup>6</sup>

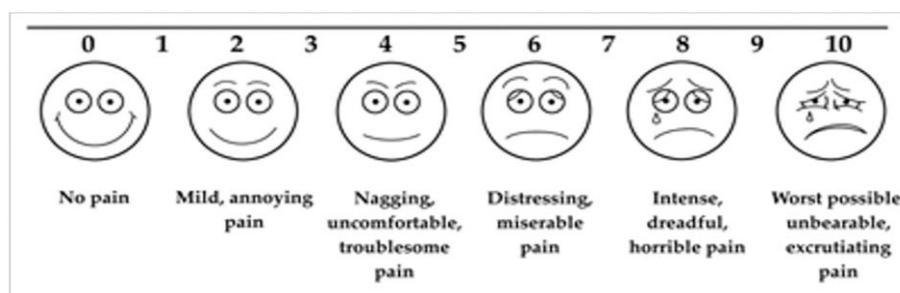
Optimal duration of compression dressing after varicose vein surgery remains a matter of debate. In order to address this controversy, study is planned to determine the outcome of compression dressing after varicose vein surgery in terms of postoperative pain. Moreover no local published literature is available. The aim of this study was 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 post-operative pain.

## MATERIALS AND METHODS:

The randomized controlled trial was conducted at the Surgical floor, DHQ Hospital, Faisalabad from March, 2019 to September, 2019. Non-Probability Consecutive Sampling Technique to collect samples for the study. All patients of age 18-50 years of both genders having primary varicose vein of grade 2,3,4,5 varicose veins<sup>3</sup> (diagnosed clinically by a consultant) as mentioned in the operational definition were included in the study. Patients with previous varicose vein surgery of GSV, bleeding disorders diagnosed on previous medical record, active ulceration diagnosed on clinical examination, and no other limb pain condition such as sciatica diagnosed on history were excluded.

A total of 60 patients were admitted from outpatient department fulfilling the inclusion criteria after the approval of ethical committee of hospital. Sample size of 60 patients (30 patients in each group) was estimated by 95% of confidence level with 80% power of test and taking an expected mean VAS score for two days after varicose vein surgery as  $3.7 \pm 2.1$  and seven days after varicose vein surgery as  $2.0 \pm 1.1$ .<sup>6</sup> A written informed consent was taken. Data with respect to their demographic profile (age and sex) were recorded.

Varicose veins were defined as dilated, tortuous, subcutaneous veins usually seen in upright posture.<sup>2</sup> It was assessed on clinical examination. Post-operative Pain was assessed by visual analogue scale which is:



The pain was assessed on one week after the procedure. Hypothesis for this study was that there is a difference in the outcome of compression dressing for two days vs seven days after varicose vein surgery in terms of mean post operative pain.

All patients underwent surgery (trendelenburg operation) for varicose vein. All operations were performed by same consultant. They were randomly allocated into two groups by 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 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 form of mean post-operative pain. Mean Pain score was assessed on 1 week by a doctor who was blind about the procedure.

Data were entered in SSPS v23.0. Quantitative variables like age and post operative pain were presented as Mean  $\pm$  SD. Qualitative variable like gender was presented as frequency and percentages. Stratification of pain score was done against age, gender and grades of varicose veins. 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  $\leq 0.05$  was considered significant.

### RESULTS:

Total 60 patients with Primary varicose vein were enrolled in this study. Patients were divided in two groups i.e. Group-A (Compression dressing for 2 days) and Group-B (Compression dressing for 7 days). There were 19(63.3%) males and 11(36.7%)

females in group-A, while 18(60.0%) were males and 12(40.0%) females in group-B. Age range in this study was from 18 to 50 years with mean age of  $34.5 \pm 8.5$  years. The mean age of patients in group A was  $33.4 \pm 9.6$  years and in group B was  $35.4 \pm 9.9$  years. In group-A, 12(40.0%) had 18-30 years ages, while 10(33.3%) and 8(26.7%) had 31-40 years and  $>40$  years ages respectively. In group-B, 10(33.3%) had 18-30 years ages, while 8(26.7%) and 12(40.0%) had 31-40 years and  $>40$  years ages 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.

Mean pain score  $4.5 \pm 1.2$  was noted in patients in group-A (Compression dressing for 2 days) while  $2.9 \pm 0.8$  in patients in group-B (Compression dressing for 7 days) with p-value of 0.0003 which is statistically significant.

By stratification of mean pain score in both groups with respect to gender, there was a significant difference in males ( $p=0.012$ ) and females ( $p=0.0001$ ) in both groups. By stratification of mean pain score in both groups with respect to age, there was a significant difference in all age groups in both groups ( $p=0.0001, 0.010, 0.027$ ). By stratification of mean pain score in both groups with respect to grades of varicose veins, there was a significant difference in all grades of varicose veins in both groups ( $p=0.007, 0.017, 0.084, 0.003$ ).

**Table-1: Comparison of pain score in both groups**

VAS pain score	Groups	N	Mean	SD	p-value
	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 with respect to gender**

VAS pain score	Gender	Groups	N	Mean	SD	p-value
	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 with respect to age**

VAS pain score	Age groups	Groups	N	Mean	SD	p-value
	18-30 years		Group-A (Compression dressing for 2 days)	12	4.75	1.14
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 with respect to grades of varicose veins**

VAS pain score	Grades of varicose veins	Groups	N	Mean	SD	p-value
	Class-2		Group-A (Compression dressing for 2 days)	7	4.29	1.38
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:**

As GSV incompetence is a commonly observed medical problem all over the world, many physicians are faced by this problem. Although treatment strategies have evolved over the last decades, with the introduction of effective minimal invasive percutaneous techniques such as EVLA, postoperative care is still not standardized due to a lack of feasible studies.

In this randomized trial it is clearly demonstrated that wearing compression dressing after TRENDLENBURG OPERATION for more than 2 days leads to clinically observable benefit after 1 week.

Postoperative pain is significantly reduced when measured 1 week after treatment and significantly better in the group of patients wearing the stockings for 1 week. To the best of our knowledge this is the first study directly comparing the

duration of wearing compression stockings after TRENDLENBURG OPERATION.

It is clear that the present results only apply to patients in whom GSV incompetence is treated by TRENDLENBURG OPERATION. It is important to recognize that this was a feasibility study and that results in terms of efficacy cannot be provided as the present study is underpowered.

For such a study, given a 95.0% efficacy rate of TRENDLENBURG OPERATION and detecting an absolute difference of 5.0% in efficacy, a minimal of 868 patients should have been enrolled. From a medical point of view, compression stockings do not have to be prescribed for more than 7 days, as clinical results and morbidity rates seem to be comparable in both groups. Pain is the most important parameter when it comes to patient satisfaction.

Therefore it cannot ignore the observation that 7-day use of compression stockings leads to better results in terms of these parameters. It therefore suggests the following algorithm: the patient should wear compression stockings after TRENDELENBURG OPERATION for at least 07 days after treatment.

After careful informed consent, in which the patient is informed on the possible consequences, the patient is then free to decide whether the inconvenience of wearing the stockings outweighs the potential possible pain and reduced physical functioning.

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

Baker et al. reported less pain at 1 week in patients having ongoing compression, compared with pain in those with only 2 days of compression  $2.0 \pm 1.1$  versus  $3.7 \pm 2.1$  respectively.<sup>6</sup>

#### CONCLUSION:

Prescribing compression stockings for longer than 2 days after endovenous GSV ablation can lead to improved physical function as well as improvement in the pain during the first week after treatment.

#### REFERENCES:

1. Sheikha JE, Carradice D, Nandhra S, Leung C, Smith GE, Campbell B, et al. Systematic review of compression following treatment of varicose veins. *Br J Surg* 2015; 102:719-725.
2. Kevin B. Venous disorder in: William NS, Bulstrode CJK, O'connel PR, Bailey and love's short practice of surgery 25<sup>th</sup>ed boca raton: CRC press 2008;927-935.
3. Biswas S, Clark A, Shields DA. Randomized clinical trial of the duration of compression therapy after varicose vein surgery. *Eur J Vasc Endovasc Surg* 2007; 3:631-637.
4. Huang TW, Chen SL, Bai CH, Wu CH, Tam KW. The optimal duration of compression therapy following varicose vein surgery: A meta-analysis of randomized controlled trials. *Eur J Vasc Endovasc Surg* 2013; 45:397-402.
5. Bhat S. SRB's manual of surgery. 4<sup>th</sup>ed. New Dehli JP Med Ltd 2012.
6. Bakker NA, Schieven LW, Bruins RMG, Van den berg M, Hissink RJ. Compression stockings after endovenous laser ablation of great saphneous vein: A prospective randomized control trial. *Eur J Vasc Endovasc Surg* 2013; 46:588-592.