

Original Research

Assessment of efficacy of sclerotherapy in managing varicose veins and its complications

Sumit Gupta

Associate Professor, Department of Dermatology, Santosh Medical College, Ghaziabad, Uttar Pradesh, India

ABSTRACT:

Background: Varicose veins are enlarged, swollen, and twisted veins that typically appear blue or dark purple. The present study was conducted to evaluate efficacy of sclerotherapy in managing varicose veins and its complications. **Materials & Methods:** 65 cases of varicose veins of both genders underwent venous doppler and were assessed for sapheno-femoral junction incompetence, sapheno-popliteal junction incompetence, perforator incompetence, deep venous system; and presence of abnormal or unnamed veins or perforators. Patients were treated with sclerotherapy using 0.3-0.5% Sodium Tetradecyl Sulphate. **Results:** Out of 65 patients, males were 26 and females were 39. Symptoms were pigmentation in 41, pain in 48, eczema in 37, lipodermatosclerosis in 10, ulcer in 12, limb edema in 7 and others (Telangiectasia) in 2 patients. Complications of sclerotherapy was thrombophlebitis in 13, bruising in 7, pigmentation in 6, deep vein thrombosis in 1, skin necrosis in 4 and recurrence in 2 patients. The difference was significant ($P < 0.05$). **Conclusion:** A quick, safe, and efficient method for treating lower leg varicose veins is sclerotherapy. The process works especially well for smaller varicosities that appear early, which may help to stop skin alterations from developing, as well as for varicosities that remain after surgery.

Keywords: sapheno-femoral junction, sclerotherapy, Varicose veins

Corresponding author: Sumit Gupta, Associate Professor, Department of Dermatology, Santosh Medical College, Ghaziabad, Uttar Pradesh, India

This article may be cited as: Gupta S. Assessment of efficacy of sclerotherapy in managing varicose veins and its complications. J Adv Med Dent Scie Res 2018;6(3):222-224.

INTRODUCTION

Varicose veins are enlarged, swollen, and twisted veins that typically appear blue or dark purple. They are most commonly found on the legs and feet.¹ This condition occurs when the valves in the veins that help blood flow toward the heart do not function properly, leading to blood pooling in the veins. In around 17–50% of patients with varicose veins, cutaneous abnormalities are possible.² Significant morbidity from varicose veins might include lipodermatosclerosis, spontaneous bleeding, spontaneous thrombophlebitis, stasis dermatitis, ankle oedema, recurrent cellulitis, and ulceration of the foot and ankle. Varicose veins and their associated problems are frequently observed in the dermatology clinic.³

Treatment options for varicose veins include sclerotherapy, endovenous occlusion with lasers or radiofrequency, surgery (stripping, ambulatory phlebectomy, high ligation), and other methods. The indications for any varicose vein treatment are preventing problems, relieving symptoms; and enhancing esthetic appearance.⁴ The term "sclerosing therapy" describes the insertion of a sclerosing solution into a vessel's lumen, causing endothelial

damage that results in thrombosis and fibrosis later on. Dermatologists have been using it extensively to treat venous problems such as superficial varicose veins.⁵ The present study was conducted to evaluate efficacy of sclerotherapy in managing varicose veins and its complications.

MATERIALS & METHODS

The present study was conducted on 65 cases of varicose veins of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Patients underwent venous doppler and were assessed for sapheno-femoral junction incompetence, sapheno-popliteal junction incompetence, perforator incompetence, deep venous system; and presence of abnormal or unnamed veins or perforators. Patients were treated with sclerotherapy using 0.3-0.5% Sodium Tetradecyl Sulphate. Elastic compression bandage was applied after injecting the sclerosant. The patient was advised to use the compression bandage for the next 3 months. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 65		
Gender	Males	Females
Number	26	39

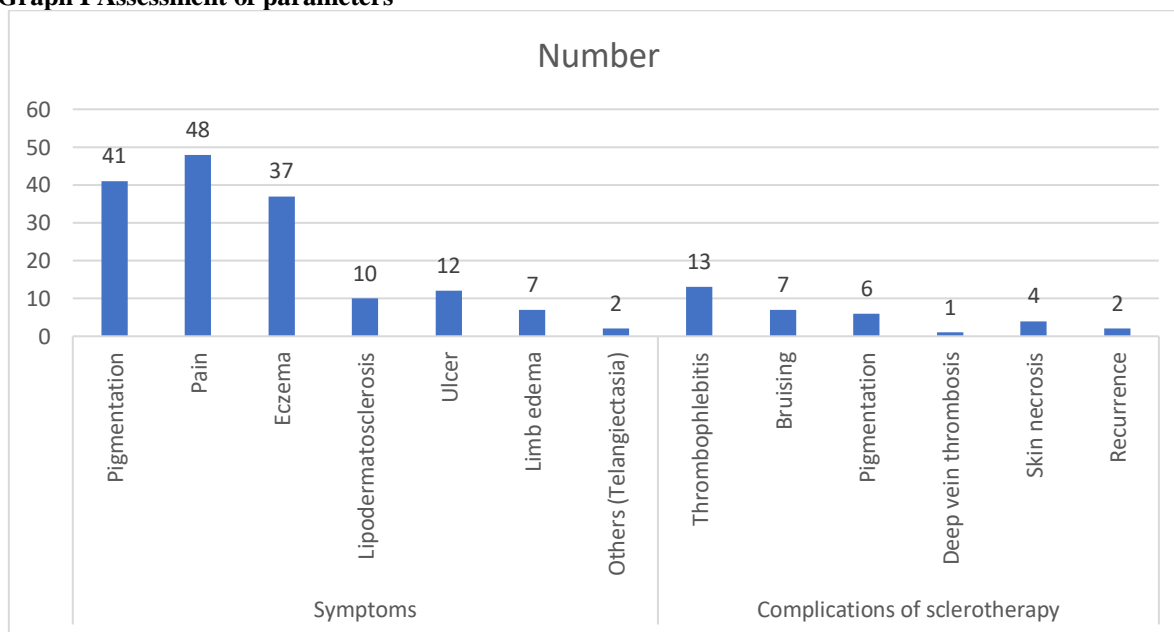
Table I shows that out of 65 patients, males were 26 and females were 39.

Table II Assessment of parameters

Parameters	Variables	Number	P value
Symptoms	Pigmentation	41	0.05
	Pain	48	
	Eczema	37	
	Lipodermatosclerosis	10	
	Ulcer	12	
	Limb edema	7	
	Others (Telangiectasia)	2	
Complications of sclerotherapy	Thrombophlebitis	13	0.02
	Bruising	7	
	Pigmentation	6	
	Deep vein thrombosis	1	
	Skin necrosis	4	
	Recurrence	2	

Table II, graph I shows that symptoms were pigmentation in 41, pain in 48, eczema in 37, lipodermatosclerosis in 10, ulcer in 12, limb edema in 7 and others (Telangiectasia) in 2 patients. Complications of sclerotherapy was thrombophlebitis in 13, bruising in 7, pigmentation in 6, deep vein thrombosis in 1, skin necrosis in 4 and recurrence in 2 patients. The difference was significant ($P < 0.05$).

Graph I Assessment of parameters



DISCUSSION

Varicose veins are characterized as lower limb superficial veins that have permanently lost their ability to contract, resulting in dilated, convoluted, and thicker veins when standing due to venous hypertension.⁶ Varicose veins have a complex origin, and current treatments such as surgery and sclerotherapy are palliative rather than curative.⁷ In the dermatology outpatient department (OPD), varicose veins and their associated dermatological problems

are frequently observed.⁸ The preferred treatment options are surgical treatments such as stripping and ligation. One of the treatments that dermatologists in the west most commonly perform on patients with lower leg varicose veins is sclerosing therapy.⁹ We found that out of 65 patients, males were 26 and females were 39. Symptoms were pigmentation in 41, pain in 48, eczema in 37, lipodermatosclerosis in 10, ulcer in 12, limb edema in 7 and others (Telangiectasia) in 2 patients. Subbarao et al¹⁰ studied

the safety and efficacy of sclerotherapy in the treatment of varicose veins and its dermatological complications. After thorough clinical, laboratory, and radiological evaluation, the patients were treated with sclerotherapy using Sodium Tetradecyl Sulphate of various concentrations depending on the vessel size. The patients were then followed up to look for disappearance of veins, healing of ulcers and eczema, and any complications. Patients showed a good response to treatment with sclerotherapy. 70-80% of patients showed symptomatic improvement along with disappearance of veins and healing of eczema and ulcers. Most of the complications were minor, which resolved over a period of few weeks.

Complications of sclerotherapy was thrombophlebitis in 13, bruising in 7, pigmentation in 6, deep vein thrombosis in 1, skin necrosis in 4 and recurrence in 2 patients. Kahle et al¹¹ studied the effectiveness of sclerotherapy in a randomized, blinded fashion for varicose veins. There were twenty-five varicose vein patients (C(2-4), E(P), A(SP), and P(R)). Eleven individuals received standard saline injections, while fourteen people were given polidocanol (Aethoxysklerol). A week was spent applying compression. Using duplex ultrasonography, controls were carried out one, four, and twelve weeks later. 76.8% of the polidocanol-treated veins were totally blocked ($p < 0.0001$) in contrast to group 2. The venoarterial flow index dropped in group 1 ($p = 0.05$) from 1.45 ± 0.66 to 1.06 ± 0.2 . Within the first group of 14 blocked veins, the venoarterial flow index dropped from 1.5 ± 0.07 to 0.98 ± 0.12 ($p < 0.05$), a vein's competency threshold. The venoarterial flow index increased steadily in group 2. Polidocanol, also known as aethoxysklerol, is an effective injection sclerotherapy agent for obliterating varicose veins and improving venous hemodynamics.

The effectiveness and safety of sclerosant in microfoam for the treatment of venous leg ulcers were assessed by Cabrera et al.¹² 116 consecutive patients (mean age [range], 57 [25-85] years) received polidocanol microfoam (UIPM) injections guided by ultrasound over a period of 115 months. Treatment with UIPM resulted in complete healing in 83% of patients (96/116) at the 6-month follow-up, with a median healing duration of 2.7 months; 7 patients never recovered, and 1 patient was lost to follow-up. Ten of the patients experienced recurrences. Even in senior patients, the use of UIPM to gradually and selectively sclerose incompetent veins caused by venous hypertension is highly beneficial in achieving a stable ulcer healing with little invasion. Recurrences can be treated with ease with this method. This method might be used as the initial course of treatment for the management of leg venous ulcers.

Based on their modes of action, sclerosing solutions are divided into three categories: chemical irritants, osmotic agents, and detergent agents. Among the different sclerosants are sodium morrhuate, polidocanol, hypertonic saline, and STS. By changing

the surface tension around the endothelial cells through a mechanism known as the protein theft mechanism, it destroys the endothelium.¹³

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that a quick, safe, and efficient method for treating lower leg varicose veins is sclerotherapy. The process works especially well for smaller varicosities that appear early, which may help to stop skin alterations from developing, as well as for varicosities that remain after surgery.

REFERENCES

1. Goldman MP, Weiss RA, Bergan JJ. Diagnosis and treatment of varicose veins: A review. *J Am Acad Dermatol* 1994;31:393-413.
2. Weiss RA, Weiss MA. Treatment of varicose and telangiectatic veins. In: Freedberg JM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI, editors. *Fitzpatrick's Dermatology in General Medicine*. 6th ed. New York: McGraw Hill publishers; 2003. p. 2549-56.
3. Baccaglini U, Spreafico G, Castoro C, Sorrentino P. Sclerotherapy of varicose veins of the lower limbs. Consensus paper. *North American Society of Phlebology. Dermatol Surg* 1996;22:883-9.
4. Goldman MP. Treatment of varicose and telangiectatic leg veins: Double-blind prospective comparative trial between aethoxyskerol and sotradecol. *Dermatol Surg* 2002;28:52-5.
5. Sadick N, Li C. Small-vessel sclerotherapy. *Dermatol Clin* 2001;19:475-81, viii. 7. Labas P, Ohradka B, Cambal M, Ringelband R. The results of compression sclerotherapy. *Phlebologie* 2000;29:137-41.
6. Tessari L, Cavezzi A, Frullini A. Preliminary experience with a new sclerosing foam in the treatment of varicose veins. *Dermatol Surg* 2001;27:58-60.
7. Khunger N, Sacchidanand S. Standard guidelines for care: Sclerotherapy in dermatology. *Indian J Dermatol Venereol Leprol* 2011;77:222-31.
8. Sacchidanand S, Nagesh TS. Sclerotherapy. In: Venkataram M, editor. *ACS (I) Textbook on Cutaneous and Aesthetic Surgery*. 1st ed. New Delhi: Jaypee Medical publishers; 2012. p. 452-62.
9. Fun SK. Varicose veins of the lower limbs: A study of aetiology and symptomatology. *Hong Kong Pract* 1988;10:3319-26.
10. Subbarao NT, Aradhya SS, Veerabhadrapa NH. Sclerotherapy in the management of varicose veins and its dermatological complications. *Indian J Dermatol Venereol Leprol* 2013;79:383-8.
11. Kahle B, Leng K. Efficacy of sclerotherapy in varicose veins—A prospective, blinded, placebo-controlled study. *Dermatologic surgery*. 2004 May 1;30(5):723-8.
12. Cabrera J, Redondo P, Becerra A, Garrido C, Cabrera J Jr, García-Olmedo MA, et al. Ultrasound-guided injection of polidocanol microfoam in the management of venous leg ulcers. *Arch Dermatol* 2004;140:667-73.
13. Yamaki T, Nozaki M, Sasaki K. Acute massive pulmonary embolism following high ligation combined with compression sclerotherapy for varicose veins report of a case. *Dermatol Surg* 1999;25:321-5.