

Foam Sclerotherapy-Alternative/Adjunct Treatment in Varicose Veins

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Abstract: Varicose veins is a growing menace in general population which commonly present with varicosities , pigmentation and relentless non healing ulceration. Ulcers range from small waxing and waning ulcers to circumferential deep ulcers which are adamant. Common modalities like surgery(including Trendlenburg's, stripping and microphlebectomy), EVLT and RFA address the problem of main veins leaving behind small veins like reticular veins and ankle flare. This leads to recurrence of varicosities and ulceration.

In this study,we evaluated 58 cases of Varicose veins treated with Foam sclerotherapy(FS) either as primary modality (n.34)or as an adjunct to surgery(n.24).

Materials and methods:All patients are evaluated by colour Doppler and DVT is excluded

1. Among the 34 patients treated with FS

2. 7(20.5%) patients are treated for varicosities alone.

a. 21(61.7%) patients are treated for venous ulcer.

b. 6 (17.8%) patients - reticular veins and ankle flare with pigmentation and ulceration.

2. In all cases, **sodium tetradecyl sulphate** is used (to avoid drug bias) as sclerosant.

3. Foam is created with 2ml of STDS, and 8ml of air making 10 ml of foam by TESSARI s method and is injected into veins after cannulating with scalp vein needle/ 26 G needle to a maximum of 15ml foam. Post operatively crepe bandage applied. All injections are given under MAC(monitored anaesthesia care)

4.In case of venous ulcers treated with sclerotherapy alone all veins in the vicinity of ulcer are injected.In cases where FS is used as an adjunct it is done on a second visit after 20 days post operatively into the residual blow outs.

Results:

a. In all cases the veins occluded completely, confirmed clinically and sonologically.

b. In ulcer patients 16 ulcers healed completely and in 5 patients there is regression of ulcer size from 40-60% of pre FS stage.

c. In cases where there is pigmentation there is improvement in pigmentation. In all patients there is subjective improvement in dragging pain of the legs and tiredness of calf muscles.

Complications included pain in the course of veins extravasation of drug with pigmentation at injection site and temporary dizziness during the procedure.

Conclusion: Though further evaluation is needed Foam sclerotherapy appears to be cheap and reliable adjunct treatment for varicose veins particularly in patients having reticular vein, ankle flare with pigmentation and ulceration. Moreover , it appears to be an adjunctive treatment for post operative residual veins.

Key Word: Foam sclerotherapy,varicose vein,sodium tetradecylsulphate

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I. Introduction

Varicose veins is a growing menace in general population.

Commonly presenting with varicosities, pigmentation and relentless non healing ulceration.

Ulcers range from small waxing and waning ulcers to circumferential deep ulcersCommon modalities –

- Surgery (Trendlenburg's , stripping and microphlebectomy, sub fascial ligation)
- Endovenous laser therapy
- Radiofrequency ablation.

Trendelenburg's operation(1882) and the stripping of vein are still the gold standard^{1,2}. The crude method of stripping has been replaced by various newer modifications like laser,radiofrequency ablation,or sclerotherapy.

The treatment of tiny veins by use of laser or sclerotherapy is mainly considered for cosmetic purpose.

II. Objective

To evaluate Foam sclerotherapy as an alternative or adjunct therapy in varicose veins.

III. Study Details

MATERIALS AND METHODS-

A prospective study was conducted over 58 patients admitted to surgical wards with varicose veins during June 2017 to August 2018 in Government general Hospital, Rangaraya medical college, Kakinada.

All patients were evaluated by colour doppler and **DVT was excluded.**

Sodium tetradecyl sulphate only used (to avoid drug bias) as sclerosant.

In case of venous ulcers treated with sclerotherapy alone **all veins in the vicinity** of the ulcer are injected.

In cases where FS is used as adjunct it is done on the second visit after 20 days post operatively into the residual blow outs.

Total no. of cases - 58

Foam sclerotherapy only- 34

As an adjunct to surgery- 24

Among 34 patients treated with FS

a. for varicosities alone- 7(20.5%)

b. for venous ulcer- 21(61.7%)

c. for reticular veins and ankle flare with pigmentation and ulceration – 6(17.8%)

INCLUSION CRITERIA

Patient presenting with symptoms of varicose veins belonging to clinical etiology anatomy pathology (CEAP) Class I to VI³ were included in the study

Patients were clinically examined as per CEAP classification and assessed by a single trained surgeon prior to and after treatment, for follow up.

PROCEDURE

PREPARATION

Before sclerotherapy, all general and systemic investigations and colour Doppler study of the venous system of lower limbs upto the level of umbilicus, were routinely done. The proposed leg was prepared.

TECHNIQUE

Tessari's method⁴

Foam is created with 2ml of STDS, and 8ml of air making 10 ml of foam .

It is injected into veins after cannulating with scalp vein needle /26G needle to a maximum of 15ml foam .Sclerotherapy⁵ is performed mainly into the smallest tributaries, from the lower most part of the lower limb, from the base of the toe, ankle, lower part of the leg and worked up towards larger veins higher up.

Sclerosant was infused slowly into the tributaries of less than 3mm. During this procedure, administration of sclerosant very close to Saphenofemoral/Saphenopopliteal junction is avoided.

After withdrawal of needle from vein, the puncture site is kept pressed with gauze. Post operatively crepe bandage is applied .

IV. Results

In all cases the veins occluded completely, confirmed clinically and sonologically.

In ulcer patients :

complete healing in -16 patients

Regression(40 -60%) of pre FS stage -5 patients.

In cases where there is pigmentation improvement was observed.

In all patients there is subjective improvement in dragging pain of the legs and tiredness of calf muscles.

Complications like pain in the course of veins, extravasation of drug with pigmentation at injection site, temporary dizziness during the procedure and itching over the sclerosed vein after the procedure were observed.



BEFORE SCLEROTHERAPY AFTER SCLEROTHERAPY



BEFORE SCLEROTHERAPY



AFTER SCLEROTHERAPY



BEFORE SCLEROTHERAPY



AFTER SCLEROTHERAPY

V. Discussion

Good alternative to costly EVLT and RFA.

Can occlude small veins like reticular veins and ankle flare.

Varicosities around the ulcers are occluded well which cannot be done by (surgery, EVLT, RFA).

Chances of pulmonary embolism are minimised by foaming the sclerosant.

Not more than 15cc foam can be injected in a single sitting. High concentration and volume of sclerosant associated with increased risk of side effect¹²

Injection of the sclerosant into the small networking tributaries could be termed as chemical bombing or modified Microfoam Sclerotherapy(MMSFT)⁷

Clinical efficacy of technique, involvement of infusion of sclerosant into the smaller vein less than 3mm may be attributed to the presence of Micro vascular valves in the microcirculatory bed constituting the venous distribution system of legs.⁸

Pain along the line of veins injected is the main complication which can be managed with analgesics¹¹

Usage as an adjunct to major modalities makes it a complete and comprehensive approach minimising recurrences.

VI. Conclusion

Foam sclerotherapy appears to be cheap and reliable adjunct or alternative treatment for varicose veins particularly in patients having reticular veins, ankle flare with pigmentation and ulceration although further evaluation is needed.

Moreover , it appears to be an adjunctive treatment for post operative residual veins

References

- [1]. van den Bremer J, Moll FL (2010) Historical overview of varicose vein surgery. *Ann VascSurg* 24:426–
- [2]. Royle J, Somjen GM (2007) Varicose veins: Hippocrates to Jerry Moore. *ANZ J Surg* 77:1120–1127
- [3]. Eklof B, Rutherford RB, Bergan JJ, Carpentier PH, Gloviczki P, Kistner RL et al (2004) Revision of the CEAP classification for chronic venous disorders: consensus statement. *J VascSurg* 40:1248–1252
- [4]. Tessari L, Cavezzi A, Frullini A (2001) Preliminary experience with new sclerosing foam in the treatment of varicose veins. *DermatolSurg* 27:58–60
- [5]. Khunger N, Sacchidanand S (2011) Standard guidelines for care: sclerotherapy in dermatology. *Indian J DermatolVenereolLepr* 77:222–231
- [6]. American Society for Dermatologic Surgery.
- [7]. Wollman JC (2010) Sclerosant foams: stabilities, physical properties and rheological behaviour. *Phlebologie* 39:208–217

- [8]. Mirski MA, Lele AV, Fitzsimmons L, Toung TJ (2007) Diagnosis and treatment of vascular air embolism. *Anesthesiology* 106:164–177
- [9]. Caggiati A, Phillips M, Lametschwandtner A, Allegra C (2006) Valves in small veins and venules. *Eur J VascEndovascSurg* 32:447–5
- [10]. Vincent JR, Jones GT, Hill GB, van Rij AM (2011) Failure of microvenous valves in small superficial veins is a key to the skin changes of venous insufficiency. *Am J VascSurg* 54(6 Suppl):62S–69S, e1-3
- [11]. Golledge J, Quigley FG (2003) Pathogenesis of varicose veins. *Eur J VascEndovascSurg* 25:319–324
- [12]. Theivacumar NS, Darwood R, Gough MJ (2009) Neovascularisation and recurrence 2 years after varicose vein treatment for sapheno-femoral and great saphenous vein reflux: a comparison of surgery and endovenous laser ablation. *Eur J VascEndovascSurg* 38:203–207

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