What's the Story with Foam Sclerotherapy?

NOTES

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Foam sclerotherapy must be looked upon as an entirely new method of treatment. We find it is useful in all types of varices and believe it is proven to be safe, simple, cheap, reliable, and repeatable.

Purpose

Administration of foamed sclerosant was reintroduced in the early 1990s by Cabrerra.1 Tessari developed a way of making liquid sclerosant into foam using two syringes and a three-way stop cock.[2]

Sica and Benigni: reported a 3-year experience in treating saphenous varices.[3]

Methods and Materials

Making the foam uses two 5 cc syringes and a three-way stopcock. The mixture is one part sclerosant and four parts room air. Only detergent sclerosing agents such as Sotradecol and polidocanol at any concentration from 0.25 to 3% can be used.

Results

In treating varicose veins, all published reports describe efficacy in terms of immediate and primary venous occlusion of better than 80%.4–6 Repetition of injections in cases of initial failure allows the results to approach 95% efficacy with three sessions. Early and mid-term results to > 5 years demonstrate a recurrence rate of about 20%. Treating recurrences by injections is as simple as primary treatment and is at least as effective.

Severe complications of foam sclerotherapy are rare. In our experience, most DVTs are gastrocnemius veins or one of two posterior tibial vein thromboses sometimes after telangiectasia or reticular vein sclerotherapy. Guex says that the incidence of deep and/or muscular venous thrombosis after sclerotherapy can be estimated around 3 per 10,000 sclerotherapy sessions.7

The more frequent complications are visual disorders such as hemianopsia with a moiré effect. These adverse reactions have been observed with liquid sclerosing agents but their incidence estimated at 0.5 to 1.0 per 100 foam sessions is much higher with foam. They are also observed in patients suffering from migraine and sometimes reproduce the typical aura. A dry cough is sometimes encountered.

Finally, the usual side effects of sclerotherapy: matting, superficial thrombi and residual pigmentation are observed.

Discussion

The question arises of why foam sclerosant treatment of varices succeeds when liquid sclerotherapy has made little impact. The answer lies in the nature of successful sclerotherapy the end point of which is irreversible venous vascular fibrosis. This only occurs in response to endothelial cell destruction with exposure of the subendothelial layer of cells. This is accomplished by detergent sclerosants which work by the mechanism of protein theft denaturation in which an aggregate of detergent molecules forms a lipid bilayer in the form of a cylinder, a sheet or micelle. This disrupts the endothelial cell surface by stealing away the essential proteins from the cell membrane surface and producing delayed cell death.8 Foam is retained in the treated vein. The liquid washes out quickly.

References

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