Steam Vein Sclerosis – an alternative to mini-phlebectomy?

Florian Netzer, Munich
Disclosure

Speaker name:

...Florian Netzer.......................................................................................

I have the following potential conflicts of interest to report:

I do not have any potential conflict of interest – alas...!
Tributaries! No scars wanted?
Temperature profiles of 980- and 1,470-nm endovenous laser ablation, endovenous radiofrequency ablation and endovenous steam ablation.
Malskat WS, Stokbroekx MA, van der Geld CW, Nijsten TE, van den Bos RR.

Steam ablation versus radiofrequency and laser ablation: an in vivo histological comparative trial.
Eur J Vasc Endovasc Surg. 2013 Sep;46(3):378-82

Proof-of-principle study of steam ablation as novel thermal therapy for saphenous varicose veins.
vanden Bos RR, Milleret R, Neumann M, Nijsten T.

Great saphenous vein ablation with steam injection: results of a multicentre study.
Eur J Vasc Endovasc Surg. 2013 Apr;45(4):391-6

The use of a novel method of endovenous steam ablation in treatment of great saphenous vein insufficiency: own experiences.
Mlosek RK, Woźniak W, Gruszecki L, Stapa RZ.

Randomized clinical trial of endovenous laser ablation versus steam ablation (LAST trial) for great saphenous varicose veins.
vanden Bos RR, Malskat WS, De Maeseneer MG, de Roos KP, Groeneweg DA, Kockaert MA, Neumann HA, Nijsten T.
What is Steam Vein Sclerosis?

- Thermal Ablation by means of (slightly) compressed water steam
- GSV, SSV, tributaries, perforator veins
What they promise, and what we get

- 60 J/pulse
- 150 °C ?

Summary

Treatment of varicose veins by means of hot sterile steam is becoming more and more common.

Besides the data delivered by the CERMA® company producing the SVS® device, there is no information about the impact of steam on the vessels and about thermodynamic data regarding diameter of treated vessels.

In a series of lab experiments we measured temperature gradients alongside different sizes of idealized vessels after different numbers of steam pulses applied.

The maximum temperatures found here are significantly lower than published by the manufacturer and so far usual therapeutic concepts should probably be adapted to these observations.
Less maybe more?

Can the lower temperature offer an advantage?

Figure 2: Temperaturprofile bei veränderter zugeführter Energie (Dampfstöße / cm) bei 10mm Gefäßdurchmesser (n=5)

Figure 3: Temperaturprofile bei veränderter zugeführter Energie (Dampfstöße / cm) bei 4mm Gefäßdurchmesser (n=5)
New device generation
How to do.
Have a look into theatre...
Photos: R MILLERET
Before and 1 month after SVS

Photos: R MILLERET
Pros and Cons

**Pros**
- Really scar-free
- No damages on lymphatic vessels known
- No side effects of injected drugs vs. sclerotherapy
- Quick, if combined e.g. with RFA

**Cons**
- Expensive device and disposables (vs. VARADY hooks)
- Theatre set up
- Resorption time span
- Less reliable – of course! – than mechanic removal *what`s gone, that`s gone...*
Pitfalls, risks & complications

- Minor burns
  - Cave – esp. under general!
- Possible pain – travelling steam, under local

vs. mini-phlebectomy
So – what now?

Conclusion

• Good and reliable treatment option, highly appreciated by patients – many cases needed (reimbursement)
• Best if:
  combined with RFA/laser ablation of stem veins – single procedure

*Good and nice to have.*

*Not a must-have.*
Thank you, for your attention!