



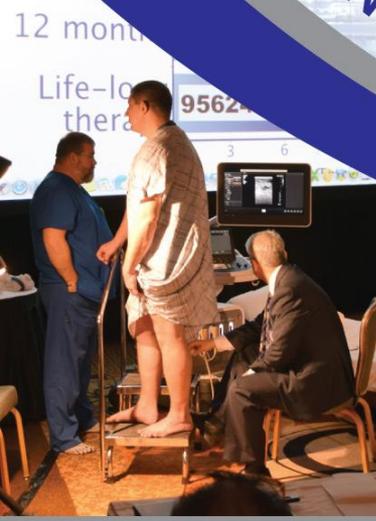
6th ANNUAL Venous Symposium New York

Primary and Secondary Reflux

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THE MOST INTERACTIVE VENOUS MEETING IN THE WORLD





Female 53 years old with varicose veins for over 15 years. Symptoms of left lower extremity pain, swelling and itching.

- **Documented episode of provoked DVT 7 years ago with duplex ultrasound extending from CFV to calf after gall bladder surgery.**
- **Treated for 6 months with anticoagulation and no recurrent DVT.**
- **No previous venous interventions.**
- **On medication for lipids and hypertension.**





**She has had recurrent ulceration in the last 2 years
Treated always with compression and
local wound care.**

**Ulcers healed after 2 months
of conservative therapy.**

**Her physician recommended
no intervention due to previous
DVT.**





The application of below knee ECS 30-40mmHg has been inadequate to prevent ulcer recurrence but offered some pain relief and reduced swelling.

The incidence of skin damage and ulceration is higher in patients with combined superficial and deep vein disease.

Recurrent ulceration is higher in patients treated with compression alone.

Barwell JR, et al. Comparison of surgery and compression with compression alone in chronic venous ulceration (ESCHAR study): randomised controlled trial. *Lancet* 2004; 363: 1854–59

Labropoulos N, et al. Patterns of Venous Reflux and Obstruction in Patients With Skin Damage Due to Chronic Venous Disease. *Vasc Endovascular Surg* 2007; 41; 33





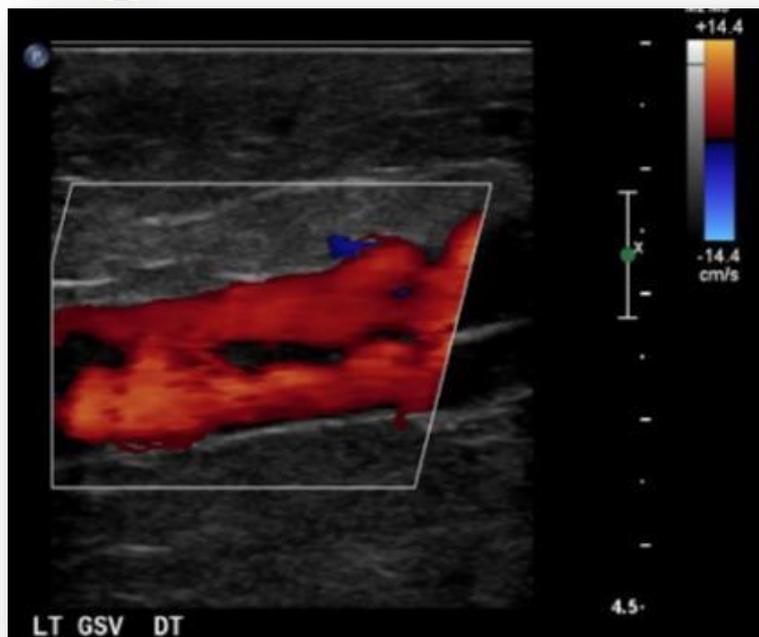
Physical exam

- Palpable pulses
- BMI 27
- Edema, skin damage and areas of healed ulcers

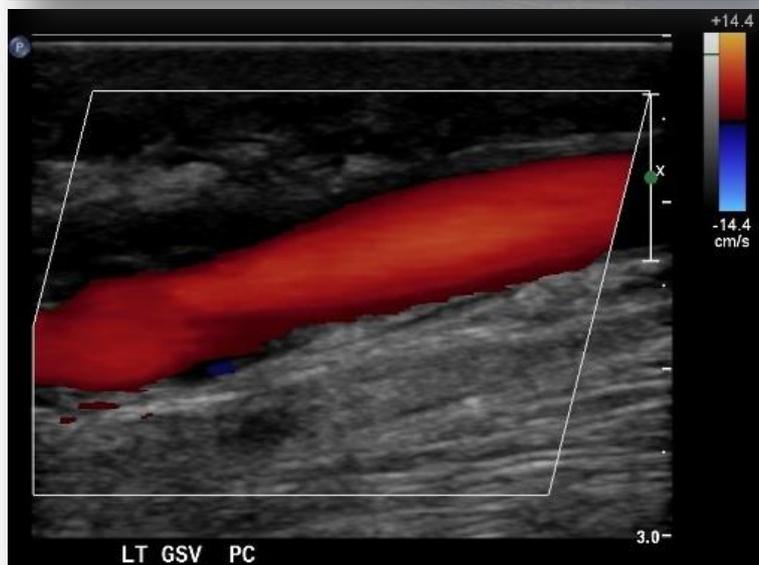
**She had varicose veins long before the DVT
but became worst after the DVT**

**Secondary disease progress much
faster than primary.**

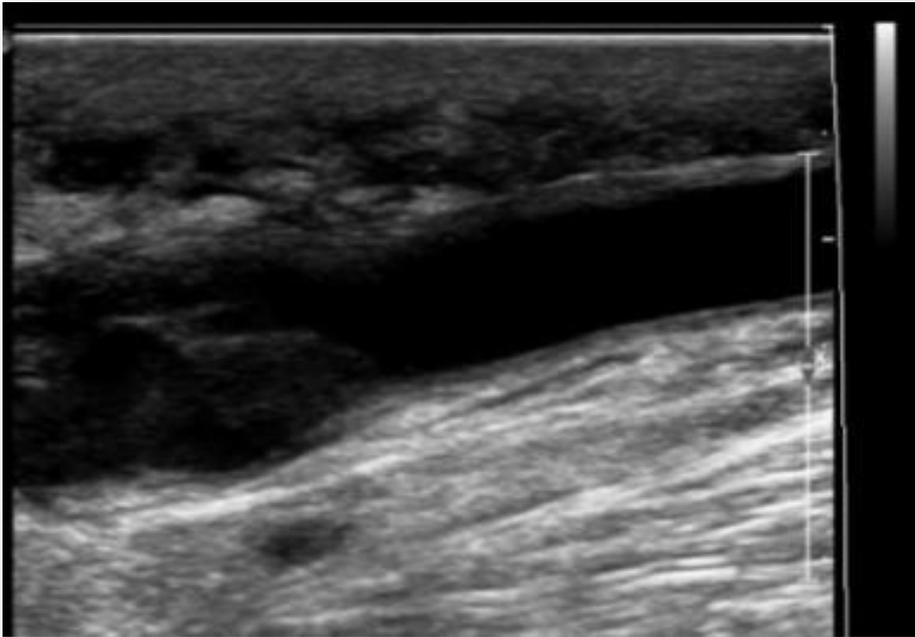




GSV thigh partial recanalization with reflux

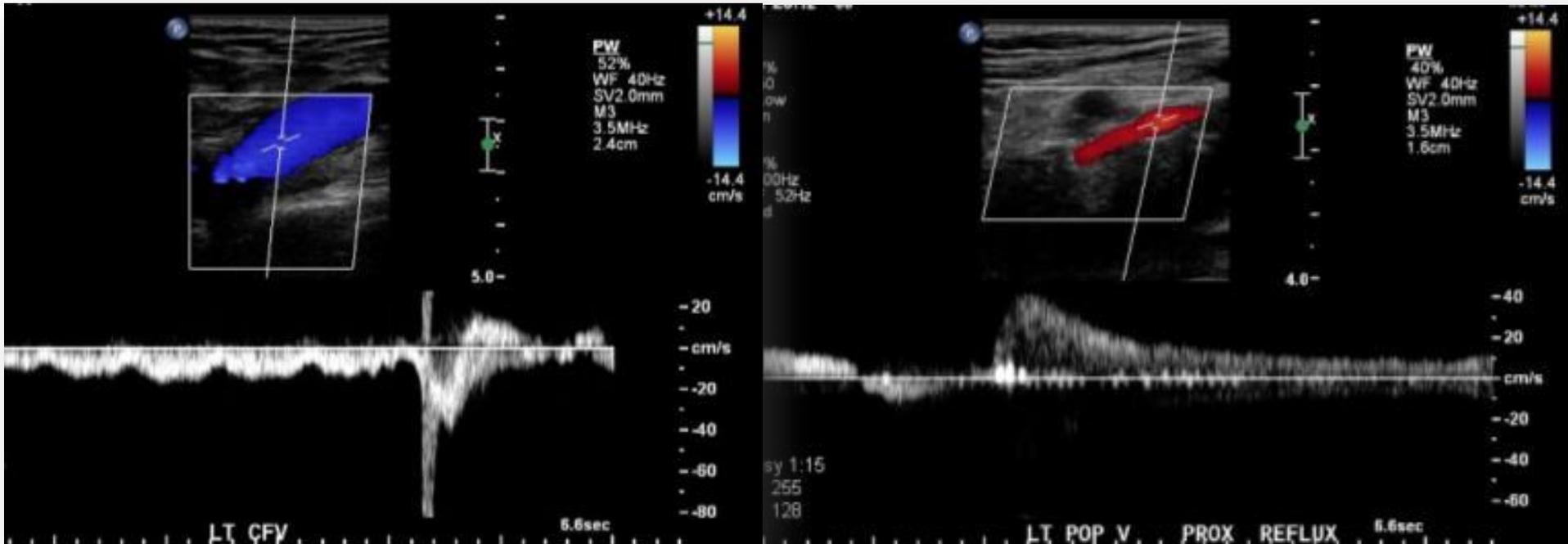


GSV proximal calf partial recanalization with reflux



GSV with intraluminal synechiae

Endovenous treatment of the post-thrombotic saphenous may be challenging and require use of different techniques to advance the catheter. Such techniques include: external manipulation, leg positioning, guide wire use or double puncture access.



CFV complete recanalization
No reflux
Iliac veins and IVC were normal

Popliteal vein reflux with
High velocity and long duration reflux.

In patients with mixed infrainguinal disease, the expectations of treatment results should be lowered due to the underlying deep pathology.



C2-5S EP+S AS+P+D PR+O

GSV reflux SFJ to ankle

Duration 2.2s to >5s

SSV: normal

Perforator veins

Lower thigh 4.1mm

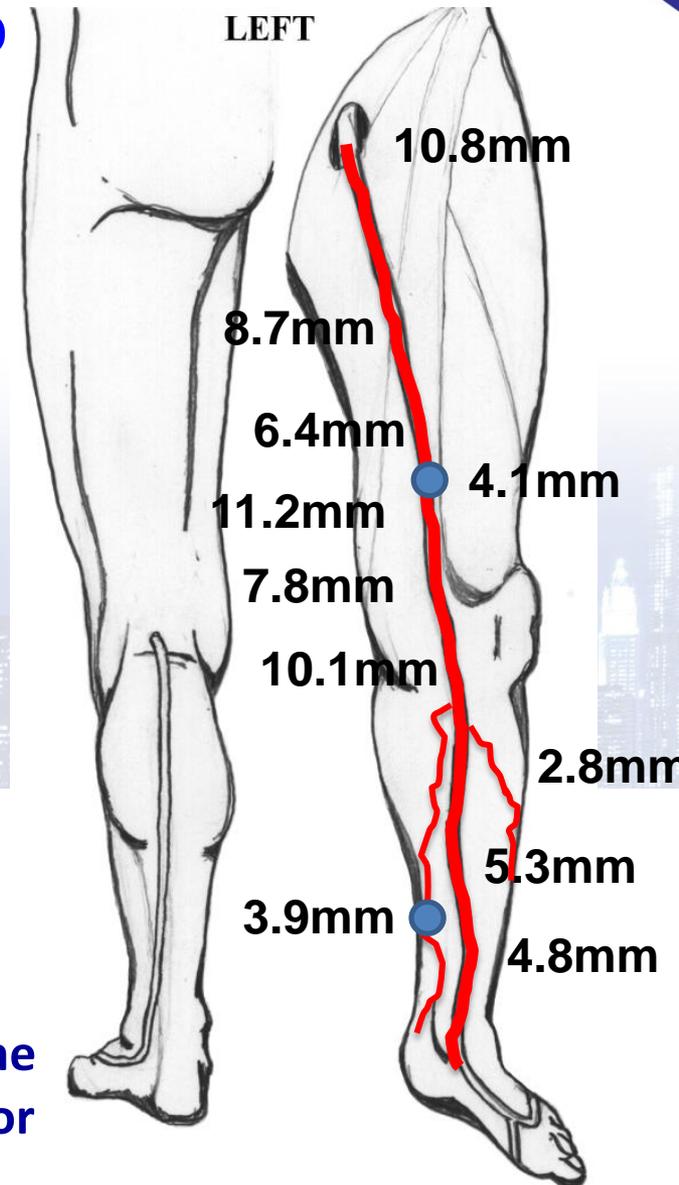
Lower calf 3.9mm

CFV: normal

FV: 1.4s reflux

POPV: >5s reflux

Complete venous ultrasound mapping demonstrates the distribution and extent of disease which is important for forming a treatment plan.





Treatment plan

RFA of the GSV

- 1. Upper calf to SFJ**
- 2. Ankle to SFJ**



**Ultrasound-guided
foam sclerotherapy of the
tributaries**

**GSV was ablated from 15cm below the knee to 3cm distal to SFJ
Using two cycles in all segments.**

**The tributaries were treated with ultrasound-guided
foam sclerotherapy. The treatment was repeated at one month
due to partial recanalization of the varicosities.**

Compression was maintained due to deep vein reflux.

**In patients with skin damage treatment of the
below knee saphenous vein may be required
and is well tolerated**



Follow-up

At 1 year follow-up the GSV and the tributaries remained occluded.

Popliteal vein had reflux similar to the baseline.

There was no ulcer recurrence and the patient has only mild swelling and pain.

Swelling and pain are controlled with elastic compression stockings.