Primary and Secondary Reflux
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.


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
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.

GSV with intraluminal synechiae
Popliteal vein reflux with high velocity and long duration reflux.

CFV complete recanalization
No reflux
Iliac veins and IVC were normal

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