Residual and Recurrent Varicose Veins
Female patient, 57 years old presented with symptomatic varicose veins in the right lower limb. She noticed the varicosities over 30 years ago.

**Signs and Symptoms:**

- Swelling
- Burning sensation
- Itching
- Heaviness

The veins are larger and the symptoms are worst at the end of the day. She gets relief with limb elevation.

The left lower limb is asymptomatic with spider and reticular veins that do not bother her.
She had 2 children with normal pregnancies and delivery. Her mother had varicose veins and skin discoloration. The left limb developed symptoms gradually after the second pregnancy.

She had SFJ ligation and phlebectomies 12 years ago.

The patient remained asymptomatic for a few years but over time her veins became larger.

She started developing new symptoms 7 years ago that are far more intense now.
Because of the worsening of her symptoms she went to a vascular specialist.

She was given compression stockings but she could not tolerated them well. She felt better with the stockings on however, there was no change in her limb after 3 months.

No other pertinent history, surgeries or medications.

The arterial exam was normal and she had no mobility problems.

**Venous ultrasound was ordered.**
Multiple varicose veins connect with the SFJ stump and CFV. Very tortuous course with many small channels of flow and larger veins anterior, superior and medial to CFV.
Reflux during Valsalva

Reflux after release of thigh compression

When reflux is induced with distal limb compression followed by sudden release the Valsalva maneuver is not needed. However, when the former is negative then the latter is performed.
Lympho-venous Networks with Reflux

Veins within the lymph nodes are tortuous and dilated. They are connected with incompetent tributaries of the GSV and AASV.

Other connections may occur through the CFV, FV and tributaries extending from pelvic veins.

The refluxing lympho-venous networks are more often seen after SFJ ligation with or without GSV stripping but can also be found without any previous procedure.
What most likely has happened?

- Development of new varicose veins
- Residual varicose veins from incomplete treatment
- Neovascularization due to SFJ ligation
- Neovascularization, residual and recurrent disease

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Proximal GSV Is Normal
GSV Reflux At Mid-thigh And Below

The GSV diameter at the proximal non-refluxing segment measures 3.6mm while the incompetent segment below has a larger diameter of 6.8mm.

The larger the GSV diameter the higher the chance for reflux. However, many patients with normal size or even small diameter GSV may have reflux.

Therefore, diameter should not be used to determine reflux.

GSV is enlarged posterior to the valve. The valve is frozen and does not move. **Focal dilations are common** but varicosities of the saphenous trunk are rare (<5%).

GSV is exiting the saphenous canal at the Knee and continues its course as a dilated accessory vein (7.5-8.3mm) that connects with many calf varicose veins.

The GSV is not seen from the knee to the lower calf. This is segmental GSV aplasia, which is often seen in the thigh and calf segments.

It is easy to confuse the accessory vein with the GSV. The accessory vein in this patient was outside the saphenous canal and run medial to GSV.

GSV Aplasia

Accessory Vein in The Calf is 6mm Below The Skin

High velocity reflux with long duration >5s
Thermal ablation is performed for veins that are ≥4mm from the skin in order to avoid
- skin burns
- induration
- feeling a palpable cord

Multiple Calf Varicosities with Prolonged Reflux

SSV has a small diameter

SPJ and thigh extension are dilated and have reflux.


The small “normal” GSV segment in the upper thigh is usually treated together with the refluxing segment below.
How this patient should be treated?

- Conservative treatment
- Phlebectomies
- Groin exploration and stripping
- Thermal ablation
- Thermal ablation, phlebectomies and sclerotherapy
- Sclerotherapy
- Modified stripping and phlebectomies


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Treatment Plan

RFA of the GSV and accessory saphenous vein
Multiple phlebectomies for the tributaries
Ultrasound-guided foam sclerotherapy for the neovascularization

Follow-up

Phlebectomies of two residual tributaries at 1 month
Ultrasound-guided foam sclerotherapy at 1, 8 and 23 months

At 36 months she was asymptomatic with a few reticular and spider veins.