



GE HealthCare

Versatility, portability and image quality:

The role of Versana Active in vascular care

Author: Zayed Meadows B.S., RVT

Clinical case of lower extremity venous insufficiency

2024

The following case was obtained by Zayed Meadows, B.S., RVT using a Versana Active.™

Zayed Meadows, B.S., RVT is a paid consultant for GE HealthCare and was compensated for participation in this case study. The statements by Zayed Meadows, B.S., RVT described here are based on her own opinions and on results that were achieved in her unique setting. Since there is no "typical" hospital and many variables exist, i.e. hospital size, case mix, etc., there can be no guarantee that other customers will achieve the same results.



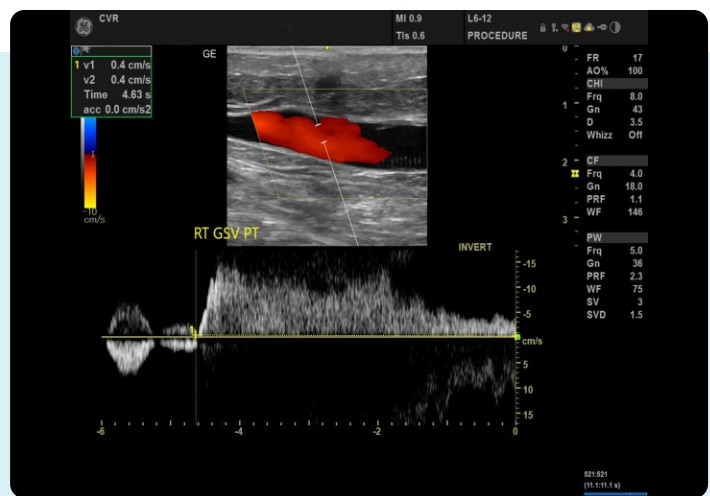
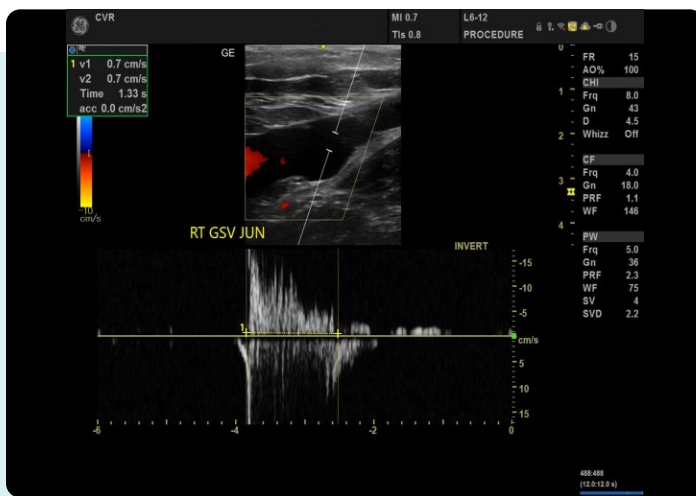
Lower extremity venous insufficiency

Physical presentation

- Patient presented with pruritus and superficial thrombophlebitis in the lower extremity along with associated symptoms of fatigue, leg cramping and tightness.
- Body Mass Index: 31.28 Kg/m² with a right thigh circumference of 59 cm and 61 cm on the left.
- Patient has a history of deep vein thrombosis (DVT) and pulmonary embolism (PE) in 2018.

Indication to consider ultrasound: Due to history of DVT with associated PE and associated symptoms, a vascular ultrasound of the lower extremity veins was indicated.

Clinical presentation



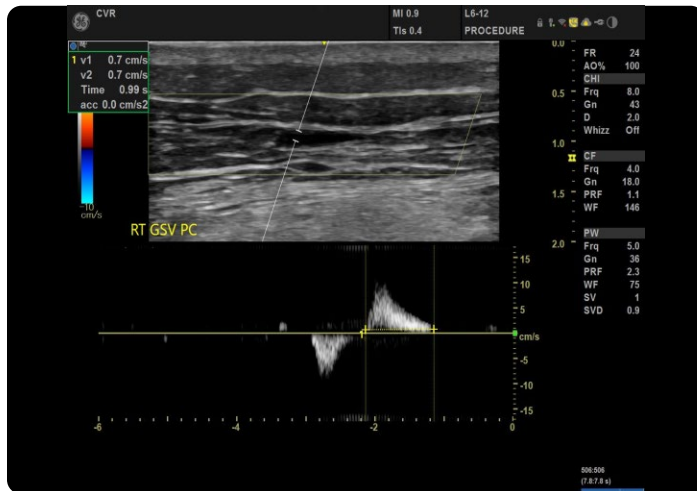
Longitudinal views of the right greater saphenous vein (GSV) spectral Doppler demonstrating insufficiency at the junction and proximal GSV.

Reflux time at right GSV = 1.33 s

Reflux time at proximal GSV junction = 4.63 s

Lower extremity venous insufficiency cont.

🔍 Clinical presentation cont.



Reflux is usually defined as retrograde flow lasting for >0.5 s in superficial veins, whereas <0.5 s is defined as normal or no reflux.

However, the reflux time can only be used to distinguish between a competent and incompetent vein segment and is therefore a qualitative evaluation.¹

Longitudinal views of the right proximal GSV with spectral Doppler demonstrating insufficiency/reflux.

Reflux time at right GSV = 0.99 s

How and why of venous insufficiency

Chronic venous disease (CVD) is a condition affecting the lower venous system and may present with various morphological and functional abnormalities. Risk factors include female gender, advanced age, obesity, prolonged standing, positive family history, and parity. The progression of CVD may be more common in individuals who are overweight and have a history of deep vein thrombosis, and the presence of deep and superficial venous reflux may be associated with new varicose veins. Clinical presentations of CVD are varied and do not necessarily correspond to its clinical severity. Symptoms are also unspecific and are frequently mistaken for other diseases. CVD is a benign disorder but can be correlated with venous thrombosis or bleeding.²

Lower extremity venous insufficiency *cont.*

Key findings

- Ultrasound showed superficial venous insufficiency in both lower extremities.
- There were no key features that were used to enhance the image quality.
- Ultrasound findings allowed physician to determine the patient would benefit from superficial venous intervention.
- Radiofrequency ablation (RFA) is a procedure performed to close off the GSV vein with the incompetent valve. As a result, the blood can no longer flow backwards through this vein and is forced to flow through the veins that remain open, in the proper direction.

Conclusion

This example shows the portable Versana Active ultrasound system provides versatility while maintaining image quality comparable to that of a traditional ultrasound console.

With the use of Versana Active, we were able to achieve optimal image quality in technically difficult patients, without time-consuming image manipulation. It has the sensitivity to demonstrate both color and spectral Doppler of deeper vessels without image degradation or delays in the frame rate with triplex mode.

Right venous lower extremity imaging with Versana Active allowed for superior imaging and accurate documentation of venous refill time measurements.

The portable Versana Active ultrasound system does not pose limitation with deep vein imaging vascular exams.



Zayed Meadows B.S., RVT

Registered Vascular Technologist

Zayed is the director of The Vascular Lab at the Center for Vein Restoration (CVR) where she oversees a team of sonographers who assist physicians in the diagnosis and treatment of venous disease through the use of ultrasound. Before moving to CVR in 2007, she worked as Vascular Technologist from 2000 to 2007. Zayed is a graduate of the University of Tennessee at Chattanooga (USA) with a B.S. in Exercise Science, Cardiopulmonary Rehab. She is trained in various modalities of vascular ultrasound, which consist of arterial, transcranial doppler, carotid, venous, and visceral studies.

1. De Maeseneer, M., Pichot O., Cavezzi A., Earnshaw J., van Rij, A., Lurie, F., Smith, P.C. (2011). Duplex Ultrasound Investigation of the Veins of the Lower Limbs after Treatment for Varicose Veins – UIP Consensus Document. *ESVS Journal, Eur J Vasc Endovasc Surg* 42, 89-102.
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10648055/>

Products mentioned in the material may be subject to government regulations and may not be available in all countries. Shipment and effective sale can only occur after approval from the regulator. Please check with local GE HealthCare representative for details.

Versana Active is a trademark of GE HealthCare. GE is a trademark of General Electric Company used under trademark license.

© 2024 GE HealthCare.

February 2024
JB28156XX



GE HealthCare