

On site selection for saphenous diameter measurement and access



We read with interest the article by Hwang et al¹ entitled "Regression of varicose veins after cyanoacrylate closure of incompetent great saphenous veins without a localized concomitant procedure" in the *Journal of Vascular Surgery: Venous and Lymphatic Disorders*.

Venous insufficiency of the lower extremity is a chronic and progressive disease with a high degree of loss of work productivity. Doppler ultrasound is the best diagnostic tool to determine the cause of lower extremity venous insufficiency, anatomic level of reflux, and vein diameters.² Glue ablation is a new and promising technique for treatment of great saphenous vein (GSV) or small saphenous vein (SSV) insufficiency.³

In this study, we have doubts about superficial saphenous vein diameters. The diameter measurement level of GSV for intervention indication is not mentioned, such as thigh, midthigh, or saphenofemoral junction. In the literature, GSV diameter measurement at the proximal thigh revealed higher sensitivity and specificity than at the saphenofemoral junction to predict reflux and clinical class.⁴

In the Methods section, the authors noticed that "the targeted GSV was punctured under ultrasound guidance at the lowest level possible." How did the authors decide the access site? Was there a cutoff diameter value? Mean GSV diameter was given in Table I, and five patients had concomitant intervention for SSV also. What was the mean diameter of SSV?

The authors evaluated progression of the varicose veins after intervention. Did the authors exclude the patients who had deep venous thrombosis history and perforator vein insufficiency? Because these reasons may affect the recurrence of varicose veins.⁵ We congratulate Hwang et al for their valuable and safe treatment methods of incompetent superficial saphenous veins. We would like to hear the authors' opinions on these matters.

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<https://doi.org/10.1016/j.jvsv.2019.03.022>

Reply



We appreciate Dr Aydin and colleagues' comments and questions, which allow us the opportunity to both clarify and strengthen our study.¹

Despite the description of the diameter of the great saphenous vein (GSV) as 6.9 ± 1.8 mm (range, 4.0-13.0 mm), we did not specify where it was measured. The International Union of Phlebology consensus document recommended two anatomic locations for GSV diameter measurement: 3 cm below the saphenofemoral junction (SFJ) and midthigh.² In our institute, pre-procedural measurement of GSV diameter is taken at three sites: proximal thigh (3 cm below the SFJ), mid-thigh (approximately 15 cm below the SFJ), and distal thigh (around the knee joint). The GSV diameter described in the manuscript is based on the measurement at 3 cm below the SFJ. Mendoza et al³ mentioned that GSV measurement at 15 cm distal to the groin (proximal thigh) shows better correlation with reflux and also higher sensitivity and specificity for clinical disease severity. This corresponds to the midthigh from our data set, with the GSV diameter at midthigh level measuring 4.9 ± 1.1 mm (range, 3.0-8.6 mm).

In the presence of varicose veins, we attempted to puncture the GSV from at least 5 cm below the lowest varicose vein orifice into the GSV. However, it was possible in only 36 limbs (64.3%) to achieve GSV access at this location. Access site was not determined on the basis of GSV diameter. Instead, our goal was to cover as many varicose vein orifices as possible during GSV closure.

Small saphenous vein (SSV) diameter was 5.7 ± 1.2 mm (range, 3.8-7.0 mm) in five limbs in which closure of both

GSV and SSV was achieved during the same treatment session. We measured the diameter of the SSV at 3 cm distal to the saphenopopliteal junction, as proposed in the International Union of Phlebology consensus document.²

We can confidently report that we performed full ultrasound evaluation regarding deep venous thrombosis before the procedure and excluded patients who showed a history of deep venous thrombosis. Thorough ultrasound evaluation for the detection of thigh and calf perforator insufficiency was performed as well. All patients included in the study were free from perforator vein reflux.

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<https://doi.org/10.1016/j.jvsv.2019.06.001>