

# Does Radiofrequency Ablation of the Great Saphenous Vein Abolish Popliteal Vein Reflux

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*Anil Hingorani, MD, Brooklyn, NY*

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## **Background**

Treatment of the great saphenous vein (GSV) is often undertaken even in the presence of concomitant deep venous reflux. The literature provides conflicting data regarding the abolishment of deep venous reflux after GSV stripping. Radiofrequency ablation (RFA) is a novel endovascular technique to treat the GSV less invasively. RFA is most often performed without ligation of the saphenofemoral junction. In addition, to avoid nerve injury and other complications in the leg, RFA is often restricted to the thigh segment. We investigated whether this simplified procedure could abolish or minimize popliteal venous reflux.

## **Methods**

We compared the findings of popliteal veins reflux in 100 extremities treated with RFA for GSV valvular insufficiency. All these patients had pre- and post-RFA venous ultrasonographic (US) examinations. The deep veins were examined for venous obstruction prior to RFA and for potential development of deep venous thrombosis after the procedure. The popliteal vein was imaged with the patient standing and/or in an inclined position with sufficient dilatation of the calf, thigh and superficial veins. Duration of popliteal venous reflux was determined after proximal compression and/or release of distal compression. Reflux or valve leakage longer than 500 ms were included in this analysis. Reflux longer than 1,000 ms was deemed severe reflux. The prevalence of reflux before and after RFA were compared.

## **Results**

Of the 100 extremities, a finding of popliteal vein reflux decreased from 65% preoperatively to 25% post-RFA. Of the 54 extremities with mild preoperative reflux, 43 (80%) had no reflux postoperatively and 11 remained with reflux. In contrast, mild postoperative reflux was detected in 9 of 35 (26%) extremities without preoperative popliteal vein reflux. Of 9 extremities with severe preoperative popliteal reflux, 6 (67%) had no reflux postoperatively, 1 had mild reflux and 2 remained with severe reflux. The two extremities with recanalized popliteal veins remained refluxing.

## **Conclusions**

RFA of the GSV thigh segment may improve conditions for popliteal vein valve closure, thus eliminating mild reflux or valve leakage. Even reflux lasting longer than 1,000 ms may be corrected. Recanalized, post-thrombotic popliteal vein segments without patent valves remained refluxing.