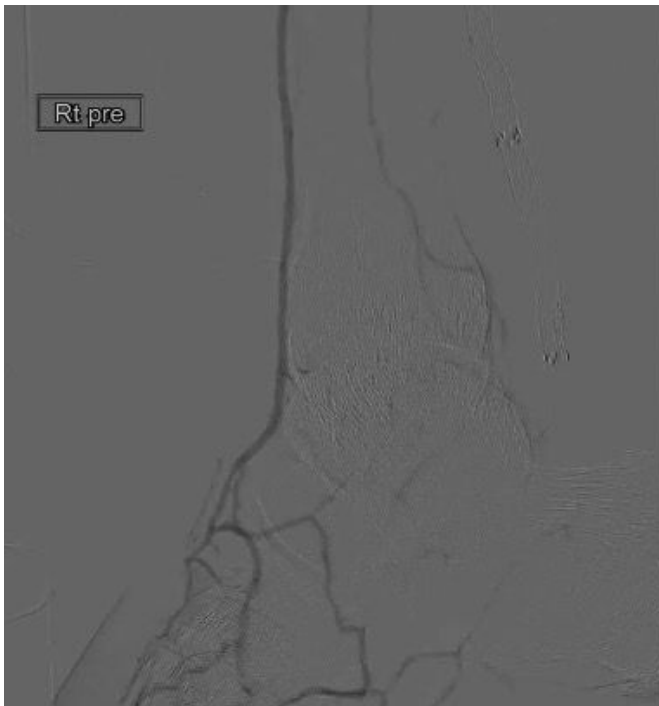


# Wingman™ Crosses a Thrombosed Venous Loop

## CASE HISTORY

A 77-year-old male presents with a pertinent past medical history of peripheral arterial disease, critical limb-threatening ischemia, paroxysmal atrial fibrillation, type II diabetes, hypertension, hyperlipidemia, and previous smoking. At his 3-month follow-up visit, after a deep venous arterialization (DVA) procedure to the posterior tibial (PT) artery, ultrasound indicates patent peroneal and anterior tibial (AT) arteries, occluded PT artery, plantar and DVA via the PT. Patient is classified as Rutherford Class 6 with foot and toe non-healing ulcers. The patient had been treated with percutaneous DVA 3 months prior, secondary to end-stage plantar disease.

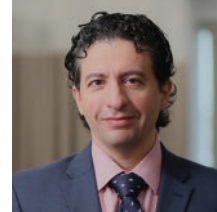


Baseline angiography

## PROCEDURE

Access to the right common femoral artery was obtained using ultrasound and a 5Fr Pinnacle Precision Access System® Sheath was placed. A diagnostic angiogram was performed. Stenoses were found in the popliteal artery and tibioperoneal trunk with the right PT 100% stenosed into the PT vein. The posterior tibial vein was visualized under ultrasound and access was obtained with a .018 guidewire and sheath placed. Access was obtained in an occluded portion of the plantar vein beyond the self-expanding covered stent placed from the PT artery to the lateral plantar vein. A Navicross® support catheter and Command™ guidewire were advanced from above to the PT, while the Gladius™ 0.018 guidewire was able to advance from the vein to the Navicross. The Navicross was then advanced all the way to the PT vein sheath. The Command guidewire ran from the arterial side through the PT vein and exited through the sheath placed in the lateral plantar vein.

## PHYSICIAN



### Fadi A. Saab

MD, FASE, FACC, FSCAI

Interventional Cardiologist, Medical Director of Endovascular Therapy, Medical Director of Cardiovascular Research, Michigan Outpatient Cardiovascular Institute

*"With the increasing complexity of arterial and venous occlusions, the Wingman offers a solution to some challenging clinical scenarios. The Wingman is an extremely important tool for any clinician tackling anatomically challenging cases."*

Dr. Saab completed his residency at Wayne State University. He went on to complete a Cardiovascular Fellowship through Tufts University School of Medicine in Massachusetts, followed by two years of cardiovascular research at the University of Michigan. Dr. Saab is regarded as a leader in the field of peripheral vascular disease and has authored many papers on the topic. He also trains his peers and lectures on the strategic skills involved in treating critical limb-threatening ischemia.

## PRODUCTS USED



REFLOW  
**wingman™**

## Wingman Enables Crossing of Thrombosed Lesion

A manual thrombectomy was performed in the PT artery and the PT vein. Balloon angioplasty was performed followed by intravascular ultrasound (IVUS). Further treatment was performed with laser atherectomy and ballooning of the PT artery and the PT vein. The atherectomy was performed to address restenosis on the arterial side. After treatment of the arterial segment of the DVA and thrombectomy of the venous segment of the DVA, we removed the venous sheath and advanced our Command wire to the distal venous circulation in the foot.

The next step was to perform balloon angioplasty to treat the venous pedal loop and achieve arterialization to the ischemic tissue in the foot. No balloon or catheter would advance over the wire into the plantar venous circulation. We suspect that this was related to severe fibrosis/restenosis of the lateral plantar vein beyond the stented segment. Without adequate balloon angioplasty of the segment, the procedure would be deemed unsuccessful, and the patient would lose his limb. At this point, we advanced a .018 Wingman™ over the wire. By activating the bevel tip, the Wingman was able to navigate the fibrotic distal venous loop. After crossing, the Wingman was then replaced by a 3.5mm X 240mm Jade® balloon. High-pressure inflation was done and ultimately a self-expanding Supera™ stent (4.5mm x 60mm) was placed to treat the severe recoil, despite aggressive balloon angioplasty.



Post angioplasty

### CASE CONCLUSION

After treatment of the full venous pedal loop, full percutaneous arterialization was regained. The use of the Wingman device in this capacity on the venous side is a novel concept. We believe this is the first case reported in the literature describing usage of the Wingman device in treating and crossing chronic venous occlusions. We are confident this novel method can be applied in other clinically challenging scenarios.