

Radiofrequency wire for the recanalization of central vein occlusions that have failed conventional endovascular techniques

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INTRODUCTION

This single center retrospective review evaluated the feasibility and safety of using the PowerWire[®] Radiofrequency (RF) guidewire to recanalize central venous occlusions (CVOs) in cases where conventional endovascular recanalization had failed.

METHODS

Forty-three benign, chronic, but symptomatic CVOs were treated with RF wire puncture and subsequent stent implantation in 42 patients.

- CVO recanalization was first attempted with a combination of hydrophilic guide wires and semi-curved catheters. Only after an inability to cross the lesion was PowerWire RF guidewire used.
- Six subclavian, 29 brachiocephalic, and 8 superior vena cava CVOs were recanalized with the PowerWire RF guidewire.*

Technical success: Successful crossing of the obstruction using PowerWire RF guidewire with subsequent balloon angioplasty and stent placement.

Clinical success: The absence of symptoms and presence of functional arteriovenous shunts in patients who had surgical dialysis access at the time of follow-up after RF wire recanalization.

RESULTS

- All 42 patients (100%) had successful recanalization facilitated by the PowerWire RF guidewire, with all 43 lesions (100%) achieving technical success.
- Follow-up showed that 40 of 42 patients (95.2%) had patent stents at 6 months, and clinical success at 9 months.
- Unrelated to the use of RF wire puncture, there was one adverse event where a patient experienced cardiac tamponade during balloon angioplasty requiring a percutaneous drain catheter.

DISCUSSION

- The PowerWire RF guidewire can be used to recanalize symptomatic and chronic CVOs when traditional endovascular techniques have failed.
- The RF wire should only be advanced a few millimeters during each RF application and targeted towards a simple one loop snare at the opposite side of the venous occlusion. Alignment of the RF wire tip and snare should be verified in anteroposterior, RAO, and LAO views.

**Disclaimer: this study includes both on-label and off-label use of the PowerWire[®] RF Guidewire. Before use, consult product labels and Instructions for Use for Indications for Use, Contraindications, Warnings, Precautions, Adverse Events and Directions for Use.*

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