

# Management of Central Venous Stenosis and Occlusion in Dialysis Patients

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## HIGHLIGHTS

This article reviews the diagnosis and management of central venous occlusions (CVOs) in end-stage kidney disease on hemodialysis patient populations. In addition, the article details endovascular techniques to reestablish central vein patency.

- Cross-sectional imaging may be used to evaluate central venous outflow and anatomic characteristics of the CVO prior to the procedure. Following diagnostic venography to map venous outflow, standard wire and catheter attempts are made to cross the occlusion.
- In cases where standard recanalization techniques are not successful, the PowerWire® Radiofrequency (RF) Guidewire or sharp needle recanalization may be employed. The RF guidewire vaporizes a channel through the occlusion toward a distal target (e.g. snare) with pulsed RF energy; the wire should be advanced slowly with intermittent oblique imaging to confirm an appropriate path. In the authors' opinion, the PowerWire RF Guidewire is less traumatic and offers more control compared to sharp recanalization.
- Venous access should be confirmed prior to angioplasty. Balloon-expandable covered stents are preferred in central brachiocephalic and superior vena cava regions, while self-expandable covered stents are preferred in the axillary and peripheral brachiocephalic veins.
- Equipment for complication management, including chest tubes, large balloons and stent grafts for tamponade, and pericardial drainage catheters, should be made available during the procedure.

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