WELCOME *To the*

2026 SYMPOSIUM

Central Venous Stenosis in Dialysis Access

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5/21/26

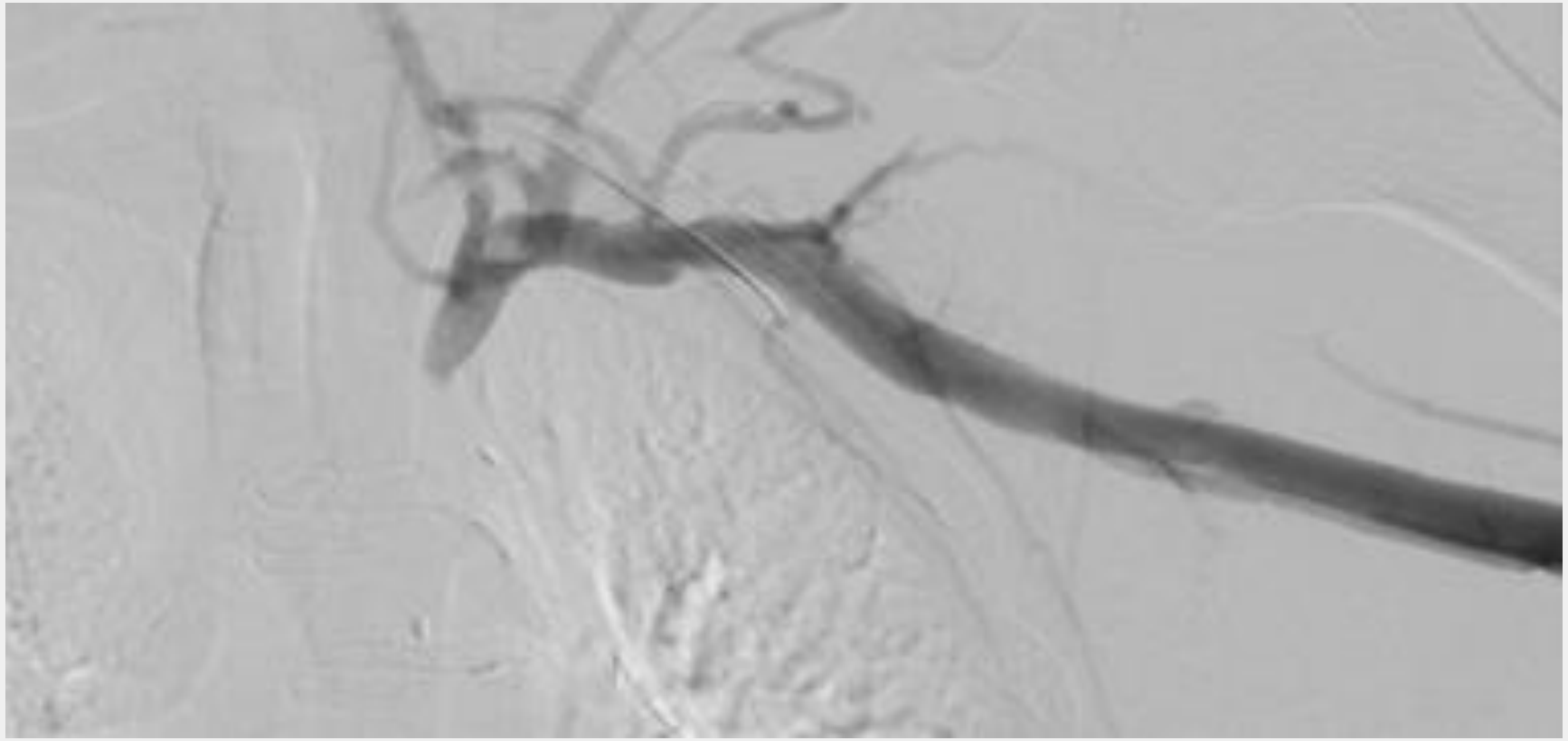
Disclosure

Medical Advisory Board: Boston Scientific

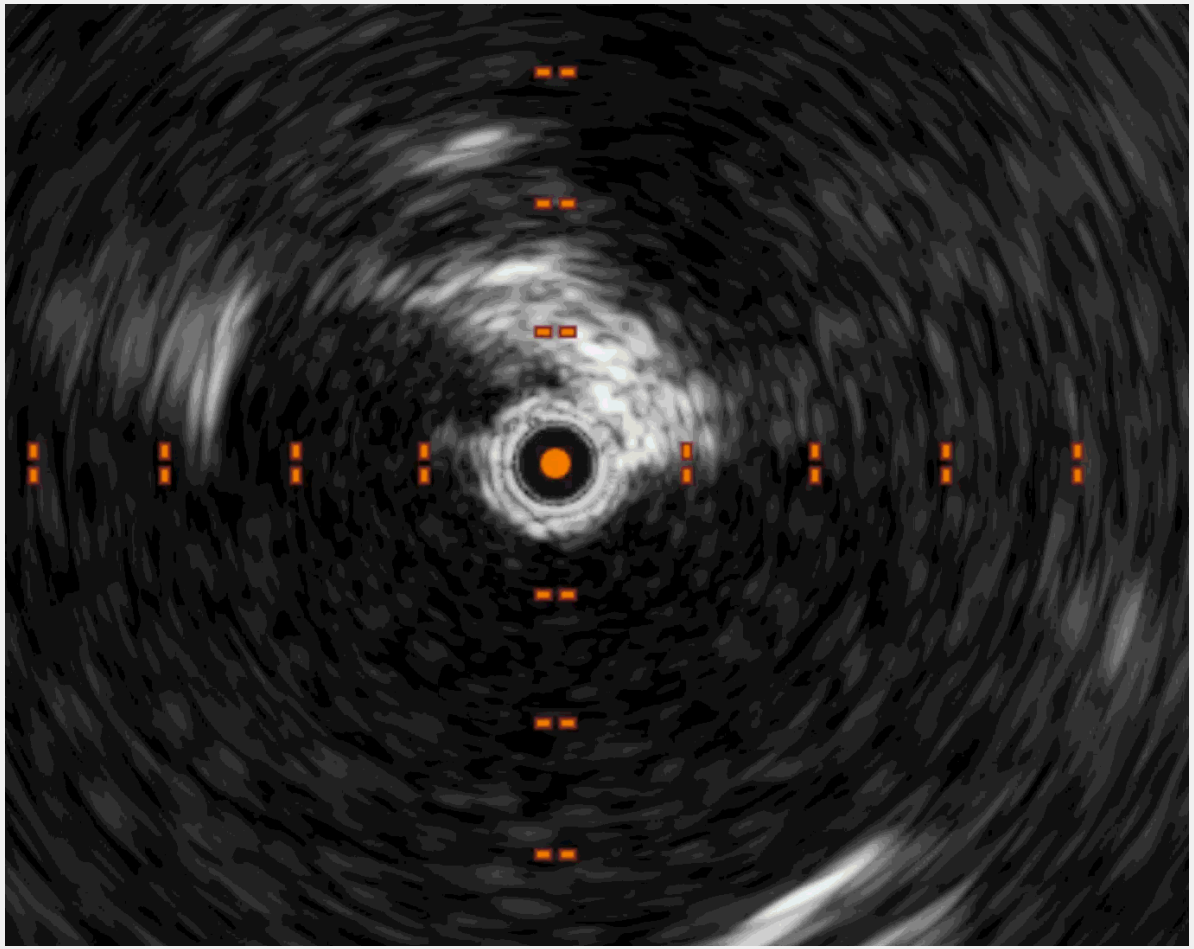
Ad Hoc Consulting: Cook Medical, Becton Dickinson, Angiodynamics, DeepSight Technology

Central Stenosis (and Occlusion) Etiology

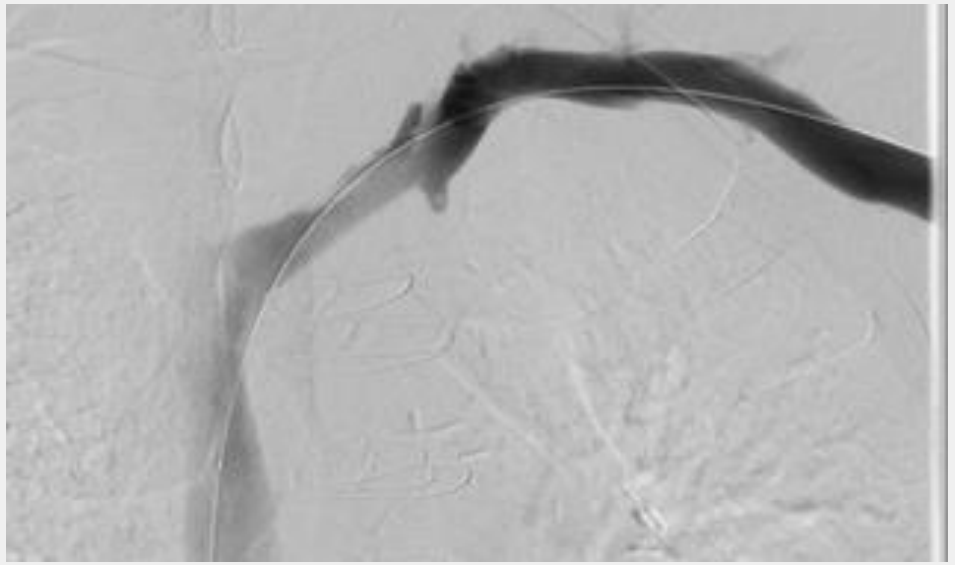
- Neointimal Hyperplasia
- Prior CVC
- Extrinsic Compression
  - Bony compression
  - Aortic ectasia



Clinical Significance



- Maturation Arrest
- Prolonged Bleeding
- Extremity Swelling
- (Secondary Stenosis development?)



Endovascular Management

- Crossing
- Hydrophilic guidewire
- Revascularization
- Angioplasty
- Stenting (BMS vs Stent Graft)
- Considerations
- Limited in extrinsic compression



Advanced Recanalization

- Sharp Techniques
- Back end of GW
- Rigid Sheath
- Long puncture needles
- RF Wire



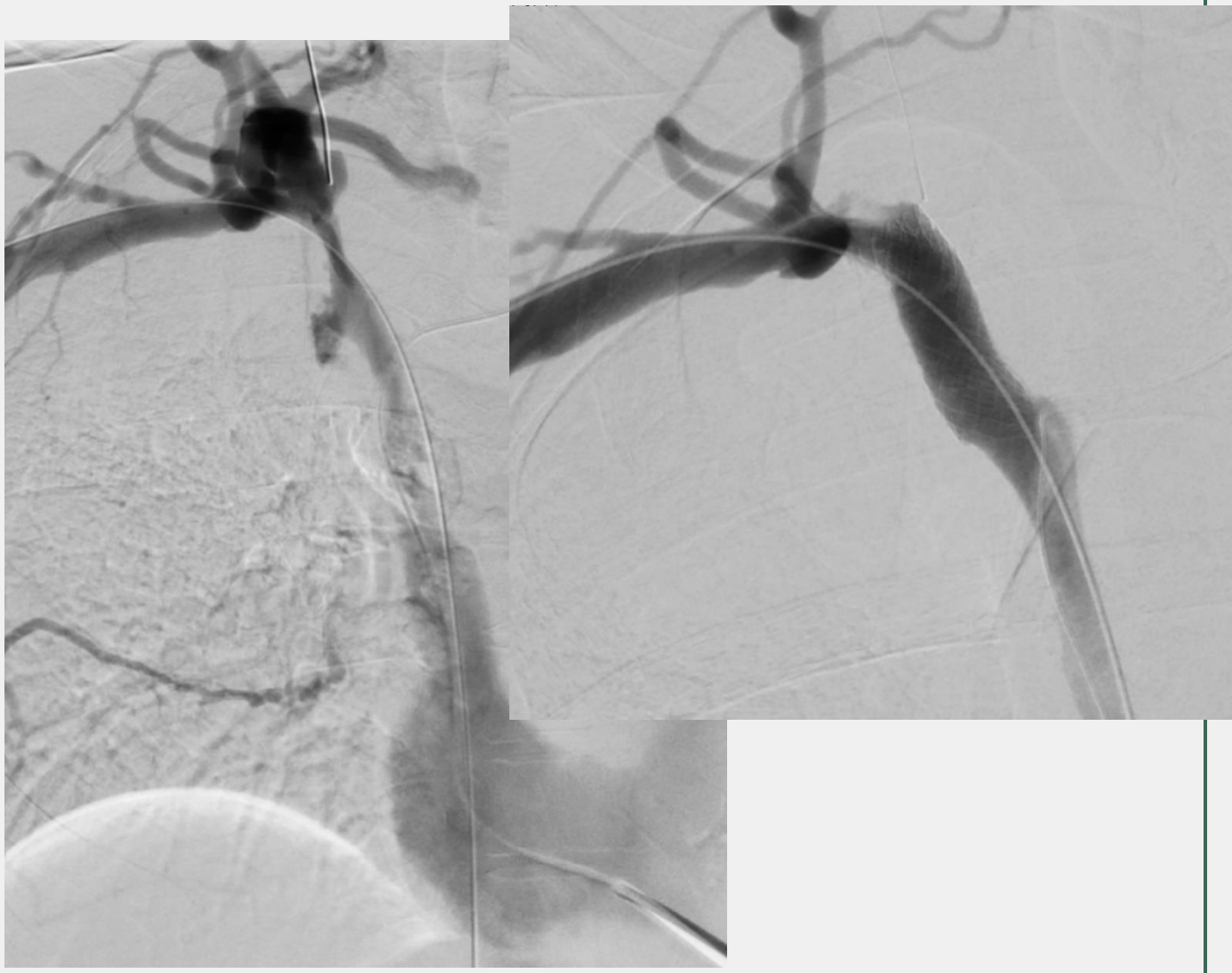
Endovascular Revascularization

- Angioplasty or Stenting in Central Vein Disease
- Wu et al. 2020 – Metanalysis found no difference in primary patency and superior primary assisted patency for PTA group
- Razavi et al. 2023 – Metanalysis The 6- and 12-month primary patency rates for PTA were 50.9% and 36.7%, respectively. For stent placement, the 6- and 12-month primary patency rates were 69.7% and 47.9%, respectively. No difference in primary patency at 12 mos

- Stent grafts may (likely) have superior primary patency in the central veins
  - Limited options based on size

What about rupture?

- Its uncommon!
  - Incidence as low as 0.39% (out of 3000 patients), most seen with venous occlusion.
  - Management
    - Balloon Tamponade
    - Stent grafting – large stents available
      - VBX, Wrapsody, Fluency
    - Pericardiocentesis, Thoracentesis, Thoracostomy



Surgical Approaches for Central Venous Disease

- Thoracic Outlet Decompression (Median Claviculectomy, 1st Rib Resection)
  - Precursor to endovascular stenting
- Veno-venous Bypass (Ax-Ax, Ax-Fem, Ax-Atrial)
- HeRO with central recanalization





Citation

Kim YJ, Yang SB, Lee WH, Kim YJ, Lee JM, Goo DE et al. Central vein rupture during percutaneous transluminal angioplasty for central vein stenosis or occlusion in haemodialysis patients. S Afr J Rad. 2017; 21(1), a1205. https://doi.org/10.4102/sajr.v21i1.1205

Tabriz DM, Arslan B. Management of Central Venous Stenosis and Occlusion in Dialysis Patients. Semin Intervent Radiol. 2022 Feb 18;39(1):51-55. doi: 10.1055/s-0041-1742152. PMID: 35210733; PMCID: PMC8856783.

Wu TY, Wu CK, Chen YY, Lin CH. Comparison of Percutaneous Transluminal Angioplasty with Stenting for Treatment of Central Venous Stenosis or Occlusion in Hemodialysis Patients: A Systematic Review and Meta-analysis. Cardiovasc Intervent Radiol. 2020 Apr;43(4):525-540. doi: 10.1007/s00270-019-02383-7. Epub 2020 Jan 3. PMID: 31900506.

Razavi MK, Rajan DK, Nordhausen CT, Bounsanga J, Holden A. Objective Performance Goals Based on a Systematic Review and Meta-Analysis of Clinical Outcomes for Bare-Metal Stents and Percutaneous Transluminal Angioplasty for Hemodialysis-Related Central Venous Obstruction. J Vasc Interv Radiol. 2023 Oct;34(10):1664-1673.e3. doi: 10.1016/j.jvir.2023.05.036. Epub 2023 Jun 9. PMID: 37302473.