Balloon angioplasty and stent-grafts in my treatment for hemodialysis access salvage

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Disclosures

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I have the following potential conflicts of interest to report:

Consulting/ Speaker:

• Philips Medical
• Medtronic
• W.L. Gore and Associates
Dialysis Access Stenosis

• Neointimal hyperplasia

6 Month Primary Angioplasty Patency

• **AVG Venous Anastomosis**
  23-46%

• **AVF**
  50%


Bare Metal Stents

Explanted Vein with BMS

Courtesy of Tom Vesely, MD
Dialysis Access Stent Grafts

• Physical barrier to neointimal hyperplasia

• Essential for recoil and rupture
AV Graft Stenosis


Post angioplasty at venous anastomosis
Improved flow and thrill post venous anastomosis
Viabahn stent-graft
AV Fistula Stenosis
Thrombosed Brachiocephalic AVF
• 50 patients treated with Viabahn for recoil/rupture post PTA
• Compared to historical cohort of 50 BMS, 50 PTA at Cephalic arch

Transposed Basilic Vein Arteriovenous Fistula

Inset: “swing point” depicting the basilic vein mobilization from the deeper location to the superficial tunnel.

Cephalic v.
Basilic v.
End-to-side anastomosis
Brachial a.
37 patients
6 Month Primary Patency:

Pre-Stent Graft
• 29%

Post Stent-Graft
• 57%
Proximal Swing Site
Stenosis
Recoil post angioplasty
Left brachiobasilic AV fistula - No stenosis seen

Proximal swing site
stent-graft
Radiocephalic Arteriovenous Fistula (Brescia-Cimino)
Juxta-Anastomosis Stent Graft Placement

• Small Studies

• Suggestive of safe, favorable outcomes

• Used in salvage situations


Recurrent Juxta-Anastomosis Stenosis and Thrombosis

Cephalic outflow vein

Radial Artery
My Approach to Stenosis

• AV Grafts
  • Primary treatment: Stent graft at venous anastomosis
    • Thrombosed and Patent AV Grafts
    • Evidence Based: Multiple RCTs
  • Assess integrity of the entire circuit
My Approach to Stenosis

• AV Fistula

Cephalic Arch
  • Stent-graft first line (More data is needed)
  • Encouraging drug coated balloon data

Proximal Swing Site of Basilic Vein AVFs
  • Angioplasty first line
  • Stent-grafts for high-grade lesions, recoil, or recurrent lesions
  • Encouraging drug coated balloon data

Juxta-anastomosis
  • Angioplasty first line
  • Stent-grafts or surgery for recurrent lesions or salvage.
  • Encouraging drug coated balloon data
My Approach to Thrombosis: **Stent-Graft**

- **AVG**
  - Stent-graft at venous anastomosis

- **AVF**
  - Stent-Graft at culprit lesion

- Consideration for future access options
Drug Coated Balloons Versus Stent-Grafts?
Thank you from Daytona Beach, Florida!