

Fistula Maturation: Going Beyond Creation to Cannulation

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Disclosures

None

Maturation is Flow Modulation

How much flow

Where is the flow



Physiological

Brachial artery
>500ml/min

Target Vein
>4mm

Clinical

Brachial artery
>800ml/min

Target Vein
>5mm
>500ml/min

ASDIN White Paper: Patient selection, education, and cannulation of percutaneous AV Fistulas. JVA 2019

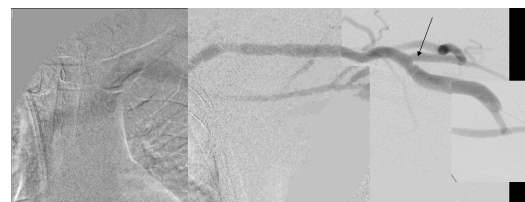
Accessory Branches

Is it truly a competing branch??

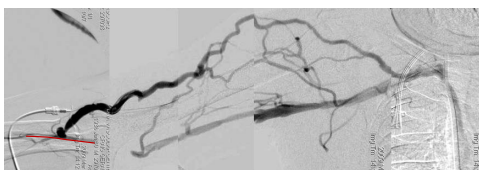
Downstream vein sizing
Ability to cannulate

If no impact, leave it alone

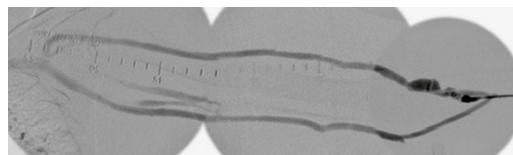
Would you address it?



Would you coil/ligate?



Dual Outflow endoAVF



Dual Median Cubital



Balloon Assisted Maturation

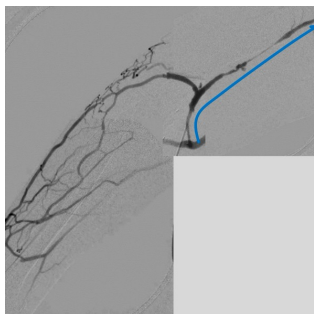
Initial visit: treat critical stenoses

Visit 2: 7-10 days later
+1-2 mm PTA

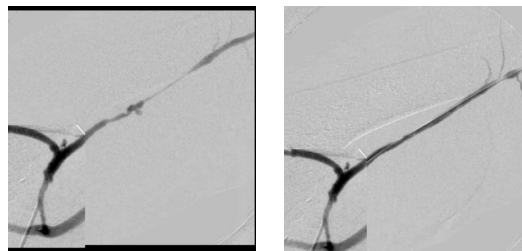
Visit 3: 10-14 days (US then PTA)
?recoil
?upsized +1mm
?accessory branches

Access: AVF or Radial artery

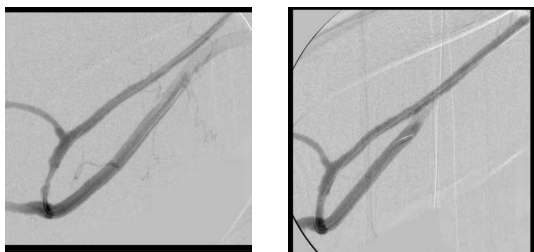
6mo old "almost ready" BCF



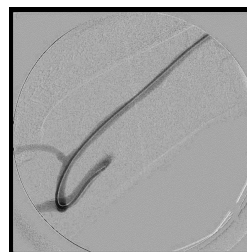
Visit 1



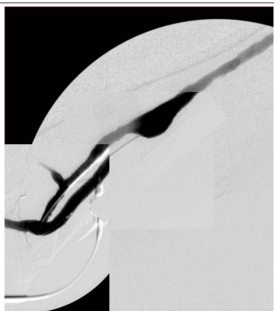
Visit 2: 10 days



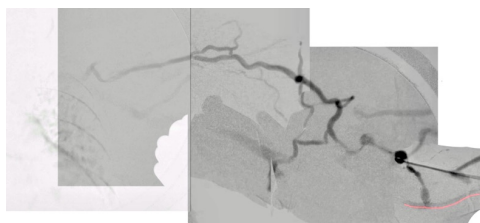
Visit 3: 20 days



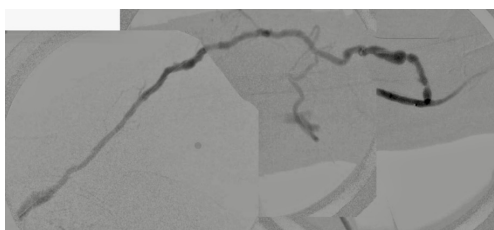
9 months later



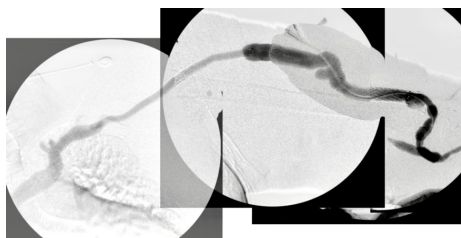
Immature BCF 10 months out



Immature BCF



18 months later



Preoperative Strategies

Regional Anesthesia

Amplifi vein dilation system

?FLEX Vessel Prep System

?Endo-Anastomotic dilation

Regional Anesthesia

From the Western Vascular Society

Vein distensibility is superior to vein diameter for predicting unassisted maturation of arteriovenous fistulae

Curtis Woodford, MD,¹ Devin Zarkowsky, MD,² Bian Wu, MD,³ Adam Z. Oskowitz, MD,⁴ Robert Shahverdyan, MD,⁵ and Shant M. Vartanian, MD,⁶ San Francisco, CA; Hamburg, Germany

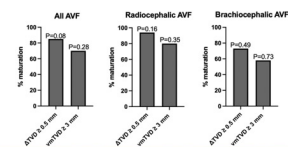


Fig 3. Unassisted maturation rates based on change in target vein diameter (Δ TVD) of $\le 0.5\text{ mm}$ and preoperative vein mapping TVD (Δ TVD) of $> 0.5\text{ mm}$ for the total cohort, radiocephalic arteriovenous fistula (RAVF), and brachiocephalic AVF (BCAVF).