Update on F/BEVAR for TAAAs degenerative and PDTAAAs: The Value of Inner Branched Devices and the Be-Back Catheter to Cross the Dissection Flap and for other Purposes

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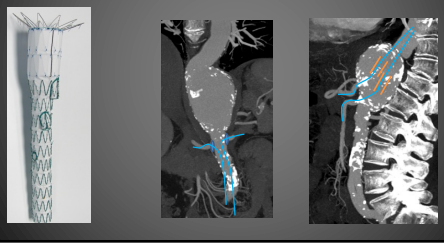
  - Consultant & Research grants
- Bentley
  - Consultant

Degenerative TAAA

- Basic Rule:
  - Find/Create long and durable proximal landing zone
- Anatomical Difficulties
  - Quality of target vessels
  - Angulations
- Current advantages:
  - Upper and Femoral approach for Branches
  - Multitude of BE and SE Stents for bridging
  - Inner Branches (and multiple graft manufacturers)

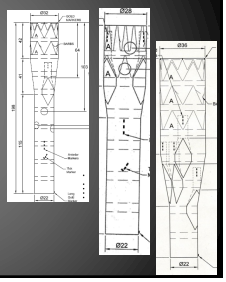
F/B-Graft with both Fens and Branches

Customize the design to the patients' Anatomy



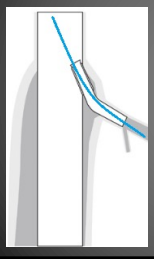
Inner Branch (as a third option)

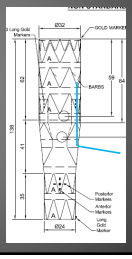
- When
  - Limited space between graft and aortic wall
  - Target vessels with sharp take-off
  - Combination Fenestrations/Inner Branches
    - N=83
  - Inner branches only
    - N=6



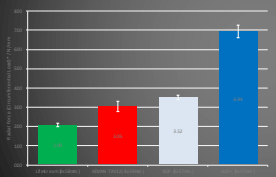
Additional Risk due to sharper Angle?

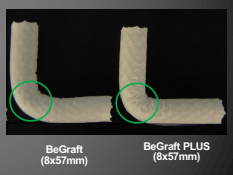
(Especially in Renal Arteries?)



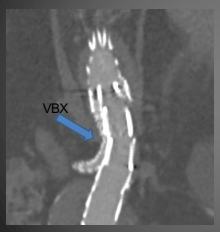


BeGraft PLUS
Radial Force and Kink Resistance





Collapsed Covered Stent



Journal Pre-proof

Midterm single center results with the use of custom-made endografts with inner branches, a call for attention.

Jose I. Torrealba, MD, Giuseppe Panuccio, MD, PhD, Petroula Nana, PhD, Antonino Giordano, MD, Daour Yousef Al Sarhan, MD, Tilo Kölbel, MD, PhD

Key Findings: Custom-made inner branch devices were used in 69 patients with a high bridging stent occlusion rate, especially in renal arteries (17% at 12 months). Misalignment of the inner branch opening, and preoperative acute aortic angles were identified as related factors leading to occlusions.

PDTAAA
Specific Anatomical Features with regard to F/BEVAR
(More forgiving than we thought!)

- Access
- Small True Lumen
- Target Vessels originating from False lumen
- Soft and Wide Target Vessels
- Distal Landing Zone in dissected Artery

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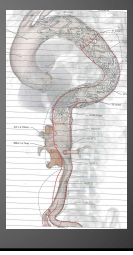
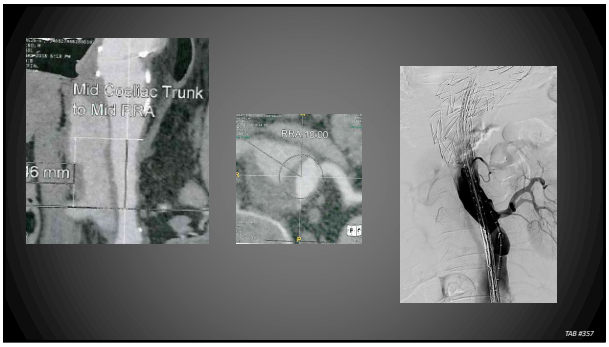
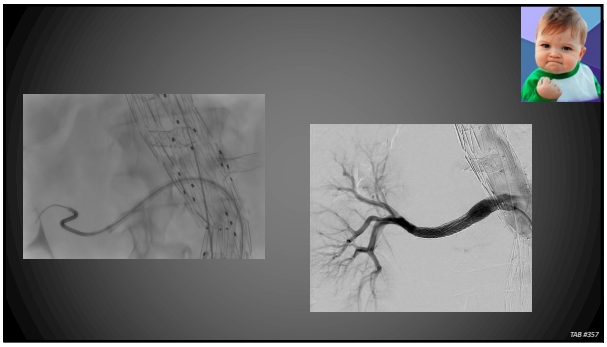
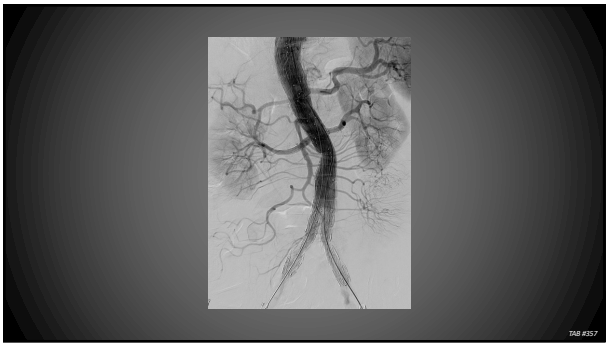
Target Vessels from False Lumen
Perforating the dissection flap?

- (Steerable) sheaths
  - Back of a wire
  - TIPPS needle
- BeBack Re-entry Catheter



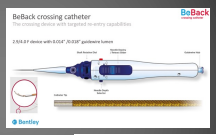


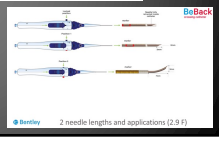




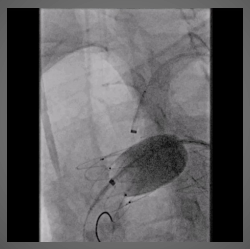
Be-Back Re-entry Catheter

- Steerable Needle/Flexible Catheter
- Re-entry:
  - Perforation of dissection flap in PDTAAA
  - In-situ fenestration LSA (in acute cases)
- Tricks:
  - Support with Steerable/guiding sheath
  - In situ: balloon inside graft



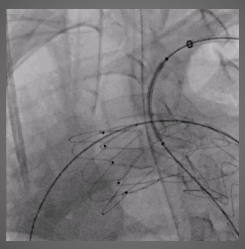


In-situ Fenestration LSA



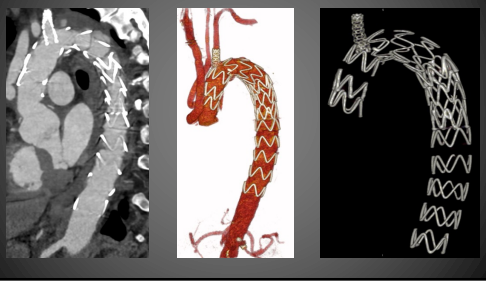
BeBack needle with Coda balloon as support

Stenting in-situ Fenestration



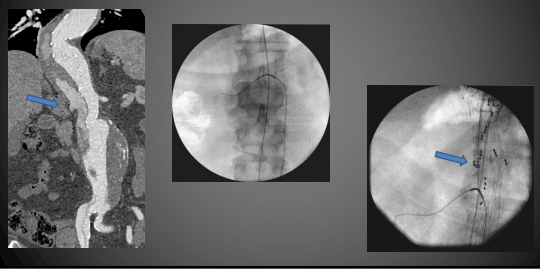
BeGraft 7x37

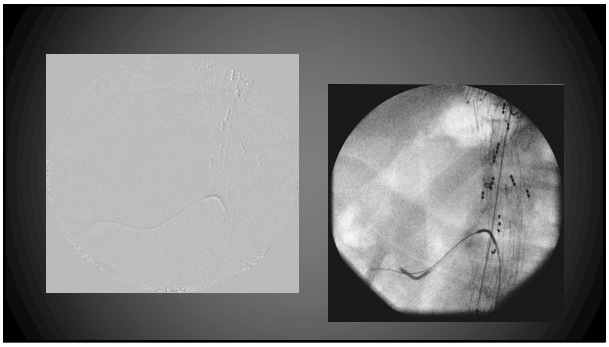
CTA Control

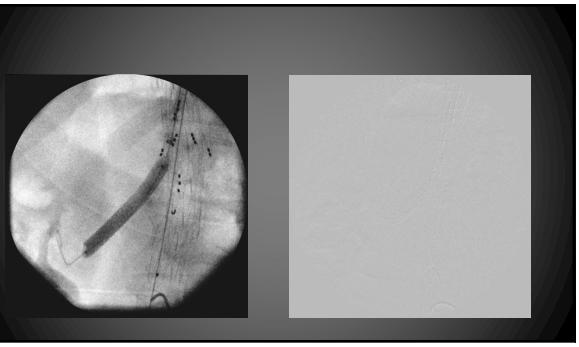


PDTAAA

RRA originating from FL







Conclusions

- F/B grafts for TAAA and PDTAAA
  - Customize graft to the anatomy/Off-the-shelf where possible/needed
    - ⟶ Do not be dogmatic
- Inner branches valuable third option
  - ⟶ In selected Vessels only!
- Be-Back steerable needle
  - ⟶ Very useful to perforate dissection flap & for acute ISF