Trans Endograft Approach To Treat Type 2 Endoleaks: Technique, Precautions and Results

Mazin Foteh, MD FACS
VASCULAR SURGERY
CARDIOTHORACIC AND VASCULAR SURGEONS
CLINICAL ASSOCIATE PROFESSOR OF SURGERY
TEXAS A&M UNIVERSITY MEDICAL SCHOOL

Approaches

- Vary and may require multiple but include:
  - Trans-arterial
  - SMA
  - Internal iliac
  - Trans-lumbar
  - Trans-caval
  - Trans-graft

Armamentarium for Access

- Includes:
  - Multiple and various shaped guiding catheters
  - Go to 0.035 90 cm angled Navicross™ (Terumo Interventional Systems)
  - Soft, torqueable navigational wires
  - Advanced cases:
    - Conformable sheaths, Tour Guide™ (Medtronic)
    - 0.021 inch/diameter microcatheters, such as Lantern™ (Penumbra) and Progreat™ (Terumo Interventional Systems)
    - TIPS or Transseptal Needles
    - Nephrostomy Kits

Trans-Arterial Embolization-SMA

72 yr old man s/p EVAR 3 in 2015
AAA sac expansion by 0.75 cm
CTA reveals obvious IMA feeder
Approach
- 6.5 Fr 55 cm TourGuide™ Catheter
- 5 Fr 90 cm Navicross™
- 2.8 Fr 100 cm Progreat Microcatheter

Trans-Arterial
TRANS-ARTERIAL

Embolization Technique
• 3 RUBY™ standard coils to create scaffold in the nidus
• 4 POD™ packing coils to fill the interstices
• Injection of two vials of ONYX LES™
  ∙ 1.5 mL 18 ONYX LES™
  ∙ 1.5 mL 34 ONYX LES™
• 1 RUBY™ coil to fill the IMA

TRANS-ARTERIAL

TRANS-CAVAL EMBOLIZATION

• Requires:
  • Extensive CT Planning
  • Identify bony and graft landmarks
  • Somewhat limited in embolizing inflow/outflow

TRANS-CAVAL EMBOLIZATION

3D MODELING

TCCE

COMPLETION SADOCGRAM
PRESSURE MEASUREMENT
CONSIDER THROMBIN OR ONYX INJECTION

TRANSCAVAL IMAGES COURTESY OF ADAM BECK, MD

3D CONFORMATION THROUGH NAVIGRAT™

ONYX DIFFUSING TO TREAT OUTFLOW
TRANS-GRAFT APPROACH

- Requires intense CT pre-planning
- Bony landmarks, graft landmarks
- Difficult to maneuver once in the sac
  - Limited to nidus only
- Added Cost

TRANS-GRAFT EMBOLIZATION

80 YR OLD M/N S/P EVAR 6 MONTHS AGO
AAA SAC EXPANSION BY 0.5 cm
CT REVEALS NO THROMBUS IN THE AAA SAC
APPROACH

9.5 Fr 55 cm TourGuide™ Catheter
TIPS assembly advanced and positioned
2.6 Fr 150 cm LANTERN Microcatheter

TRANS-GRAFT EMBOLIZATION

TRANSITIONED TO ONYX GLUE

Conclusions

- Reserve transgraft when other approaches fail
- Costly approach given need for additional EVAR limb
- Difficult to maneuver once in the sac
- Transcaval can replace in most scenarios