Failure Modes of Chimney and Other Parallel Grafts And How They May Be Overcome

Claude Mialhe – Stephane Pessort
CCM
with the clinical collaboration of
Maxime Sibe – Serge Haupert – Marc Beaufigeau

Disclosures

• IP owner:
  – FR13/61292
  – PCT/EP2014/073755
• Vascular Mind owner:
  Vmind is licensed for Universal Snorkel Device development

CCM CHIMNEY EARLY STUDY
October 2013 – October 2015

• Nb: 41
• Technique: NBS aortic cuff / BE parallel stents
• Primary: 34
• Secondary: 7
• Type of Chimney: 1:3, 2:12, 3:25, 4:1
• Nb of // stents: 106 RA: 76, SMA: 29, CT: 1

CCM CHIMNEY EARLY STUDY
Failure Modes

• // stent Occlusion:
  – Renal stent: 6 (7.9%)
    • Primary patency: 92.1%
    • Secondary patency: 96.1%
  – SMA stent: 0
  – CT stent: 0
• Type 1 Endoleak: 2 (4.8%)
• Aortic Stenosis: 1 (1.3%)

RENAL STENT LENGTH ISSUE

RENAL STENT INNER COVERAGE ISSUE

// STENTS ALIGNEMENT
TYPE 1 ENDOLEAK / APPPOSITION LENGTH

TYPE 1 ENDOLEAK / STRUCTURAL CONFLICT

EAG STENOSIS/ EXTERNAL CONTRAINT

PARAMETERS FOR AN IDEAL CHIMNEY
- Non Bare Stent cuff
- Full Expansion of EAG top Stent
- No top apex connection
- Length of apposition
- Proximal end // stent location level
- Distal insertion of renal stents
- // stent fabric coverage
- EAG fabric design
- Z stent design (U shape)

UNIVERSAL SNORKEL DEVICE

PCT/EP2014/073755

CONCLUSION
NBS cuff / BE stents Early Experience

- Renal stent occlusion is the main issue / gutter:
  - Covered stent length range
  - Accurate top stent placement
  - Length of apposition
- Gutter is related to EAG structure:
  - Full expansion of top
  - Stent V shape
  - 3 chimneys: favorite option
- Development of USD:
  - Decreasing stress in between //stents and EAG
  - Increasing aortic residual surface
  - Studying 4 chimneys feasibility