How Can False Lumen Intentional Placement (FLIP) of an Endograft Facilitate Repair of a Chronic TBAD: Technique and Results

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Infrarenal Aortic Repair With or Without False Lumen Intentional Placement of Endografts for Hybrid Management of Complex Aortic Pathology

• Between 2006 and 2017, 27 patients with TAAA underwent open infrarenal aortic replacement combined with endovascular repair in a single or multiple stage procedure
• 16 patients (59%) also had AD
• 27% patients had prior history of aortic surgery
• 5 patients had False Lumen Intentional Placement (FLIP) of an endograft to repair TBAD related TAAA

Infrarenal Aortic replacement and Abdominal Debranching for Repair of TBAD

• Resolves malperfusion
• Provides landing zone for endovascular treatment of aortic dissection
• May reduce spinal cord injury by lumbar revascularization - Prepare for the future
• Decompresses false lumen which may avoid proximal aneurysmal degeneration

Chronic Aortic Dissection: What we know

• False lumen is bigger than true lumen (99%)
• False lumen prone to enlarge / rupture
• Septum thickens with time and can restrict expansion of endograft in chronic stage
• Partial false lumen thrombosis has higher risk than no or complete false lumen thrombosis (increase resistance to flow?)
• Visceral flow is usually maintained by both true and false lumen; rarely all from false lumen

51 yo woman
• Known Type B aortic dissection
• S/p left thoracotomy and descending thoracic aortic repair on L heart bypass
• Radiation therapy L breast for cancer
• Present with left chest and back pain
• Renovascular HTN
• Pulmonary fibrosis
Excision of infrarenal aortic segment and fenestration, preserved lumbar arteries

Infrarenal Aortic Replacement as Part of Debranching

Pledgeted proximal anastomosis

Graft size to match available endograft
May require distal tapering

First FLIP (2007)
51 y/o woman
Type B aortic dissection
s/p left thoracotomy and descending thoracic aortic repair
s/p IR aortic replacement, aortic fenestration and abdominal de-branching

Infra-renal aortic replacement, de-branching and FLIP for Chronic TBAD

Type B Dissection with proximal DTA Aneurysm and renal malperfusion and LLE claudication

In 5 patients with chronic AD the infrarenal surgical graft created a seal zone allowing false lumen intenional placement (FLIP) of an endograft to treat the proximal dissected aorta
Type B Dissection with proximal DTA Aneurysm and renal malperfusion and LLE claudication

FLIP: Anatomic Requirements

- Proximal landing zone in the true lumen
  Proximal undissected aorta
  Proximal surgical or endovascular graft
  Elephant trunk
- Access from the false lumen to the true lumen
  Proximal tear
- Distal landing zone
  Distal false lumen (staged repair)
  Infra-renal graft with retrograde de-branch

False Lumen Intentional Deployment (FLIP)

- Allows full expansion of endograft
- Improves distal perfusion
- May preserve intercostal / lumbar flow
- Excludes weaker false lumen
- Limited Experience
- 4 of 5 patients have not required repair of non grafted segment
- Behavior of false lumen is altered (Decompression)?

In infra-renal aortic repair with or without false lumen intentional placement (FLIP) of endografts for hybrid management of complex aortic pathology:

- In patients with AD, a multi-stage procedural strategy can resolve malperfusion while simultaneously creating a landing zone using the false lumen as the conduit for the stent graft (FLIP) which allows full expansion of the endograft, potential preservation of lumbar/intercostal artery flow and exclusion of the weaker false lumen.

- Longer follow-up with FLIP technique is needed to appraise its ultimate clinical utility.
Thank you
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