Off the shelf options for ruptured thoraco-abdominal aneurysms

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Room 4 – Discussion Forum
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Within the past 12 months, the presenter or their spouse/partner have had a financial interest/arrangement or affiliation with the organization listed below.

- **Research/Research Grants, Clinical Trial Support**
  - W. L. Gore (major)
  - Cook Medical (major)

- **Consulting Fees/Honoraria**
  - W. L. Gore
  - Cook Medical
  - Abbott Vascular (minor)
  - Medtronic (minor)

- **Equity Interests/Stock Option**
  - TriVascular (minor)
  - Intact Vascular (minor)
  - Arsenal (minor)
  - 480 Medical (minor)
  - PQ Bypass (minor)
  - AneuMed (minor)

- **Officer, Director, Board Member or other Fiduciary Role**
  - VIVA Physicians Group

- **Speaker’s Bureau**
  - None
Dealing with aortic branches

Current Off the Shelf Opportunities

Strategies for emergent repair in TAAA rupture

- These techniques may involve mixing and matching of various available components; in some cases, it is required

  - Chimney – branch to aorta
  - Snorkel – proximal aorta to branch
  - Periscope – distal aorta to branch
  - Sandwich
  - Octopus
  - Combo – Sandwich/Periscope; Chimney-Snorkel/Periscope
68-year-old woman with a history of HTN presents to an OSH with sudden onset of severe chest and back pain.
Type A IMH diagnosed with mediastinal and pericardial fluid suggestive of leaking blood. Patient transferred to Stanford for further care.

Ascending aorta replaced with hemi-arch and open distal anastomosis performed.
Recovery remarkable for large hepatic subcapsular hematoma associated with errant chest tube placement through liver parenchyma. O/W, no major complications. Pre-discharge CT performed 2 weeks post-op.
She returns to clinic 1 month post-discharge for routine post-op check. No significant complaints and wounds healing well. No follow-up imaging at that time.

Now, 6 months post-op, she is awakened at night with nausea. EMS called; they find SBP in 60s and administer IV fluids. At OSH, CT scan performed. Patient transferred by helicopter to Stanford.
Initial CT at Celiac

Same level 6 mos later
81-year-old woman with 10 cm distal TAA. Currently works as accountant. Driving home from work when she experiences gas-like abdominal pain.
Her driving becomes erratic and she is pulled over by highway patrol; told to go to hospital. Urinary tract infection diagnosed.
Antibiotic prescribed, but pain remains intermittent. Returns to hospital in 48 hours and presumptive diagnosis of pneumonia on CXR. CT performed and patient transferred.
Dealing with aortic branches
Current Off the Shelf Opportunities

General strategies for TEVAR and EVAR

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A New Technique to Enhance Endovascular Thoracoabdominal Aortic Aneurysm Therapy—The Sandwich Procedure

Armando C. Lobato, MD, PhD, and Luciana Camacho-Lobato, MD, PhD
Sandwich technique with parallel branch grafts
Case Presentation

HPI: 56-year-old man with history of hypertension, asthma, emphysema, ETOH, tobacco (90+ pack year hx) and poly-substance drug abuse. Recently, hospitalized for exacerbation of COPD symptoms. He was in his usual state of health when he acutely developed severe mid-abdominal and epigastric pain radiating to the back, no triggers identified, nothing makes it better or worse. Associated with cold sweats, but no other accompanying symptoms; no dizziness, SOB, neck or arm pain, diaphoresis, nausea or vomiting. Presents to ED at OSH 3 days later. Mother died of ruptured aortic aneurysm.
CT scan one year prior to current hospitalization
18 days ago he experiences increasing SOB and dyspnea
Admitted to OSH for evaluation and treatment of COPD.
Treated in hospital for 9 days with improvement in SOB and chest symptoms
Discharged, but returns to ED in 4d with severe chest pain
Admits to taking Vicodin and amphetamines since coming home.
Chest radiograph the next morning
Lactate modestly elevated; urine output decreasing; acidotic (ph = 7.35); responding appropriately; abdomen soft, non-tender, denies pain, and moves all extremities.
Within the next hour, it is noted that the platelets dropped from 279K (pre) to 27K; Creatinine rising and urine output <10 cc/hr. What would you do now?
Dealing with aortic branches

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Future Directions

- Combining branch/parallel graft concepts
0.5 cm Viabahns above flow divider

1.5 - 2cm Viabahns below contra limb
HPI: 77-year-old man with h/o HTN, COPD, CRI, and multiple open and endovascular aortic procedures (incl open AAA repair (2003); ascend/arch reconstruction for 6.3 cm aneurysm (2009); re-do of arch (2011); TEVAR of DTAA (2012) with residual distal aortic disease s/p Stage 1 of TAAA multi-branch endo repair) doing well until he developed intense back pain during morning physical therapy session. Taken to OSH ED for evaluation.
BP: 110/73; Hct: 10.7; CT: endoleak with rupture

Transferred to Stanford for further care
2012
Component overlap 2012 - 2015
Dealing with aortic branches
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