LIVE 2019 Leading Innovative Vascular Education
May 9-11 2019
Larissa Imperial Hotel
Larissa, GREECE
http://www.live2019.gr
Organized by:
Institute of Vascular Diseases (IVD), Greece
In collaboration with:
Hellenic Society of Vascular and Endovascular Surgery
Stony Brook University Medical Center, New York, USA
International Symposium on Endovascular Therapeutics
Intervention Master Aortic Course
10th ANNIVERSARY

ACUTE AORTIC COARCTATION SECONDARY TO GRAFT THROMBOSIS IN HYBRID AORTIC ARCH REPAIR FOR CHRONIC AORTIC DISSECTION

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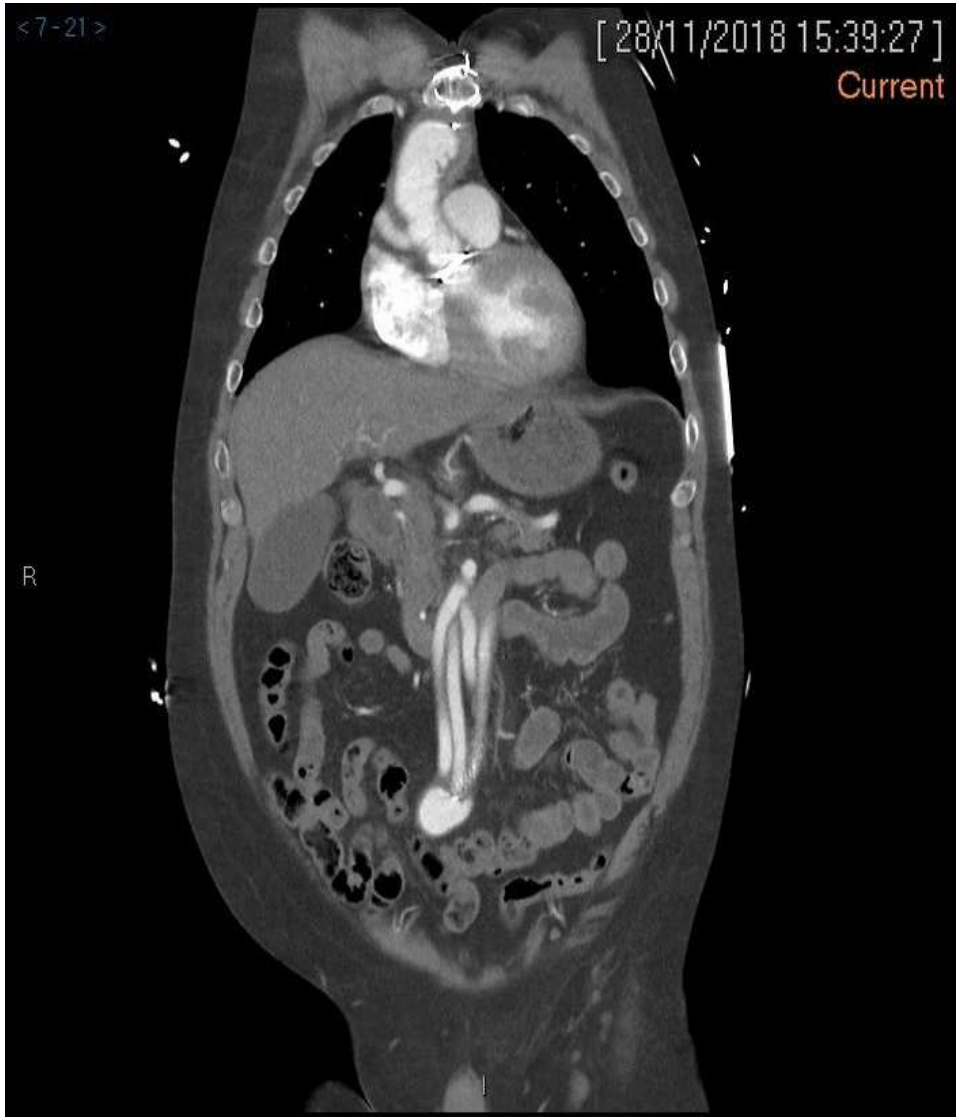
Case presentation

- 62yo male
- PMHX
  - Marfanoid syndrome
  - HTN
  - Type A dissection
    - AVR and Bentall's
  - Type B aortic dissection
    - Initially treated conservatively
  - Anticoagulated with warfarin

Year	Pathology	Intervention
2008	Type A aortic dissection extending to iliac vessels	Aortic root replacement with St Jude 27mm composite graft
2012	Type B chronic dissection with aneurysmal dilatation 6.3cm	TEVAR + left carotid-subclavian bypass
	Return to theatre (RTT) – aortic dissection	Cook uncovered stent from descending thoracic aorta across visceral segment
	RTT - Limb ischemia, collapse of true lumen due to persistent pressurisation of the false lumen	EVAR + stenting of right renal and iliacs
	RTT – Total abdominal vessel re-vascularization	- Midline laparotomy with anastomosis of renals, SMA and coeliac onto R CIA with 14 x 7mm Dacron graft - Cook covered stent from descending to infrarenal aorta
	RTT: Type 1 endoleak	Retroperitoneal cuffing of L CIA with 45 x 30mm PTFE cuff
2013	Thoracic pseudoaneurysm	45x150mm Gore CTag stent across arch to L CCA
2014	Type 1A endoleak with aneurysmal dilatation	- Division of previous Dacron graft with 34mm Dacron graft anastomosed as "elephant trunk" with long segment placed into existing stent - Gore CTag 45 x 150mm and 45 x 100mm to stent across anastomosis (anterograde and retrograde access) - Brachiocephalic trunk anastomosed to ascending aorta using 12mm Dacron graft

- Transfer from peripheral centre with
  - 2 week history of claudication
  - Acute abdominal and lower limb pain
  - Collapse, fell from tractor unable to walk

- On arrival
  - Profound hypertension, systolic BP 260
  - INR 5.7
- Initial management
  - HTN treated with GTN infusion ? Dissection
    - Rapid onset of lower limb parathesia and paralysis
    - Exacerbation of abdominal pain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Current
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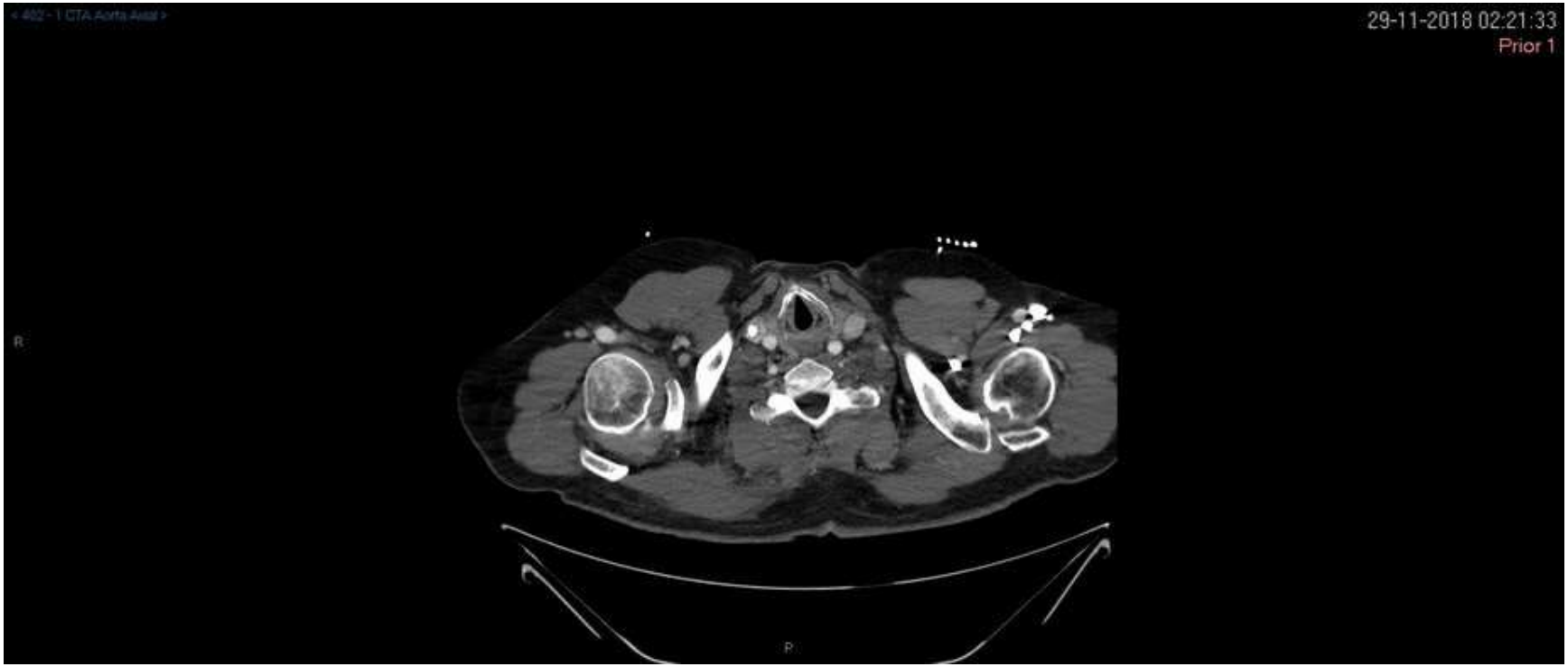
- Vascular management
  - GTN ceased
  - Coagulopathy corrected
  - Immediate transfer to angiography suite with deployment
    - 37 x 37 x 200 CTag with active control through the arch
    - 37 x 37 x 100 Ctag into dacron graft
    - Palpable femoral pulses with well perfused lower limbs
    - No evidence of embolic disease with DSA

- Transfer to Intensive care unit
  - Extubated
  - Persistent lower limb parathesia and paralysis
  - INR 2
  - Lumbar drained place with no improvement in neurology

- < 12hrs post procedure
  - Severe vasoplegic shock, high ionotropic requirement
  - Persistent lower limb paralysis and parathesia
  - Repeat imaging performed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Prior 1
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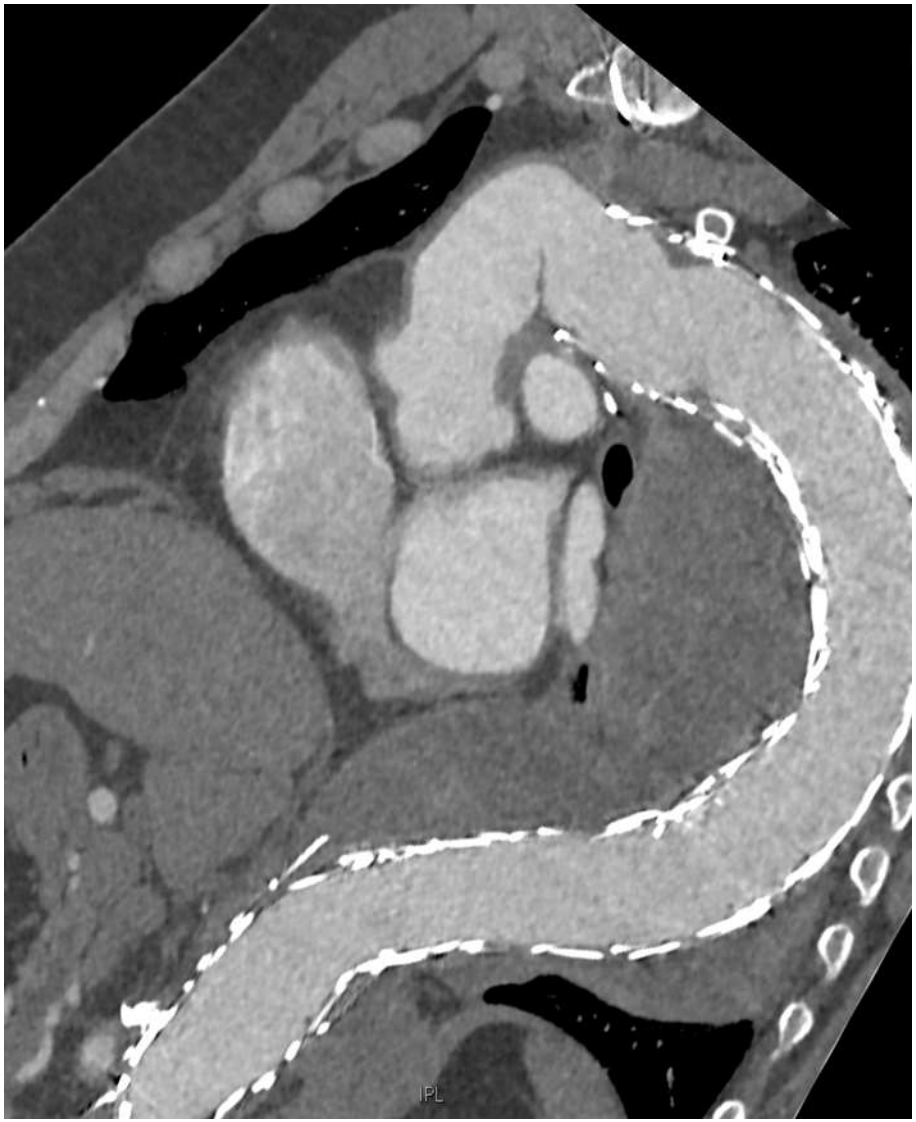
- Extensive bowel ischemia despite restoration of flow
- Complete spinal cord infarction
- Multi-organ failure
- Decision for palliation following discussion with family

Issues

- Initial management
  - Emergency department presentation with pain, HTN and Marfanoid history was treated as dissection
  - Complex aortic repair caused confusion and delay in accurate diagnosis
  - Treatment of HTN exacerbated spinal cord and visceral ischemia

- Issues
  - Hybrid anatomy
    - Hybrid repair with resultant altered flow dynamics which are difficult to anticipate and prevent
    - Acute angulation in the dacron graft predisposing to thrombosis despite adequate anticoaglaution

- Dacron redundancy
- Rigidity of thoracic stents
- Compliance mismatch between the Dacron and stent grafts



- Conclusion
  - Hybrid repair requires urgent specialist opinion
  - Compliance mismatch with risk of angulation and thrombosis in hybrid repair should be anticipated and surveyed
  - ? Role for stenting to ascending for prevention of thrombosis