Update On A New Manifold Multibranched Endo Device (Colt Device) For Improving TAAA Treatment: Concept, Advantages And Results

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My disclosures:
- I am the co-inventor of the Colt stent-graft system Jotec/CryoLife, Hechingen, Germany, who manufactured the device

The Colt – a new weapon to treat TAAAs

Colt docking station for TAAA

The device is delivered through a 24-F system

Colt docking station for TAAA

device inside
device outside
What makes Colt different

- All branches downward, not axially directed
  - Opportunity to decide which branch to choose for the target vessel, which makes the endograft more universal
- The 33 and 36-mm diameters of the Colt
  - Expand the number of patients suitable for implantation of one module of the endoprosthesis
- Stage / rescue procedures possible especially for renal arteries

Indications for Colt

- Landing/sealing zone of 30-40mm in the descending aorta or extension/preparation of neck with thoracic stent-graft
- Perfused aortic diameter ≥ 26mm
- Diameter visceral/renal arteries ≥4mm and ≤10mm
- Length of visceral/renal arteries ≥20mm

Clinical experience with COLT

- 13 August 2015 – first in man implantation
- 14 patients (1F, 13M), aged 56-74
- 14 TAAAs
  - Type II – 6
  - Type III – 6
  - Type IV – 2
- Procedure:
  - Type IVA, V: one-, (7), two- (6) or three-stage (2)
  - Branches: E-ventus, Viabahn, Advanta V12
- Follow-up 1-38 months
  - One death (multiorgan failure) 7th postoperative day
  - One branch occluded (celiac trunk)
  - Restenosis in two renal branches – angioplasty with stenting
  - One branch (RRA) dislocation (reconnected with Viabahn)
  - Two Type II endoleaks in observation
  - One Type Ia endoleak – treated with molding balloon

Other centres:

- Italy: 19
- Poland: 12
- Germany: 5
- Spain: 1
- Greece: 1

Case 1

- 69 y old male, thoracoabdominal aneurysm (Type III)
- H/o: open repair of rAAA – tube prosthesis
Second stage (one month later): COLT + extension

- CT: E-ventus 7x57
- SMA: E-ventus 7x7, 8x37
- RRA: 2x E-ventus 6x58
- LRA: Ze lumbale 7x100

Control CTA 12 months after the procedure

Case 2 – rescue concept – upward branch device

- 75y male, thoracoabdominal aneurysm (Type III)
- h/o: CAD, hypertension, stroke (2012)

RRM - Renal artery Rescue Module

Three-stage procedure:
- E-vitaThoracic
- Colt
- Upward branched module with bifurcated stent-graft

After 18 months:
- Dislocation of RRA branch
- Dilatation of the LCIA
Is the COLT a promising device for the treatment of thoraco-abdominal aneurysms?

- Long-term follow up and a larger group of cases are needed to prove applicability of this novel device in the treatment of TAAA; however, initial short-term results are very promising.

- Colt stent-graft would potentially accommodate the majority of TAAA anatomical variations.

- Further modifications of the Colt will accelerate the transition to partial replacement of custom-made devices, which may result in the elimination of manufacturing delays and lowering of treatment costs.