Midterm results of endovascular arch repair with parallel grafts

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Disclosure

Speaker name:

**Reinhard Kopp**

I have the following potential conflicts of interest to report:

- [ ] Consulting
- [ ] Employment in industry
- [ ] Stockholder of a healthcare company
- [ ] Owner of a healthcare company
- [ ] Other(s)

- [x] I do not have any potential conflict of interest
Parallelgrafts in the Aortic arch

Single PG + SA debranching  Double chimney  Periscope
Issues in ARCH (PG) TEVAR

- landing zones
- endoleaks
  - gutters
- parallel graft patency
- long term durability
Parallel grafts in the Aortic arch

- lessons learned

proximal chimneys in the ascending aorta

- higher risk of type Ia \textit{gutter} endoleak
chronic TBAD
-> 2 Chimneys + 1 Periscope
postop CTA d1
Parallelgrafts in the Aortic arch

- lessons learned

<table>
<thead>
<tr>
<th>Anatomic Criteria:</th>
<th>Physiologic Criteria:</th>
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<tbody>
<tr>
<td>• Arch aneurysms and chronic dissections, no previous mechanical aortic valve replacement</td>
<td>• Minimum of 2-year life expectancy</td>
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<tr>
<td>• Ascending aortic length $\geq 50$ mm (measured from sinotubular junction to origin of innominate artery)</td>
<td>• Negative stress test (cardiology clearance required in the setting of positive stress test)</td>
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<tr>
<td>• Sealing zone in the <strong>ascending aorta</strong> $\geq 40$ mm in length and $\leq 38$ mm diameter</td>
<td>• No class III or IV congestive heart failure</td>
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<tr>
<td>• Sealing zone in the <strong>innominate artery</strong> $\geq 20$ mm in length and $\leq 20$ mm in diameter</td>
<td>• No stroke or myocardial infarction in the last year</td>
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<td>• Access able to accommodate 22- or 24-F sheaths</td>
<td>• No significant carotid bifurcation disease ($\geq 75%$ stenosis by North American Symptomatic Carotid Endarterectomy Trial criteria)</td>
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<td>• Estimated glomerular filtration rate by modification of diet in renal disease method $\geq 45$ mL/min/1.73 m$^2$</td>
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diameter ascending aorta $\leq 36$ mm
Mid-term results from Oct. 2009 to May 2014

41 patients (28 male: 69 %)

- mean age 68 years (27-87; SD 13)
- follow up: mean 31 mo

- 59 Parallel grafts
- 1 CPG 71 %
- 2 CPG 17 %
- 3 CPG 10 %

- 30 Chi, 29 Perisc
Parallel Grafts ARCH@USZ

<table>
<thead>
<tr>
<th>n</th>
<th>30d mortality</th>
<th>CVA/SCI</th>
<th>EL</th>
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<tbody>
<tr>
<td>41</td>
<td>12 %</td>
<td>9%</td>
<td>18%</td>
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n = 41
41 % acute patients
48 % redo thoracic aorta

type IA/III endoleak 3 7 %
reinterventions 6 15 %
Stroke 2 5 %
SCI 2 5 % (partial/compl. recovery)
Reinterventions during FUP

\[ n = 6/41 \ (15\%) \]

time to reintervention 2 months
\[ (0-15; \ SD: \ 3) \]

**Endoleaks**
- 2x coil embolization (Ia/Ib)
- 1x distal TEVAR relining/extension

**Parallel grafts**
- 1x stenting LSA PG
- 1x correction of PG inflow (brcTr)

**Others**
- 1 x TAVI (pre-defined strategy)
Maximal Transverse Aneurysm Diameter

- Preoperative 61.4 (26-100; SD:17) mm
- Postoperative 55.8 (26-94.00; SD:16) mm

(p < .001)
gutter endoleak type Ia  10-20 %  ->  5 %

- > 50 % disappear
- proximal extension (PG + TEVAR)
- search for type II endoleak (LSA)
- polymer embolisation / Onyx
parallel grafts ARCH@USZ

Periscope + branched TEVAR
Conclusions

Good results with ARCH PG Technique

• selected patients
• allows total endovascular arch repair
• relevant reintervention rate
• shows durability and patency up to 3 years of FU
• requires lifelong surveillance
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