One-Wire-Technik

First Experiences With a Novel Technique for Endovascular Repair of the Ascending Aorta Using a Combined Transapical and Transfemoral or transsubclavian Approach using Bolton-medical device

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Disclosure

Speaker name: Ahmed Koshty MD.

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)

I do not have any potential conflict of interest
Treatment of the ascending aorta

The gold standard in the treatment of the ascending aorta still the open surgery

Quelle: www.bergmannsheil.de
Hospital mortality ~ 15 to 25%!

The open surgery
Before

After

n=102 with acute type-A dissection

Proximal landing zone >20mm
True Lumen <38mm
Aortic diameter <46mm
Aortic valve not involved
Iliac Diameter > 8mm
# Endovascular Approaches to Acute Aortic Type A Dissection: A CT-Based Feasibility Study

## Table 2

<table>
<thead>
<tr>
<th></th>
<th>Median</th>
<th>Mean</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from the distal coronary artery to the IT</td>
<td>84</td>
<td>85</td>
<td>40–130</td>
</tr>
<tr>
<td>Distance from the distal coronary artery to the LCC</td>
<td>99</td>
<td>99</td>
<td>0–148</td>
</tr>
<tr>
<td>Distance from the distal coronary artery to the ET</td>
<td>23</td>
<td>28</td>
<td>0–128</td>
</tr>
<tr>
<td>Proximal entry tear length</td>
<td>23</td>
<td>39</td>
<td>1–221</td>
</tr>
<tr>
<td>Distance from the ET to the IT</td>
<td>58</td>
<td>59</td>
<td>0–118</td>
</tr>
<tr>
<td>Distance from the ET to the LCC</td>
<td>71</td>
<td>74</td>
<td>0–134</td>
</tr>
<tr>
<td>Distance from the ET to the LSCA</td>
<td>87</td>
<td>87</td>
<td>19–148</td>
</tr>
<tr>
<td>Innominate trunk length</td>
<td>35</td>
<td>35</td>
<td>14–64</td>
</tr>
<tr>
<td>Dissection extension length</td>
<td>496</td>
<td>373</td>
<td>20–699</td>
</tr>
<tr>
<td>Number of entry tears</td>
<td>2</td>
<td>2</td>
<td>1–6</td>
</tr>
</tbody>
</table>

32/102 (31%) Could be treated using endovascular prosthesis
8 Patients would need a carotid-carotid-bypass
13 Patients would need b-EVAR Stent graft
53/102 (52%) Patients with Typ A Dissektion could be endovascular treated
Trans femoral implantation
Transcatheter Repair of Combined Ascending Aortic Pseudoaneurysm and Aortic Arch Aneurysm Through a Cardiac Transapical Approach
Gino Gerosa, MD, Roberto Bianco, MD, Andrea Bortolami, MD, Carlo Dal Lin, MD, Paolo Frigatti, MD, Giuseppe Tarantini, MD, Giambattista Isabella, MD, and Franco Grego, MD
Prosthesis

Cook

Bolton medical
Bolton Prosthesis
Schematic drawing of the one-wire-technique

A. Transapical access is established, a sheath inserted and a wire (blue) advanced into the descending aorta and subsequently externalized through the femoral artery.
B. By pushing on both ends of the wire, the distal landing zone at the outer curvature is precisely defined while deploying the stent prosthesis
C. Optimization of the proximal landing zone at the inner curvature by pulling on both ends of the wire and complete deployment of the endovascular prosthesis
D. Final result after wire and sheath removal and closure of the apical access.
Birds beak
ONE-WIRE-TECHNIQUE: FIRST EXPERIENCES WITH A NOVEL TECHNIQUE FOR ENDOVASCULAR REPAIR OF THE ASCENDING AORTA IN ACUTE TYPE A AORTIC DISSECTIONS USING A COMBINED TRANSAPICAL AND TRANSFEMORAL APPROACH

Philippe Grieshaber; Nadine Nink; Dursun Guenduez; Peter Roth; Coskun Orman; Mweshal Elzieb; Bernd Niemann; Andreas Böning; Ahmed Koshty

[+] Author Information

Trans femoral implantation
Trans apical implantation
Subclavian implantation
Subclavian implantation
<table>
<thead>
<tr>
<th>Patient</th>
<th>Diagnosis</th>
<th>Preoperative condition</th>
<th>EuroSCORE II (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 female, 64 yrs.</td>
<td>progredient type A dissection with pericardial effusion</td>
<td>intubated, urgent supracoronary aorta ascendens replacement two days prior, neurological symptoms present (reduced vigilance) due to cerebellar and basal ganglia infarctions</td>
<td>33.9</td>
</tr>
<tr>
<td>2 male, 73 yrs.</td>
<td>type A dissection with intramural hematoma</td>
<td>prehospital intubation due to impaired vigilance, conjugate eye deviation, right arm hemiparesis</td>
<td>51.1</td>
</tr>
<tr>
<td>3 male, 67 yrs.</td>
<td>type A dissection with pericardial effusion</td>
<td>vigilant, history of stroke with aphasia and right arm hemiparesis</td>
<td>25.9</td>
</tr>
<tr>
<td>4 male, 76 yrs.</td>
<td>suture aneurysm with located dissection of the aortic annulus</td>
<td>condition after biological aortic valve replacement two month ago and coronary stent-implantation five years and six days ago, DDD pacemaker cause of atrial fibrillation since five years awake, vigilant, reduced general condition, angina pectoris</td>
<td>37.25</td>
</tr>
<tr>
<td>5 male, 66 yrs.</td>
<td>suture aneurysm</td>
<td>condition after Bentall procedure with mechanical valve and re-implantation of the coronary arteries after type A dissection 15 months before awake, no neurological symptoms, decline of open surgical repair</td>
<td>36.45</td>
</tr>
<tr>
<td>6 male, 48 yrs.</td>
<td>type A dissection with true lumen collapse</td>
<td>condition after David procedure three weeks ago, acute renal failure requiring continuous hemofiltration</td>
<td>21.85</td>
</tr>
</tbody>
</table>
Intraoperative data

The procedural and fluoroscopy times as well as amount of contrast medium and radiation applied are shown for each patient treated.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Operation time (min.)</th>
<th>Fluoroscopy time (min.)</th>
<th>Amount of contrast medium (ml)</th>
<th>Amount of radiation (µGy*m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pat. 1</td>
<td>114</td>
<td>15.4</td>
<td>140</td>
<td>29,639</td>
</tr>
<tr>
<td>Pat. 2</td>
<td>79</td>
<td>8.2</td>
<td>80</td>
<td>14,541</td>
</tr>
<tr>
<td>Pat. 3</td>
<td>82</td>
<td>10.2</td>
<td>150</td>
<td>13,545</td>
</tr>
<tr>
<td>Pat. 4</td>
<td>232</td>
<td>21.2</td>
<td>250</td>
<td>15,963</td>
</tr>
<tr>
<td>Pat. 5</td>
<td>268</td>
<td>13.9</td>
<td>170</td>
<td>6,089</td>
</tr>
<tr>
<td>Pat. 6</td>
<td>74</td>
<td>8.6</td>
<td>140</td>
<td>6,536</td>
</tr>
</tbody>
</table>
Results

- We treated 6 patients (5 ♂, 1♀)
  - 1 Aneurysma
  - 3 acute AD
  - 2 IMH
- Proximal landing zone (0)
- Distal landing zone (0)
- Approach
  - 4 patients transapical
  - 1 patient trans subclavian
  - 1 patient transfemoral
- 30 day Mortality 0%
- Major stroke 0%
The one-wire-technique for endovascular repair of the ascending aorta

- is feasible,
- Yields promising short-term results,
- eliminates risks of conventional surgical therapy and
- might be better tolerated by multimorbid high-risk patients.

Long-term data will reveal the durability of this approach.
The future

2011

2016
Thank You
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