

University Heart Center Hamburg

GERMAN AORTIC CENTER HAMBURG



### Techniques For Cerebral Protection During Ascending Aortic Arch Repairs – Endo And Open: The Value Of CO<sub>2</sub>-Flushing

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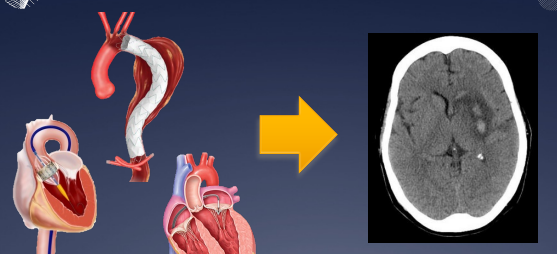
VEITH IMPOSER  
Celebrating 51st Anniversary

Tuesday – Saturday, November 19-23, 2014

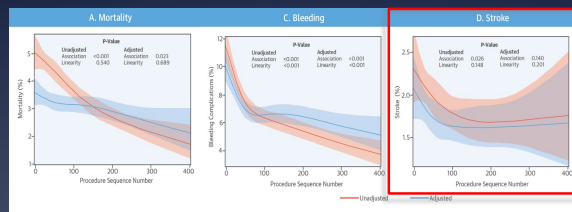
### Disclosures

- Consultant: Cook Medical, Philips, Getinge, Terumo Aortic, Arterica
- Research-grants: Cook Medical, Philips, Terumo Aortic, Medtronic
- Travel-grants: Cook Medical, Getinge, Philips
- Speaking fees: Cook Medical, Philips, Getinge
- Shares: Makita-Medical, Arterica
- IP: Cook Medical, Terumo Aortic, Makita Medical
- Royalties: Cook Medical, Terumo Aortic

### Cardiovascular Interventions



### Stroke Independent Of Operator Experience in TAVI



Carroll et al 2017; J Am Coll Cardiol 70:29-4

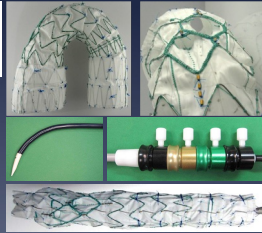
### Branched Arch Endograft

Haulon et al. Evolving Technology/Health Science

Global experience with an inner branched arch endograft

Stephan Haulon, MD, PhD<sup>1</sup>, Ron K. Greenberg, MD<sup>2</sup>, Rafallic Spear, MD<sup>3</sup>, Matt Engleman, MD<sup>4</sup>, Cherie Abraham, MD<sup>5</sup>, Christine Longo, MD<sup>6</sup>, Eric Verbeeren, MD, PhD<sup>7</sup>, Kazuo Frances, MD<sup>8</sup>, Tilo Kölbel, MD, PhD<sup>9</sup>, Brandon Stouffer, MD<sup>10</sup>, Timothy Reisch, MD<sup>11</sup>, Pascal Desjardins, MD, PhD<sup>12</sup>, Bradline Masari, MD<sup>13</sup>, Rhayee Roodin, PhD<sup>14</sup>, Timothy Chinn, MD<sup>15</sup>, and Tara Mastromarino, MD<sup>16</sup>

2009-2013	
Multicenter Study	
n = 38	
Technical success	32/38
Mortality	5/38
Stroke/TIA	6/38 (14%)



Haulon et al. 2014; J Thor Cardiovasc Surg 148:1709-16

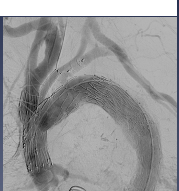
### Cook Zenith Branched Arch Endograft

Editor's Choice – Subsequent Results for Arch Aneurysm Repair with Inner Branched Endografts<sup>1,2</sup>

R. Spear<sup>1</sup>, S. Haulon<sup>2</sup>, T. Ohki<sup>3</sup>, N. Tziliparis<sup>4</sup>, Y. Kanaoka<sup>5</sup>, C.P.E. Milne<sup>6</sup>, S. Debus<sup>7</sup>, R. Takizawa<sup>8</sup>, T. Kölbel<sup>9</sup>

<sup>1</sup>Aortic Centre, CHRU Lille, France  
<sup>2</sup>Vascular Surgery, Jikei University, Tokyo, Japan  
<sup>3</sup>German Aortic Center, University Heart Center Hamburg, Germany

n = 27; Hamburg, Tokio, Lille	
4/2013- 11/2014	
Technical success	27/27
30d Mortality	0/27
1y mortality	1/27
Stroke/TIA	3/27 (11%)



Spear et al 2016; Eur J Vasc Endovasc Surg 51: 380-5

### Branched Arch with 3 Inner Branches

Multicenter global early feasibility study to evaluate total endovascular arch repair using three-vessel inner branch stent-grafts for aneurysms and dissections

Emanuel R. Tenorio MD PhD<sup>1</sup>, Gustavo S. Oderich MD PhD<sup>2</sup>, Tito Köhler MD PhD<sup>3</sup>, Nuno V. Dias MD PhD<sup>4</sup>, Björn Sönnerwall MD PhD<sup>5</sup>, Angelos Kariotis MD<sup>6</sup>, Mark A. Farber MD<sup>7</sup>, F. Enrique Parodi MD<sup>8</sup>, Carlos H. Tenreiro MD<sup>9</sup>, Cassia K. Scott MD<sup>10</sup>, Nihalata Tallamraju MD PhD<sup>11</sup>, Carlos Fernandez MD<sup>12</sup>, Tomasz Jakimowicz MD PhD<sup>13</sup>, Katarzyna Janta MD<sup>14</sup>, Jarm Kozzaborg PhD<sup>15</sup>, Justine Moynagh MD<sup>16</sup>, and Stephan Klauen MD PhD<sup>17</sup>, Houston and Dallas, The University and Munich, Germany; Mainz, Sweden; Chapel Hill, NC; Warszawa, Poland; Birmingham, UK; and Gif-sur-Yvette, France

Variable	No (%)
Early death	2 (5)
Any major adverse event	30 (80)
Estimated blood loss >1 L	2 (5)
Acute kidney injury	2 (5)
Deep-vein thromboses	1 (2.5)
Myocardial infarction	2 (5)
Respiratory failure	4 (10)
Any spinal cord injury	0 (0)
Any stroke	2 (5)
- Major stroke	1 (2.5)
- Minor stroke/TIA	1 (2.5)
Bowel ischemia	1 (2.5)
TIA/Transient ischemic attack	

Tenorio et al. 2021, J Vasc Surg 74:1055-65

### Endovascular cTAAD-Repair

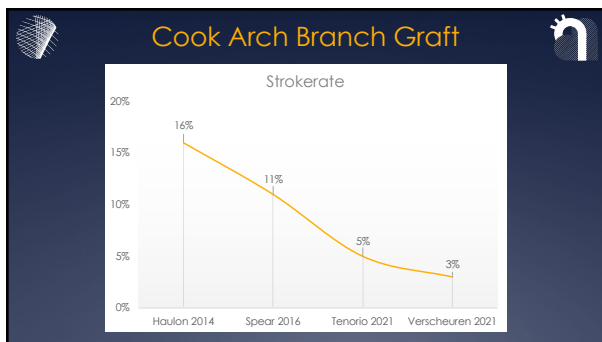
Endovascular Treatment of Post Type A Chronic Aortic Arch Dissection With a Branched Endograft

Early Results From a Retrospective International Multicenter Study

...Dorian Vintershan, MD<sup>1</sup>, Stephen Haskins, MD, PhD<sup>2</sup>, Nihalata Tallamraju, MD, PhD<sup>3</sup>, ... Björn Sönnerwall, MD, PhD<sup>4</sup>, Maria Cusack, MD, MCh<sup>5</sup>, Dominique Fisher, MD, PhD<sup>6</sup>, and Tito Köhler, MD, PhD<sup>7</sup>

- Patients: 70
  - Male: 50
  - Age: 69y
- Technical success: 68 (97%)
- Stroke: 2 (3%)
- 30d-Mortality: 2 (3%)
- 1y-mortality: 8 (11%)

Verschuereen et al. 2021; Ann Surg 273: 997-1003



### 10y-Experience with F/B-TEVAR

- 2011-2022
- n = 209, 80 females (38%)
- B-TEVAR: 40%
- F-TEVAR (inc. LSA-Branch): 60%
- Prev. ascending replacement: 39%
- Aneurysm/PAU: 52%
- Chronic Dissection: 48%
- Genetic aortic syndrome: 4.3%

Nana et al. 2024; Eur J Vasc Endovasc Surg 68:315-23

### 10y-Experience with F/B-TEVAR

Variable (N, %)	Total cohort (209)	Females (80)	Males (129)	p
Technical success	203 (97.1)	78 (97.5)	125 (96.9)	.80
Mortality	20 (9.5)	8 (10.0)	12 (9.3)	.86
Stroke	21 (10%)	7 (8.8)	14 (10.9)	.62
- Major stroke	12 (5.7%)	3 (3.8)	9 (7.0)	.33
- Minor stroke	9 (4.3)	4 (5.0)	5 (3.9)	.69
Spinal cord ischemia	10 (4.8)	2 (2.5)	8 (6.2)	.23
Retrograde TAAD	5 (2.4)	1 (1.3)	4 (3.1)	.40
AKI	19 (9.1)	5 (6.3)	14 (10.9)	.26
Access complications	47 (22.5)	26 (32.5)	21 (16.3)	.006
Myocardial infarction	3 (1.4)	2 (2.5)	1 (0.8)	.31
Respiratory failure	13 (6.2)	4 (5.0)	9 (7.0)	.57

Nana et al. 2024; Eur J Vasc Endovasc Surg 68:315-23

