Lessons learned 5 years after the PERICLES registry publication: A position statement about the current role of CHEVAR

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Disclosure

Speaker name:

........G. Torsello.................................................................

I have the following potential conflicts of interest to report:

☒ Consulting: Cook, Gore, Medtronic, Cordis, Boston
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
First Ch-EVAR series with diverging results

<table>
<thead>
<tr>
<th>1st author</th>
<th>year</th>
<th>No of pat</th>
<th>30d mortality (% - n)</th>
<th>Renal failure (% - n)</th>
<th>Perm dialysis (% - n)</th>
<th>Endoleak T-I (% - n)</th>
<th>Endoleak T-II (% - n)</th>
<th>Endoleak T-III (% - n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohrlander</td>
<td>2008</td>
<td>6</td>
<td>0.0</td>
<td>0</td>
<td>16.7</td>
<td>1</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Hiramoto</td>
<td>2009</td>
<td>8</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>12.5</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>Bruen</td>
<td>2011</td>
<td>21</td>
<td>4.8</td>
<td>1</td>
<td>28.6</td>
<td>6</td>
<td>9.5</td>
<td>1</td>
</tr>
<tr>
<td>Coscas</td>
<td>2011</td>
<td>16</td>
<td>12.5</td>
<td>2</td>
<td>18.8</td>
<td>3</td>
<td>0.0</td>
<td>6.3</td>
</tr>
<tr>
<td>Donas</td>
<td>2011</td>
<td>73</td>
<td>0.0</td>
<td>0</td>
<td>8.2</td>
<td>6</td>
<td>0.0</td>
<td>1.4</td>
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<tr>
<td></td>
<td></td>
<td>124</td>
<td>3</td>
<td>16</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>124</td>
<td>3</td>
<td>16</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Overall: 2.4% 12.9% 3.2% 2.4% 4.8% 0%
Limitations of single center reports

- Limited number of patients
- Wide variety of treated entities
- Several combinations of off-the-shelf devices
PERICLES registry

Performance of the chimney technique in the treatment of aortic pathologies:

A multicenter trans-Atlantic registry
## Pericles study- MAIN OUTCOMES

517 patients from 13 international centres

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean follow up</td>
<td>17.1 months</td>
</tr>
<tr>
<td>Intra-op type Ia endoleak:</td>
<td>7.9%</td>
</tr>
<tr>
<td>Persistent intra-op type Ia endoleak</td>
<td>2.9%</td>
</tr>
<tr>
<td>Technical Success</td>
<td>97.1%</td>
</tr>
<tr>
<td>Chimney-graft patency</td>
<td>94.1%</td>
</tr>
</tbody>
</table>

- Results due to combination of devices and 3 or 4 vessel ChEVAR
Point of concern: gutters

The majority of Ch-EVAR gutter endoleaks detected on completion angiography can be expected to resolve spontaneously by the first postoperative CTA. Key factor associated with persistent gutter endoleak is an insufficient length of the new proximal seal zone.

Predictor of failure: Subgroup analysis of gutter-related endoleaks

Less than 20% stent graft oversizing is associated with higher risk of type IA endoleak when compared with 30% oversizing (14.3% vs. 2.1%, p=.02)

Higher rate of gutter-related endoleaks in low volume centers (<20 treated patients) due to <20% oversizing

Predictor of failure: Subgroup analysis of gutter-related endoleaks

3.4 times greater in patients with stainless steel endoskeleton compared to Nitinol devices (HR: 3.4, 95% CI)

Choice of the endograft is essential

Nitinol endoskeleton  stainless steel endoskeleton
Point of discussion: stroke rate

- Cerebrovascular event: 1.9%
- Use of *bilateral upper extremity access* was found to be an independent predictor factor associated with a 2.8-fold increased risk for postoperative stroke
- Recommendation of using a single arm access point (e.g. left upper extremity) for Ch-EVAR procedures

Point of discussion: Chimney occlusion
Chimney Occlusion-Free Survival as a Function of Increasing Chimney Number

Impact of **Relining** on Chimney Occlusion Free Survival

Better Stent Occlusion Free Survival in Nitinol-Polyester Endgrafts

Conclusions I

Nitinol-Polyester stent-grafts have less risk of chimney occlusion and a significant gutters freedom and survival advantage
Conclusions II

- Patients treated at low volume centers have higher risk of type 1a endoleak.

- Undersizing of the endograft and an increased number of chimneys are associated with risk of type 1a endoleak and poor long-term survival.
Thank you!
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