Rationale for use of suprarenal vs. infrarenal devices for application of ChEVAR technique

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Disclosure

Speaker name:

I have the following potential conflicts of interest to report:

- Consulting: Medtronic, WL Gore, Cook, Endospan
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest
Evolution of EVAR

Transfemoral intraluminal graft implantation for abdominal aortic aneurysms.

Evolution of EVAR

Endovascular treatment of abdominal aortic aneurysm: a failed experiment

J. Collin and J. A. Murie*

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Evolution of EVAR 2001-2016
Evolving Device Use and Changing Patient Population
<table>
<thead>
<tr>
<th>Perioperative Outcome</th>
<th>Endovascular Repair (N = 22,830)</th>
<th>Open Repair (N = 22,830)</th>
<th>P Value</th>
<th>Relative Risk Associated with Open Repair (95% CI)</th>
</tr>
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<tbody>
<tr>
<td>Death (% of patients)</td>
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<td>All ages</td>
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<td>Medical complications (% of patients)</td>
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<td>Myocardial infarction</td>
<td>7.0</td>
<td>9.4</td>
<td>&lt;0.001</td>
<td>1.34 (1.26–1.42)</td>
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<td>Pneumonia</td>
<td>9.3</td>
<td>17.4</td>
<td>&lt;0.001</td>
<td>1.89 (1.79–1.98)</td>
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<td>Acute renal failure</td>
<td>5.5</td>
<td>10.9</td>
<td>&lt;0.001</td>
<td>2.00 (1.87–2.14)</td>
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<td>Renal failure requiring dialysis</td>
<td>0.4</td>
<td>0.5</td>
<td>0.047</td>
<td>1.33 (1.00–1.75)</td>
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<td>Deep-vein thrombosis or pulmonary embolism</td>
<td>1.1</td>
<td>1.7</td>
<td>&lt;0.001</td>
<td>1.51 (1.29–1.76)</td>
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ChEVAR

• Can treat complex anatomy
• Off the shelf availability (urgent/emergent cases)
ChEVAR

- Can treat complex anatomy
- Off the shelf availability (urgent/emergent cases)
- Off-label use of combined technology
- Endograft/stent interactions are “unknown”
- Durability still being determined
502/517 had no evidence of a type 1a endoleak (97.1% success rate)
The PROTAGORAS study to evaluate the performance of the Endurant stent graft for patients with pararenal pathologic processes treated by the chimney/snorkel endovascular technique

Konstantinos P. Donas, MD, Giovanni B. Torsello, MD, Gianluca Piccoli, MD, Georgios A. Pitoulias, MD, Giovanni Federico Torsello, MD, Theodosios Bisdas, MD, Martin Austermann, MD, and Daniele Gasparini, MD, Münster, Germany; Udine, Italy; and Thessaloniki, Greece
Why does this work?

• Patency of the stented vessel
  – Avoidance of renal failure and visceral ischemia
Why does this work?

• Patency of the stented vessel
  – Avoidance of renal failure and visceral ischemia

• Aneurysm exclusion
  – Imperative not to compromise both fixation and seal
Success of EVAR

- Fixation
- Type 1a Endoleak
- Seal
ChEVAR

Type 1a Endoleak
Evaluate *in vitro/micro CT*
Background

• A 25 mm and 36 mm Endurant II Stent Graft and two 7mm Covered Stents were deployed in a angulated mock vessel
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- The location of renal ostia were varied between each deployment configuration
Background

- A 25 mm and 36 mm Endurant II Stent Graft and two 7mm Covered Stents were deployed in an angulated mock vessel.
- The location of renal ostia were varied between each deployment configuration.
- Unpressurized 2D and Micro CT Images were captured.
25 mm Endurant II
36 mm Endurant II
36 mm Endurant II
Conclusions

• ChEVAR is gaining acceptance as a safe and effective procedure

• Need more analysis of endograft/stent interaction and longer term studies

• *Suprarenal device ChEVAR separates fixation and seal to minimize the risk of type 1A endoleak*
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