Accurate Placement Of Thoracic Endografts Parallel To The Aortic Arch By Controlling Device Angulation Improves Outcomes: Techniques For Doing

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Disclosures
- Consultant
  - WL Gore
  - Medtronic

History of TEVAR
- Early 1950's - First Open Repair
- 1950
- 1960
- 1970
- 1980
- 1990
- 2000
- 2010
- 2020

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TEVAR Applications
Significant Variation in Age, Aortic Diameter, & Blood Flow Velocities

**Pathology**
- Aneurysm
- PAU
- IMH
- Dissection
- Trauma
- ABF/AEF
- Coarctation

**Average Age**
- 60’s-70’s
- 60’s-70’s
- 50’s-60’s
- 50’s-60’s
- 20’s-30’s
- 60’s-70’s
- 10’s-30’s

First Generation Devices

- **Gore TAG 2005**
- **Medtronic Talent 2008**
- **Cook TX2 2008**

Failure Modes of Thoracic Endografts

- Delivery
- Deployment
- Conformability
- Collapse
- Material Failure
- "Equal-opportunity hazard"

Malapposition

- Bird beaking

Graft Compression

Current US Devices

- **Gore CTAG 2011**
- **Medtronic Valiant 2012**
- **Cook TX2 2009**
- **Bolton Relay 2012**
Increasing Complexity of Pathology

Unmet Needs?
- Delivery
- Trackability
- Deployment
- Control
- Two-stage
- Post-Deployment
  Modification
- Fine Tune

Next Generation Devices
- Cook Alpha
- Medtronic Valiant Evo
- Gore CTAG with Active Control

Evolution of Zenith Alpha

<table>
<thead>
<tr>
<th>Zenith TX4 Endovascular Graft</th>
<th>Zenith Alpha/Thoracic Endovascular Graft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel stents</td>
<td>Nitinol stents</td>
</tr>
<tr>
<td>Standard polyester</td>
<td>Thoracic, more tightly woven polyester</td>
</tr>
<tr>
<td>Covered proximal stent</td>
<td>Bare, rounded proximal stent</td>
</tr>
<tr>
<td>20-24 Fr introduction system</td>
<td>16-20 Fr introduction system</td>
</tr>
<tr>
<td>12-42 mm graft diameter</td>
<td>18-46 mm graft diameter</td>
</tr>
<tr>
<td>MR conditional</td>
<td>MR conditional (improved MR compatibility)</td>
</tr>
</tbody>
</table>

Medtronic VALIANT EVO*

- 4 Fr reduction in profile facilitates vascular access
  - 20 x 30 (8 mm)
  - 20 x 50 (12.7 mm)
- Proximal closed web configuration with tip capture is tailored for specific anatomies and pathologies
- Expanded size matrix offers anatomical customization
  - Longer 225 mm length
  - Smaller 20 mm diameter
  - Increased 5 & 6 mm tapering
- Very flexible graft conforms to high angulation
- More ergonomic delivery system for controlled deployment

Staged Deployment
- Gore CTAG with Active Control

* Technology under development

All products are under development and not available or approved for sale in any market.
Gore CTAG with Active Control Post Deployment Modification

Future of TEVAR
- Ease of delivery
- Controlled deployment
- Post-deployment modification
- Conformable to wide range of anatomy
- Post-implantation surveillance

Thank You

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