EndoAnchors for Short or Poor AAA Necks
Comparative Advantages and Clinical Results

William D. Jordan, Jr., M.D.
John E. Skandalakis Chair in Surgery
Professor and Chief
Division of Vascular Surgery and Endovascular Therapy
Emory University
Atlanta, Georgia
November 13, 2018

DISCLOSURES
• CME Standards → NONE
• Clinical Investigator – paid to Emory
  – Gore, Medtronic, Cook, Endologix, Trivascular, Bolton
• Consultant – paid to Emory
  – Gore, Medtronic, Cardiovascular
• Equity Shareholder → None

OPTIONS FOR REPAIR IN SHORT NECK AAA
• Open repair
• Fenestrated repair
• Chimney repair

EASIER OPTION FOR SHORT NECK AAA
EndoAnchor reinforces seal zone

ANCHOR Registry: Capturing Real-World Usage
Initiated in 2012

Registry Design: Prospective & Observational, International & Multi-Center, Dual-arm Registry with Core Lab Analysis
Registry Principal Investigators:
Europe: Dr. Jean-Paul de Vries – Chief of Vascular Surgery, St. Antonius Hospital
US: Dr. William Jordan – Chief of Vascular Surgery, Emory University School of Medicine

Treatment Arms:
"Primary" "Revision"

Enrollment & Duration:
Enrollment began 2012 and patients will be followed for 5 years
Follow-up:
Per Standard of Care at each center & discretion of Investigator

>800 Patients Enrolled
*Expanded registry to include Thoracic and Advanced Disease arms.

ENDURANT™ + HELI-FX™ SHORT NECK COHORT
70 patients from the ANCHOR Registry

90% AAA Class III/IV
17% Symptomatic presentation
Increased risk of morbidity/mortality
31% Urgent/Emergent cases
Requires an off-the-shelf solution

Mean Anatomical Characteristics (Core Lab)

ENDO Anchors

- 27% Male
- 73% Female

Mean Age:
71.3 Years

Infrarenal Diameter:
52.7 mm

Infrarenal Angulation:
20.4°

Avg Neck Calcium Thickness:
1.21 mm

Avg Neck Thrombus Thickness:
0.85 mm

Mean-Channel Diameter:
23.7 mm

Mean-Channel Thrombus:
2.4 mm

Mean-Channel Calcium:
1.7 mm
ENDURANT™ + HELI-FX™ SHORT NECK COHORT
1-Year Outcomes

**Technical Success:** 88.6% (62/70)

1 month 12 months

- **Type 1a Endoleak**: 6.8% (4/59) 1.9% (1/53)
- **Endograft Migration**: N/A
- **2nd Endo Procedure**: 4.7% (3/64)

Encouraging early outcomes in a challenging patient population

ENDURANT™ + HELI-FX™ SHORT NECK INDICATION

- <10mm down to 4mm length*
- 19 – 32mm diameters
- ≤ 60˚ infrarenal angulation
- Femoral-only approach
- No renal instrumentation
- Off-the-shelf
- 18 – 20 Fr OD for Endurant
- 16 Fr OD for Heli-FX

* Core Lab defined neck length: length over which neck diameter remains within 10% of infrarenal diameter

COMPARING OPTIONS SHORT NECK AAA

**Reference Groups:** F-EVAR (n=3029, 51 studies), Ch-EVAR (n=465, 27 studies)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>ANCHOR Short Neck</th>
<th>F-EVAR</th>
<th>Ch-EVAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximal Neck Length</td>
<td>6.9mm (70)</td>
<td>5.4mm (643)</td>
<td>3.4mm (267)</td>
</tr>
<tr>
<td>Infrarenal Angulation</td>
<td>20.6° (69)</td>
<td>21.2° (158)</td>
<td>67.1° (61)</td>
</tr>
<tr>
<td>Symptomatic</td>
<td>17.1% (70)</td>
<td>0.0% (732)</td>
<td>15.9% (220)</td>
</tr>
<tr>
<td>Index Procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure Time</td>
<td>148 min (70)</td>
<td>215 min (2098)</td>
<td>224 min (247)</td>
</tr>
<tr>
<td>Fluoro Time</td>
<td>35 min (44)</td>
<td>54 min (1108)</td>
<td>51 min (292)</td>
</tr>
</tbody>
</table>

Comparing treatment option results for short neck AAA

**ENDOANCHORS offer better results compared to alternatives**

**Primary Outcomes**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>ANCHOR Short Neck</th>
<th>F-EVAR</th>
<th>Ch-EVAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1a Endoleak at 1-month</td>
<td>6.8% (5/70)</td>
<td>3.1% (15/497)</td>
<td>6.9% (15/221)</td>
</tr>
<tr>
<td>Type 1a Endoleak at 1-year</td>
<td>1.9% (1/53)</td>
<td>1.4% (7/496)</td>
<td>1.0% (7/70)</td>
</tr>
<tr>
<td>Aneurysm Expansion at 1-year</td>
<td>0.0% (0/54)</td>
<td>2.4% (11/466)</td>
<td>6.6% (15/221)</td>
</tr>
<tr>
<td>2nd Endo Procedures through 1-year</td>
<td>4.7% (3/64)</td>
<td>15.7% (10/64)</td>
<td>10.0% (10/98)</td>
</tr>
</tbody>
</table>

These techniques are not mutually exclusive!!!
ENDURANT™ + HELI-FX™ SHORT NECK THERAPY

How does it complement existing options?

- **Contrast and Radiation**
  - Low fluoro times equals less radiation
  - Low contrast

- **Economics**
  - Fewer devices leads to lower costs
  - Short procedure time
  - Fewer reinterventions

- **Encouraging 1-Year Outcomes**
  - 1.9% type Ia [N=1]
  - No conversions or ruptures
  - Only 1 neck-related 2nd procedure

ENDURANT™ + HELI-FX™ SHORT NECK THERAPY

Conclusions

- Complementary treatment option for hostile neck AAAs
- Increases stability of proximal seal = enhanced remodeling
- Off-the-shelf for urgent/emergent and symptomatic patients
- Encouraging clinical outcomes in challenging patient cohort

THANK YOU