Initial Experience with Endurant IIS

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Disclosures....

Hybrid endograft solution for complex iliac anatomy: Zenith body and Excluder limbs.

Cook Zenith for short necks

Gore Excluder limbs for small and angulated iliacs
Evolution...

Medtronic Endurant Graft

Active proximal fixation with suprarenal stent and barbs

+ Flexible Limbs
Evolution...
Medtronic

Endurant: July, 2008
Endurant II: January, 2012
Endurant IIs: October, 2014
Key differences

1. Shortened ipsilateral leg, *always* 20mm longer than the C/L leg
2. 4 internally sewn limb stents on ipsilateral leg
3. Second marker at distal end of ipsilateral leg
4. Both leg diameters fixed at 14mm
The ‘e’ shaped marker assists with A/P orientation

Radiopaque marker at the bifurcation assists with contralateral limb overlap alignment

Gate marker facilitates cannulation

Double markers ipsilateral limb

Radiopaque markers
Advantages

• Based on well-proven Endurant II Design
Advantages

• Based on well-proven Endurant II Design

• 3 piece Design
Advantages

• Based on well-proven Endurant II Design

• 3 piece Design
  – In situ sizing
  – Flexible overlap
  – Precise landing
Advantages

• Based on well-proven Endurant II Design

• 3 piece Design
  – In situ sizing
  – Flexible overlap
  – Precise landing

„difficult“ Anatomy
Acute cases
Less experienced operators
Inventory
Short distal landing zone

<table>
<thead>
<tr>
<th>EII Limit</th>
<th>Ells Feature</th>
<th>Ells Advantage</th>
<th>Ells Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ipsilateral length is fixed (124,145,166mm)</td>
<td>Ipsilateral overlap can go from 3 to 5 cm</td>
<td>In situ sizing, better accuracy</td>
<td>Less type Ib endoleaks</td>
</tr>
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In-situ Sizing

EIIIs enables in situ sizing with select ipsilateral limbs, allowing a 3–5 stent overlap for adjustment during case. FROM 135mm TO 273mm IPSI LENGTH RANGE

FROM 135mm TO 273mm IPSI LENGTH RANGE

FROM 135mm TO 273mm IPSI LENGTH RANGE
Patient #2 (S.E.)

- 73 YO Male
- Infrarenal AAA
  - Dmax: 60 mm
- Hypertension
Intraoperative Images
X-Ray and CTA
Patient #3 (N.R.)

- 77 YO Male
- Infrarenal AAA
  - Dmax: 58 mm
- CAD
- COPD
- Hostile Abdomen
Intraoperative Images
Completion, X-Ray and CTA
Advantages

• Based on well-proven Endurant II Design

• 3 piece Design

• Standard 14mm limb diameter
Advantages

• Based on well-proven Endurant II Design

• 3 piece Design

• Standard 14mm limb diameter
  – Customization options
Advantages

• Based on well-proven Endurant II Design

• 3 piece Design

• Standard 14mm limb diameter
  – Customization options:
    - Narrow iliac diameter
    - Wide iliac diameter
    - Narrow Aortic Bifurcation
### Bilateral small/stenotic CIA

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<tr>
<td>32/36 bifs lack 13mm ipsi All bifs lack 10mm ipsi</td>
<td>3-piece, iliac limbs from 10 to 28mm both sides</td>
<td>Less oversizing in the iliacs.</td>
<td>Less occlusions due to oversizing/overlapping in iliacs</td>
</tr>
<tr>
<td>Ipsilateral limb overlapping in the iliac</td>
<td>Ipsilateral limb overlapping in the sac</td>
<td>Less material in the iliacs</td>
<td>Less occlusions due to excessive graft material in iliacs</td>
</tr>
<tr>
<td>Ipsilateral leg in stenotic iliac may cause difficult nose retrieval</td>
<td>Ipsilateral short leg not landing in iliac. Junctions in the sac.</td>
<td>Easier retrieval of main body nosecone</td>
<td>Less risk of conversion</td>
</tr>
</tbody>
</table>

**Better customization options**

Ells overcomes limitations of 2-pieces stent graft on the ipsilateral side.

**DOWN TO 10mm BOTH SIDES**
 Patient #4 (F.W.)

- 74 YO Female
- Infrarenal AAA
  - Dmax: 55 mm
- CAD
- PAD
- COPD
Intraoperative Images
Intraoperative Images
Postoperative CTA
Bilateral dilated CIA

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<th>EII Advantage</th>
<th>EII Benefit</th>
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<tbody>
<tr>
<td>All bifs lack 24,28mm ipsi</td>
<td>3-piece, iliac limbs from 10 to 28mm both sides</td>
<td>Better distal sealing</td>
<td>Less reinterventions due to Type Ib EL and hypo coverage avoided</td>
</tr>
</tbody>
</table>

Better customization options

EIIls overcomes limitations of 2-pieces stent graft on the ipsilateral side

UP TO 28mm BOTH SIDES

10,13,16,20,24,28mm
## Small aortic bifurcation

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<td>Bif flared (20mm distally) configuration flares early</td>
<td>Limb distal flaring more distal than Bif flaring</td>
<td>Flaring happens in the iliac, smaller diameter at the bifurcation.</td>
<td>Lower risk of limb collapse/occlusion</td>
</tr>
<tr>
<td>10mm limb available only on the contralateral side</td>
<td>10mm available both sides</td>
<td>Smaller diameter at the bifurcation.</td>
<td>Lower risk of limb collapse/occlusion</td>
</tr>
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</table>

### Better customization options

Provides up to a 20% reduction in distal diameter compared to select Endurant II bifurs
Patient #1 (K.M.)

- 80 YO Female
- Infrarenal AAA
  - Dmax: 51mm
  - Penetrating Ulcer
- Hypertension

Narrow aortic bifurcation (18mm)
Intraoperative Images
Intraoperative Images
X-ray and CTA
• **Makes In-situ Sizing** possible

• **Expands Anatomical Customization**

• **Improves Inventory Management**
Patient #5 (H-H.C.)

- 63 YO Female
- Infrarenal AAA
  - Dmax: 59 mm
- Hypertension
- **Severe** COPD
Intraoperative Images
Intraoperative Images
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