Iliac branched devices

versus

Iliac branched endoprosthesis

Differences in selection and usage

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Unit of Vascular Surgery

University of Perugia, Italy
Disclosure

Speaker name:

..................................Fabio Verzini...............................................

☐ I have the following potential conflicts of interest to report:

☒ Consulting for Cook, Gore, Medtronic
Pelvic ischemia and quality of life scores after interventional occlusion of the hypogastric artery in patients undergoing endovascular aortic aneurysm repair

Elixène Jean-Baptiste, MD, PhD, Sophie Brizzi, MD, Michel A. Bartoli, MD, PhD, Nirvana Sadaghianloo, MD, Jean Baquè, MD, Pierre-Edouard Magnan, MD, Réda Hassen-Khodja, MD

Journal of Vascular Surgery, 2014; 60: 40-49

<table>
<thead>
<tr>
<th>HA occlusion in 71 pts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal pelvic ischemic complications</td>
<td>2.8%</td>
</tr>
<tr>
<td>Buttock claudication</td>
<td>25.3%</td>
</tr>
<tr>
<td>Persistent claudication (@18 months)</td>
<td>85%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk factor for buttock claudication</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young age</td>
<td>.92</td>
</tr>
<tr>
<td>Distal embolization</td>
<td>3.5</td>
</tr>
</tbody>
</table>
Endovascular repair by iliac branch device of aneurysms involving the iliac bifurcation can be accomplished with very low morbidity and mortality rates.
Available sizes:

- Common iliac segment:
  - L1 = 45 or 61 mm
  - D1 = 12 mm

- External iliac segment:
  - L2 = 41 or 58 mm
  - D2 = 10 or 12 mm

- Sidebranch segment:
  - Length = 14 mm
  - Diameter = 8 mm
Endovascular treatment of iliac aneurysm: Concurrent comparison of side branch endograft versus hypogastric exclusion

Fabio Verzini, MD, Gianbattista Parlani, MD, Lydia Romano, MD, Paola De Rango, MD, Giuseppe Panuccio, MD, and Piergiorgio Cao, MD, FRCS, Perugia, Italy

Table III. Perioperative results (30 days)

<table>
<thead>
<tr>
<th></th>
<th>Group I = 32</th>
<th></th>
<th>Group II = 42</th>
<th></th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Mortality/rupture</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>.02</td>
</tr>
<tr>
<td>Procedure time (min)</td>
<td>153</td>
<td>6</td>
<td>160</td>
<td>7</td>
<td>.02</td>
</tr>
<tr>
<td>Fluoro time (min)</td>
<td>45 ± 23</td>
<td></td>
<td>31 ± 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contrast (cc)</td>
<td>182 ± 35</td>
<td></td>
<td>180 ± 42</td>
<td></td>
<td>.8</td>
</tr>
<tr>
<td>Technical failure</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>External iliac limb occlusion</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Iliac endoleak</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>19</td>
<td>.07</td>
</tr>
<tr>
<td>Reintervention</td>
<td>5</td>
<td>16</td>
<td>2</td>
<td>5</td>
<td>.2</td>
</tr>
<tr>
<td>Local complications</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Pseudoaneurysm</td>
<td>1</td>
<td>2</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Wound dehiscence</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>2</td>
<td>–</td>
</tr>
<tr>
<td>Wound hemorrhage</td>
<td>1</td>
<td>3</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Lymphorrea</td>
<td>–</td>
<td>–</td>
<td>2</td>
<td>5</td>
<td>–</td>
</tr>
</tbody>
</table>
Endovascular treatment of iliac aneurysm: Concurrent comparison of side branch endograft versus hypogastric exclusion

Fabio Verzini, MD, Gianbattista Pariani, MD, Lydia Romano, MD, Paola De Rango, MD, Giuseppe Panuccio, MD, and Piergiorgio Cao, MD, FRCS, Perugia, Italy


Table IV. One-year results

<table>
<thead>
<tr>
<th>Patients</th>
<th>Group I = 23</th>
<th></th>
<th>Group II = 37</th>
<th></th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Unrelated mortality</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Reinterventions</td>
<td>0</td>
<td>-</td>
<td>2</td>
<td>5</td>
<td>.1</td>
</tr>
<tr>
<td>Iliac endoleak</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>19</td>
<td>.1</td>
</tr>
<tr>
<td>Pelvic ischemia*</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>22</td>
<td>.1</td>
</tr>
<tr>
<td>Iliac diameter decrease</td>
<td>7</td>
<td>30</td>
<td>13</td>
<td>35</td>
<td>.8</td>
</tr>
<tr>
<td>Iliac limb occlusion</td>
<td>0</td>
<td>-</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
Long-term Results of Iliac Aneurysm Repair with Iliac Branched Endograft: A 5-Year Experience on 100 Consecutive Cases

G. Parlani, F. Verzini, P. De Rango, D. Brambilla, C. Coscarella, C. Ferrer, P. Cao

Figure 3. Kaplan-Meier estimates of internal iliac side-branch patency rate.
Long-term Results of Iliac Aneurysm Repair with Iliac Branched Endograft: A 5-Year Experience on 100 Consecutive Cases

G. Pariani\textsuperscript{a}, F. Verzini\textsuperscript{a}, P. De Rango\textsuperscript{a,\ast}, D. Brambilla\textsuperscript{a}, C. Coscarella\textsuperscript{b}, C. Ferrer\textsuperscript{b}, P. Cao\textsuperscript{b}

Perugia-Rome experience 2006-2013
123 IBDs

SeSG (Fluency) in 76 pts
- tortuosity
- hypogastric aneurysm

BeSG (V12) in 38 pts
- calcification
- small distal common iliac diameter
- stenosis

9 cases with both BS, excluded
CLINICAL FAILURE
(hypogastric occlusion, HA reintervention, iliac growth > 3 mm)

Clinical success

BeSG (V12)
SeSG (Fluency)

Cum Survival

77%
79%

p = 0.22
Limitations
Male 60 y.o.

2012: Stent fracture

Left hypogastric aneurysm 60 mm
2007 Left iliac side branch
Distal Type I endoleak
Early experience with the Excluder® Iliac Branch Endoprosthesis

C. FERRER, F. DE CRESCENZO, C. COSCARELLA, P. CAO

TABLE 1.—Preoperative morphological characteristics.

<table>
<thead>
<tr>
<th>Indication for treatment</th>
<th>CIA diameter (mm)</th>
<th>IIA diameter (mm)</th>
<th>IIA length (mm)</th>
<th>EIA diameter (mm)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient # 1 Left CIA aneurysm</td>
<td>33</td>
<td>7</td>
<td>30</td>
<td>9</td>
<td>AAA</td>
</tr>
<tr>
<td>Patient # 2 Left CIA aneurysm</td>
<td>35</td>
<td>10</td>
<td>18</td>
<td>11</td>
<td>Isolated CIA aneurysm</td>
</tr>
<tr>
<td>Patient # 3 Right CIA aneurysm</td>
<td>40</td>
<td>9</td>
<td>39</td>
<td>11</td>
<td>Previous EVAR with straight endograft</td>
</tr>
<tr>
<td>Patient # 4 Right CIA aneurysm Left CIA aneurysm</td>
<td>42</td>
<td>9</td>
<td>26</td>
<td>10</td>
<td>AAA</td>
</tr>
<tr>
<td>Patient # 5 Right CIA aneurysm Left CIA aneurysm</td>
<td>35</td>
<td>12</td>
<td>43</td>
<td>13</td>
<td>AAA</td>
</tr>
</tbody>
</table>

Device Specifics

• **Iliac branched component**
  – Proximal diameter: 23 mm
  – External iliac leg diameter: 10 / 12 / 14.5 mm
  – Overall length: 10 cm

• **Internal iliac component**
  – Overall length: 7 cm
  – Distal diameter: 10 / 12 / 14.5 mm
  – Deploys hub-to-tip
Anatomic Requirements

- Proximal Common Iliac Diameter: ≥ 17 mm
  - Internal / external iliac diameter: 6.5–13.5 mm
  - Distance from lowest renal to iliac bifurcation: ≥ 16.5 cm
  - Minimum diameter at Iliac bifurcation ≥ 14 mm
Left hypogastric occlusion

Right side branch

Extreme tortuosity: buddy wire

Adjunctive CP stent
Perugia experience

14 Gore Excluder IBE implanted in 14 patients (2013-2015)

Mean follow-up 8 months

Technical & clinical success 100%

Type 2 endoleak 20%

No aneurysm growth

Internal iliac component patency was maintained in all cases
Conclusions

• Iliac branching is safe & effective in the long term
• Persisting iliac aneurysm exclusion @ 5 years with low rate of buttock claudication
• Multiple options available
• Newer devices are promising, long term results awaited