Internal Iliac Arteries May Not Have To Be Revascularized In EVAR Procedures: It Is Usually Safe Not To Do So

D Raithel, ZH Wu
Klinikum Nürnberg, Germany

New York City
Veth 2015
November 17-21

Disclosures
• None

Background

1. The presence of a suitable distal landing zone is an important requirement for EVAR.
2. Short or aneurysmal CIAs occur in about 20% to 30% of all AAA patients (14.4% in Nürnberg)

Preserving one or both hypogastric arteries

Endovascular techniques:
Bracketed iliac grafts
Chimney grafts
Sandwich technique
Bellbottom limbs
Double-barrel technique with commercially available devices
Problems: long-term results are still uncertain

Application of EVAR in aorto-iliac aneurysm disease

1. EVAR with iliac branch devices (IBD)
2. EVAR with preliminary or simultaneous internal iliac artery embolization (HAE)

Morphological criteria for IBD

• CIA diameter > 24mm
• Landing zone in the external iliac artery > 15mm
• External iliac artery diameter: 8-12mm
• An internal iliac artery length > 10mm

A significant proportion of aortoiliac aneurysms are excluded (>50% patients unsuitable)

IBD vs Hypogastric exclusion

- 32 in Group I (IBD) and 42 in Group II (hypogastric coverage and embolization).
- Fluor time was 48 minutes in Group I vs. 31 minutes in Group II (P = .04).
- No intestinal ischemia or deaths occurred.
- Iliac endoleak was present in eight patients (19%) in Group II and in one patient in Group I (4%) (P = .1).
- Buttock claudication or new impotence were more frequent after hypogastric exclusion: eight patients in Group II and in one patient in Group I (P = .1).


Preliminary HAEs (Nürnberg hospital)

1. Bilateral HAEs: about 4 to 6 weeks between the procedures
2. Stent-graft implantation: about 4 to 6 weeks after unilateral or the second procedure of bilateral HAEs

Types of Iliac Artery Anatomy in HA Embolization Procedures

<table>
<thead>
<tr>
<th></th>
<th>Coil (n=19)</th>
<th>AVP (n=114)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIA aneurysm</td>
<td>15 (78.9%)</td>
<td>94 (82.5%)</td>
<td>0.963</td>
</tr>
<tr>
<td>HA aneurysm</td>
<td>1 (5.3%)</td>
<td>4 (3.5%)</td>
<td>1.000</td>
</tr>
<tr>
<td>CIA + HA aneurysms</td>
<td>2 (10.5%)</td>
<td>13 (11.4%)</td>
<td>1.000</td>
</tr>
<tr>
<td>Too short CIA</td>
<td>1 (5.3%)</td>
<td>3 (2.6%)</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Literatures systematically reviewed

The literature review identified 25 relevant studies according to include criterias.

The percentage of symptom of buttock claudication in coils group versus AVP group

<table>
<thead>
<tr>
<th></th>
<th>Coil group</th>
<th>AVP group</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases number</td>
<td>535</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>BC number</td>
<td>206 (38.5%)</td>
<td>29 (15.8%)</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The percentage of new sexual dysfunction in coils group versus AVP group

<table>
<thead>
<tr>
<th></th>
<th>Coil group</th>
<th>AVP group</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases number</td>
<td>339</td>
<td>131</td>
<td></td>
</tr>
<tr>
<td>SD number</td>
<td>25 (16.2%)</td>
<td>4 (3.1%)</td>
<td>0.001</td>
</tr>
</tbody>
</table>
Conclusions from literature

Risk of buttock claudication (BC) or sexual dysfunction after HAE is lower in the AVP group compared to the coil group.

Buttock claudication or sexual dysfunction following HAE will often resolve.

HAE with endograft extension into the external iliac artery has a low risk and may be an alternative treatment in patients with aortoiliac aneurysms.

Conclusions from literature

IBDs are very expensive in comparison to HAEs.

About 50% of aortoiliac aneurysms are excluded from IBDs.

Endoleaks related to the internal iliac artery branch may lead to early and costly reintervention.

Conclusions from literature

IBDs do not provide absolute protection from pelvic ischemic symptoms due to the risk of branch occlusion.

The Achilles heel of all IBDs is the risk of late occlusion due to graft kinking at the level of iliac tortuositites.

Thank you for your attention!

Conclusions

1. The AVP affords easier and more precise placement and provides more complete occlusion, with fewer intraoperative complications than coil embolization.

2. HA embolization with AVP can make the incidence of buttock claudication and new sexual dysfunction lower than with coils.