The Iliac Seal Zone In EVAR: Its Dynamics And Clinical Consequences

A word of caution

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Disclosures

• Medtronic
• W.L Gore
• Philips
• Endologix

Proximal & Distal Seal

• Key in successful EVAR treatment
• Lots of interest in the proximal part
• Very little interest in the bottom part

Downward migration

• Big thing in the past
• Hooks & barbs took care of that problem

Distal seal

• Nobody seem to care about it too much
• Never hooks/barbs distally
• No need to worry

There was a time that we did worry

The importance of iliac fixation in prevention of stent graft migration

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• AneuRx graft
• Ultra stiff
• Current endograft limbs are all flexible: problem solved!
How come I find patients like this?

PREOP  30-DAY  2 Y  3 Y

L4
L5
S1

Aim of the study

• To identify the dynamics of the distal sealing zone over time and its association with clinical events.

Methods

• Prospective EVAR database 2004-2012
• Inclusion criteria were:
  • EVAR for degenerative AAA
  • Iliac landing zone in the common iliac artery
  • Surveillance using CTA

Endpoints

• Primary endpoint:
  • Dilatation of the common iliac arteries
  • Endograft limb retraction
Results

- N=341 (597 common iliac arteries)
- Median follow-up: 23.4 months (19.3-42.8)

Results

Iliac seal dynamics in time

- Iliac dilatation beyond the implanted graft diameter was present in 73 iliac arteries (12.2%).
- Retraction ≥3mm was observed in 149 (25%) iliac arteries

Results

Risk factors for sealing complications

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Incidence</th>
<th>Incidence</th>
<th>P-value</th>
<th>Risk Rate</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump limit dilation</td>
<td>12 (3.5%)</td>
<td>14 (4.1%)</td>
<td>&lt;0.001</td>
<td>1.622</td>
<td>1.065 - 2.490</td>
</tr>
<tr>
<td>Pump limit retraction</td>
<td>16 (4.7%)</td>
<td>16 (4.7%)</td>
<td>0.99</td>
<td>1.079</td>
<td>0.770 - 1.501</td>
</tr>
<tr>
<td>Ectatic iliacs</td>
<td>9 (2.6%)</td>
<td>9 (2.6%)</td>
<td>&lt;0.001</td>
<td>1.005</td>
<td>1.000 - 1.010</td>
</tr>
<tr>
<td>Ectatic iliacs (mean)</td>
<td>28 (8.2%)</td>
<td>28 (8.2%)</td>
<td>0.99</td>
<td>1.004</td>
<td>0.996 - 1.012</td>
</tr>
</tbody>
</table>

Key points

- Iliac dilatation and retraction is a common event
- As downward migration has become exceedingly rare, sideways displacement of the limbs is a worrisome sign
- NOT CLEARLY VISABLE ON ULTRASOUND!
Key points

- Using ectatic iliacs as distal sealing zone predisposes the patient for sealing problems.
- OR: 5.5 for graft of 20 mm or greater
- Durability of bell-bottom grafts is doubtful

Recommendations

- Maximize the iliac seal zone by extending close to the bifurcation
- Extra attention should be given to surveillance of patients with distal seal in ectatic iliac arteries
- Since CT is necessary to determine progressive loss of seal and/or retraction, these patients should not be followed using DUS-only

Thank you