Use of Parallel Grafts With EVAR To Treat Juxta- And Pararenal AAAs: A Simple Safe Technique

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Disclosures

• No Financial Disclosures
• I didn’t pick the title
• I am not sure there are any treatments for Juxta/Pararenal aneurysms that are Simple and Safe

The Pericles Registry

• 517 patients from 13 centers.
• Mean Follow-up of 17 Months
  – 94% Primary Patency of 898 Chimney grafts
  – Mean Sac Regression = 4.4 mm
  – No aortic ruptures
  – Overall survival of 79%

Comparable?

Standardized Design

| Device, n (%) | Endurant   | 260 (49.5) |
|              | Zenith     | 91 (17.3)  |
|              | Excluder   | 75 (14.3)  |
|              | Valiant    | 51 (9.0)   |
|              | Gore TAG   | 28 (5.3)   |
|              | Intent     | 17 (3.2)   |
|              | Zenith TX2 | 11 (2.1)   |
|              | Talent     | 4 (0.7)    |

Types of chimney grafts (%)

| Device, n (%) | Balloon-expandable covered | 442 (49.2) |
|              | Self-expanding covered     | 355 (39.6) |
|              | Balloon-expandable bare metal | 103 (11.2) |
|              | Bare metal stent/"endolining" | 220 (25.4) |

Instructions For Use
Improving “Safety”

Step 1: Define Boundary Parameters

Anatomic Severity Scoring Systems

• Shown to have utility in predicting adverse outcomes.
• Are they adequate for defining boundary parameters?

Minimal Neck Requirements

20 mm Total Seal
16 mm “Parallel” Seal
4 mm “Standard” Seal

What Constitutes “Neck” Length?

Abrupt Transition

Discreet Neck

Parallel Endografts

Christmas Tree Shape

Gradual Increasing Diameter
Determining Length of Reverse Tapered Necks

- Based on Sealing Diameter of the Aortic Endograft (Endograft Diameter minus 2 mm)

Grading of Neck

<table>
<thead>
<tr>
<th>Grade</th>
<th>Reverse Taper</th>
<th>Calcification</th>
<th>Thrombus/Atheroma</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Healthy)</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>B (Adequate)</td>
<td>&lt;2 mm</td>
<td>&lt;25% and ≤2 mm</td>
<td>≤25% and ≤2 mm</td>
</tr>
<tr>
<td>C (Marginal)</td>
<td>2-5 mm</td>
<td>25-50% or &gt;2 mm</td>
<td>25-50% or &gt;2 mm</td>
</tr>
<tr>
<td>D (Diseased)</td>
<td>&gt;5 mm</td>
<td>&gt;50%</td>
<td>&gt;50%</td>
</tr>
</tbody>
</table>

4 mm of "Grade A" Infrarenal Neck?

Grade H

If a second, more distal seal zone is present (hourglass shape), then that segment will be reported as Grade H and documented in terms of centerline length, smallest aortic diameter, and length from the lowest renal artery.

Again, Grade H segments will be considered irrelevant (and not reported) if at least 15 mm of a Grade A or B seal zone is present.

Type I(H) Endoleak

Angulation

- Alpha Angle
  - Immediate Suprarenal
  - Immediate Infrarenal
- Beta Angle
  - Immediate Infrarenal
  - Body of Aneurysm
- Alpha-Beta Distance
  - Length between the vertices of the the Alpha and Beta angles
- Sigma Angle
  - Immediate Suprarenal
  - Distal Thoracic
The Pericles Classification

- Grade A = 3 mm
- Grade D = 10 mm
- Grade H zone 6 cm distal to the renals
- Alpha angle = 60 degrees
- Beta angle = 40 degrees
- α-β distance = 6 cm
- Sigma Angle = 0 degrees

Summary

- The Pericles Registry has validated the use of Parallel Endografts as a treatment option for Juxta/Pararenal Aneurysms
- The Safety can likely be improved by defining Boundary Parameters
- As a next step, we have defined a more Robust Anatomic Classification Scheme that we hope will allow us to better achieve this goal.