CLINICAL AND RADIOGRAPHIC OUTCOMES FOR PIPELINE® DEPLOYMENT IN TREATING WIDE-NECK ANEURYSMS AT THE INTERNAL CAROTID ARTERY TERMINUS

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DISCLOSURES

None
**WHAT IS THE PIPELINE® DEVICE?**

- During the procedure, a Pipeline (a braided cylindrical mesh device) is implanted across the aneurysm neck and allows for healing of the diseased vessel.

Blood flows into the aneurysm  
Blood flow into the aneurysm slows  
Blood no longer enters the aneurysm
· Pipeline Embolization Device (PED) first prospective multicenter trial in 2011

· Approved for cavernous and proximal supraclinoid ICA

· No published series involving aneurysms of the ICA-terminus (Off Label)

METHODS

• Retrospective chart review

• Aneurysm occlusion graded on Raymond-Roy Scale
  • I – Complete obliteration
  • II – Residual neck
  • III – Residual body

• Appropriate antiplatelet therapy and monitoring

**COHORT BREAKDOWN**

<table>
<thead>
<tr>
<th>n (%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>10 (mean age 47)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6 (60%)</td>
</tr>
<tr>
<td>Male</td>
<td>4 (40%)</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>5 (50%)</td>
</tr>
<tr>
<td>AA</td>
<td>3 (30%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>1 (10%)</td>
</tr>
<tr>
<td><strong>Reason for presentation</strong></td>
<td></td>
</tr>
<tr>
<td>Incidental finding</td>
<td>6 (60%)</td>
</tr>
<tr>
<td>Prior or acute SAH</td>
<td>4 (40%)</td>
</tr>
</tbody>
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**Aneurysm sizes:**
- Avg. max diameter = 14.7 mm ± 10.1
- Avg. max neck = 9.3 mm ± 6.3
PROCEDURE

• All PEDs placed from MCA-M1 to supraclinoid ICA (covering ACA origin)

• 8 patients had single pipeline, 1 patient with 2, 1 patient with 3

• 5 had adjunctive coiling

• All patients on DAPT with testing as per institution protocol

• No intra-procedural complication
CLINICAL OUTCOMES

- 0 patients had worsening of mRS post procedure
- 2 complications: Both remained at neurologic baseline
  - 1 small distal SAH
  - 1 stent thrombosed – patient maintained on Plavix
- No ACA strokes despite PED placement “jailing” A1
RADIOGRAPHIC OUTCOMES

• Imaging at follow-up (mean 6.3 months):
  • 6 (60%) Completely or near-completely obliterated (Raymond-Roy I/II)
  • 4 (40%) Residual aneurysm filling (Raymond-Roy III)
• Fusiform aneurysm shape as predictor of incomplete obliteration
  • Fusiform = 80% incomplete occlusion
  • Saccular = 80% near or complete occlusion
CONCLUSION

• The PED can be safely used to treat ICA-terminus aneurysms that are not amenable to other surgical/endovascular options

• Aneurysm shape can serve as a predictor of occlusion outcomes

• Further studies are warranted to study long term efficacy