The Candy-Plug technique using an Excluder aortic cuff: clinical utility and technical aspects

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Disclosure

Speaker name: Yukihisa Ogawa

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
Distal False Lumen Occlusion in Aortic Dissection With a Homemade Extra-Large Vascular Plug: The Candy-Plug Technique

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Candy-Plug technique (Excluder aortic cuff)

Candy-Plug technique (Excluder aortic cuff)

Follow up CT after 8 mos

How to decide appropriate size of Candy-Plug

Ex-cuff = \((a+b)/2 + 10-20\) %

TEVAR with the Candy-Plug technique
### Our clinical experience (2014.7-2017.7)

<table>
<thead>
<tr>
<th>Patient number</th>
<th>N=7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (years) (range)</td>
<td>63 (44 – 78)</td>
</tr>
<tr>
<td>Sex (M:F)</td>
<td>6 : 1</td>
</tr>
<tr>
<td>Etiology</td>
<td>Post type A (2)</td>
</tr>
<tr>
<td></td>
<td>Chronic type B (5)</td>
</tr>
<tr>
<td>Indication of treatment</td>
<td>Aneurysmal dilatation (6)</td>
</tr>
<tr>
<td></td>
<td>Rupture (1)</td>
</tr>
<tr>
<td>Median time after onset to TEVAR treatment (years)</td>
<td>3.8 (1 – 9)</td>
</tr>
<tr>
<td>Mean maximum size of the aorta (mm)</td>
<td>58.7 (44 – 71)</td>
</tr>
</tbody>
</table>
Results

Mean follow up periods: 593 days

☑ Technical success: 6/7 (86 %)
  defined as accurately deployment of the Candy-Plug

☑ Clinical success: 4/7 (57 %)
  defined as no false lumen back flow on f/u CT
<table>
<thead>
<tr>
<th></th>
<th>Diagnosis</th>
<th>Maximum Diameter (mm)</th>
<th>Mean FL diameter (mm)</th>
<th>Ex-cuff (mm)</th>
<th>Follow up period (days)</th>
<th>FL flow</th>
<th>Size change</th>
<th>Re-intervention</th>
<th>outcome</th>
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<td>1</td>
<td>cTBAD</td>
<td>58</td>
<td>27</td>
<td>32</td>
<td>1225</td>
<td>– (2M)</td>
<td>Shrink</td>
<td>TEVAR for type I a EL</td>
<td>Alive</td>
</tr>
<tr>
<td>2</td>
<td>cTBAD</td>
<td>49</td>
<td>45</td>
<td>36</td>
<td>922</td>
<td>– (4M)</td>
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<td>TEVAR for ULP</td>
<td>Alive</td>
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<tr>
<td>3</td>
<td>post type A</td>
<td>71</td>
<td>40</td>
<td>36</td>
<td>555</td>
<td>+</td>
<td>No change</td>
<td>TEVAR for type III EL</td>
<td>Alive</td>
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<tr>
<td></td>
<td>post TEVAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td>Post type A</td>
<td>44</td>
<td>34</td>
<td>36</td>
<td>565</td>
<td>– (1w)</td>
<td>No change</td>
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<tr>
<td>5</td>
<td>cTBAD</td>
<td>57</td>
<td>30</td>
<td>36</td>
<td>222</td>
<td>– (7M)</td>
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<tr>
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<td>34</td>
<td>36</td>
<td>431</td>
<td>+</td>
<td>Shrink</td>
<td>None</td>
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</tr>
<tr>
<td>7</td>
<td>cTBAD</td>
<td>64</td>
<td>32</td>
<td>36</td>
<td>231</td>
<td>+</td>
<td>No change</td>
<td>None</td>
<td>Alive</td>
</tr>
</tbody>
</table>
The cause of persistent FL back flow

Incomplete AVP embolization

Migration of the Candy-Plug
The Candy-Plug Technique: Technical Aspects and Early Results of a New Endovascular Method for False Lumen Occlusion in Chronic Aortic Dissection

Fiona Rohlfss, MD, Nikolaos Tsilimparis, MD, Beatrice Fiorucci, MD, Franziska Heidemann, MD, Eike Sebastian Debus, MD, PhD, and Tilo Kölbl, MD, PhD

J Endovasc Ther 2017; 1-7.

N = 18
Chronic/subacute: 17/1
Follow up periods: mean 9 M (0 - 26 M)
Technical success: 100%, Clinical success: 94%
Complete FL occlusion: 15/18 (83%) on 30-day CT
(rupture, re-intervention, resolved spontaneously)

AVP II (22mm) or ZIP Occluder (20mm) (Cook Medical)
Is Candy-Plug using Excluder aortic cuff feasible?

✓ Quickly and easy to prepare

✓ It takes time to achieve complete AVP embolization
  - with coil or NBCA? or other embolic materials

✓ Maximum size of Ex-cuff is 36 mm
  - using double Ex-cuff or main body may be considered if the large FL of ≥ 36mm

✓ Need long term investigation
The Candy-Plug technique using an Excluder aortic cuff - clinical utility and technical aspects-

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