Carotid Artery Aneurysms: What Endovascular Treatment Can Achieve

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Disclosure

Nothing to disclose
What Causes Carotid Aneurysms?

- Trauma
  - Direct
  - Wiplash Injury
- Iatrogen
  - Central Venous Catheter
  - Carotid Surgery
  - Ear/Nose/Throat Surgery
- Artherosclerosis
- Takayasu’s Arteritis
- Fibromuscular Dysplasie
- Carotid Dissection
- Mycotic Aneurysma
- Tumor Arrosion
Symptoms of Carotid Aneurysms

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulsating Tinnitus</td>
<td>28</td>
</tr>
<tr>
<td>Pulsating Neck Tumor</td>
<td>23</td>
</tr>
<tr>
<td>Function Loss of Cranial Nerves</td>
<td>13</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>7</td>
</tr>
<tr>
<td>Neck Pain</td>
<td>6</td>
</tr>
<tr>
<td>Bleeding</td>
<td>3</td>
</tr>
</tbody>
</table>

n=41 own data
Endovascular Tx Options

- Stent Placement with and without Coiling
  *Flow Diverter*

- Endograft Placement
  *Self-expanding Covered Stents*

  Distal ICA mainly
  Neck mostly
Artherosclerotic Aneurysm

A.Sch. f-65y
pulsating neck tumor
Artherosclerotic Aneurysm

A.Sch. f-65y
pulsating neck tumor

dendograft excludes aneurysm and occludes ECA
A.M. m-44y
- occlusion of left ICA
- now pulse-synchronous tinnitus
- 2 ICA aneurysms
Aneurysms after Carotid Dissection

A.M. m-44y
both aneurysms
treated with
Wallgraft 6 mm

5 y FU:
free of symptoms
or recurrence
False Carotid Aneurysm

R.W. f-43y

Car accident with neck pain

9 months later: pulsating tinnitus
False Carotid Aneurysm

RW f-43 J

additional findings:
- left vertebral artery occlusion
- segmental right vertebral artery occlusion
False Carotid Aneurysm

R.W. f-43y
Postoperative False Aneurysm

D.P. m-67 Y.
carcinoma of the tongue
2 weeks after surgery
growing tumor

Injured ICA with aneurysm
Postoperative False Aneurysm

K.W. m-64y

partial resection of the jaw
Postoperative False Aneurysm

K.W. m-64y

partial resection of the jaw
Contra-Indication for Endovascular Treatment

Mycotic Aneurysms
## Results

<table>
<thead>
<tr>
<th>Patients</th>
<th>41</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 55 y (28-78 y)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men/Women</td>
<td>24/17</td>
<td></td>
</tr>
<tr>
<td>Atherosclerosis</td>
<td>16</td>
<td>39%</td>
</tr>
<tr>
<td>Carotid dissection</td>
<td>11</td>
<td>27%</td>
</tr>
<tr>
<td>Trauma</td>
<td>7</td>
<td>17%</td>
</tr>
<tr>
<td>Postoperative</td>
<td>5</td>
<td>12%</td>
</tr>
<tr>
<td>Tumor</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Interventions</td>
<td>41</td>
<td>100%</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td>Technical success</td>
<td>40/41</td>
<td>97%</td>
</tr>
<tr>
<td>30d-mortality (Stroke, Pneumonia)</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Occlusion</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Recurrent aneurysm (2. Endograft)</td>
<td>1</td>
<td>2%</td>
</tr>
</tbody>
</table>
FU 3 months to 5 years with duplex sonography and CTA

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Recurrence</strong></td>
<td>1/41</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>1/41</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Died</strong></td>
<td>2/41</td>
<td>5%</td>
</tr>
</tbody>
</table>

after 4 weeks and 18 months due to tumor progression
We are lucky.

We can offer the patients two efficient tx options.

In most patients the 2 tx options are competitive.

But in ~10% of the patients they are supplementary.