Endovascular Treatment of Carotid Artery Aneurysms

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Disclosure

Nothing to disclose in regard to this presentation
What causes carotid aneurysms?

- trauma
  - direct
  - whiplash injury
- iatrogen
  - central catheters
  - carotid surgery
  - ENT surgery
- atherosclerosis
- Takayasu arteritis
- fibromuscular dysplasia
- carotid dissection
- mycotic aneurysm
- radiotherapy
- tumor invasion
Symptoms of Carotid Aneurysms

n=41

- pulsating tinnitus 21
- pulsating cervical tumor 31
- loss of cranial nerve function 13
- dysphagia 12
- cervical pain 12
- hemorrhage 5

Without intracranial aneurysms and SAH
Endovascular Tx Options

- stent placement with and without coiling
- flow diverter
- self-expanding stent grafts
  - Wallgraft®
  - Symbiot®
  - Fluency®
  - Viabahn® ...
Wallgraft

artery diameter > 5 mm
9-F sheath
0.035” guide wire

cave: shortening
Fluency & Viabahn
A.Ach. f-65 y
pulsating neck tumor
Atherosclerotic Aneurysm

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

Atherosclerotic Aneurysm
Atherosclerotic Aneurysm

A.Sch. f-65 y
pulsating neck tumor

Endograft Symbiot®
Atherosclerotic Aneurysm

M.G. m-75 y

Amplatzer Plug

Viabahn
A.Sch. f-65 y
pulsating swelling and
pulsating tinnitus
Fluency®
AM m-44 y
left ICA: occlusion
now pulse-synchronous tinnitus
right ICA:
2 aneurysms
Carotid Dissection

AM 44 J. (m)

exclusion of both aneurysms with Wallgraft® 6 mm for 5 years free of symptoms
Traumatic Carotid Aneurysm

RW f-43 y

car accident with severe whiplash injury:
neck pain

4 months later:
pulsatory tinnitus
R.W. f-43 y

additional finding:
- left vertebral artery occlusion
- right segmental vertebral artery occlusion
Traumatic Carotid Aneurysm
Traumatic Carotid Aneurysm

RW f-43 y

Choice PT extrasupport
Symbiot® endograft
KW m-64 y
Cancer of mouth floor
partial resection of jaw
Postoperative Carotid Aneurysm

KW m-64 y
Ca of mouth floor

Wallgraft®
Postoperative Carotid Aneurysm

DP m-67 y
cancer of the tongue
2 weeks later growing pulsating tumor causing pain

Fluency®
Subarachnoidal Hemorrhage

A.B. f-57 y  SAH after hypophysectomy  Fluency®
Coiling

W.A. m-62 y  cranial nerve palsy
Flow Diverter

- very flexible
- retrievable
- nitinol meshwork
- platine filaments
Flow Diverter

A.G. m-57 y cranial nerve palsy

15 months FU
When is Surgery the Better Option?

Mycotic aneurysms when antibiotic therapy does not eradicate the germs!

Resection and venous interposition preferred.
Medication

Dual antplatelet tx for at least 3 months or anticoagulation.
## Results

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>41</td>
<td>100.0%</td>
</tr>
<tr>
<td>Technical success</td>
<td>40</td>
<td>97.5%</td>
</tr>
<tr>
<td>Complications</td>
<td>1</td>
<td>2.4%</td>
</tr>
<tr>
<td>TIA</td>
<td>1</td>
<td>2.4%</td>
</tr>
<tr>
<td>Recurrence</td>
<td>1</td>
<td>2.4%</td>
</tr>
<tr>
<td>2nd endograft</td>
<td>1</td>
<td>2.4%</td>
</tr>
</tbody>
</table>
Long Term Results

Follow-up 3 months to 5 years

- color-coded Duplex ultrasound
  - recurrence: 1/40 (0%)
  - neurological deficit: 1/41 (0%)
  - deceased: 7/41 (12%)

1 failed treatment in giant aneurysm
5 tumor disease
1 MI

Thank you for your interest.
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