Contemporary Treatment of Carotid Aneurysms and Pseudoaneurysms: Optimal Use of Endo and Open Techniques

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Disclosures

Abbott – Consultant
Medtronic – Consultant

Carotid Artery Aneurysms and Pseudoaneurysms

- Extracranial carotid artery aneurysms and pseudoaneurysms may be the result of:
  - Trauma
  - FMD
  - Atherosclerosis
  - Dissection
  - Connective Tissue Disorder
  - Infection
  - Prior Surgery (CEA)
  - Radiation
  - Spontaneous

Sequelae

- Distal Embolization
- Thrombosis
- Compressive Symptoms
- Rupture

Treatment

- Open Surgical Repair
- Endovascular Treatment
  - Covered Stents
  - Woven Stents (Pipeline)
  - Bare Stents
  - Adjunctive Coil

Carotid Artery Aneurysms and Pseudoaneurysms

- Open Surgical Repair
  - Time tested
  - Effective
  - Potential morbidity
  - Difficulties of Surgical Exposure
  - 141 Aneurysms, 132 Patients

Carotid Artery Aneurysms and Pseudoaneurysms

- Covered Stents
  - Eliminates aneurysm and pseudoaneurysm perfusion completely and immediately
  - Reports of delayed thrombosis of covered stents in cervical distribution despite chronic anticoagulation

Surgical and medical management of extracranial carotid artery aneurysms

Graet T. Farkhamam, MD; William M. Stroman, MD; Richard J. Ford, MD; Mark E. O'Donnell, MD; Thomas L. Brown, MD; Brooke F. Huyer, MD; and Samuel K. Hinsey, MD, MHA. Reprints, correspondence, and Radiation, 2016.
Covered Stent
Adjunctive Bare Metal

Stent Assisted Coil Embolization

Overlapping Closed Cell Stents (Pipeline)
<table>
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<tr>
<th>Patient Number</th>
<th>Presentation</th>
<th>Etiology</th>
<th>Location</th>
<th>Maximum Diameter (cm)</th>
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<td>CCA</td>
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<td>+ Pain</td>
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<td>CCA</td>
<td>0.8</td>
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<td>ECA embolization and CCA ligation</td>
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</table>

**Results**

- **Mean Duration of FU:** 331 Days
  - (Range 17 – 2925 Days)
- **Limited # Patients and Duration of FU**
- **Technical Success:** 100%
- **0 CVA / TIA**
- **0 Aneurysm Expansion**
- **100% Patency (Duplex US q 3 months x 1 year, then annually)**

**Conclusions**

- Extracranial carotid artery aneurysms and pseudoaneurysms may be treated effectively using standard open surgical techniques, however the surgical exposure and perioperative morbidity may present challenges
- Endovascular approaches to aneurysm and pseudoaneurysm treatment have evolved progressively
- Preliminary results with mid-term follow up suggest that these techniques are effective and durable with limited procedural morbidity