Innervation of Extracranial Carotid Aneurysms

VEC Pourier MD, MGJ Nederhoff, M de Bakker, A Vink MD PhD, G Pasterkamp MD PhD, GJ de Borst MD PhD, RLA W Bleys MD PhD
Disclosure

Speaker name: Vanessa Pourier

✓ I do not have any potential conflict of interest
Background

- Rare (<1%)
- Asymptomatic
- ANS and inflammation

Aim:

Innervation pattern in ECAA vs controls
## Method

### Sample selection

<table>
<thead>
<tr>
<th>Patient characteristics</th>
<th>ECAA patients (n=10)</th>
<th>Popliteal aneurysm patients (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender male (%)</td>
<td>5 (50)</td>
<td>8 (80)</td>
</tr>
<tr>
<td>Age, years (range)</td>
<td>58 (25-76)</td>
<td>74 (49-82)</td>
</tr>
<tr>
<td>Hypertension (%)</td>
<td>5 (50)</td>
<td>6 (60%)</td>
</tr>
<tr>
<td>Connective Tissue disease (%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Smoking (currently/past) (%)</td>
<td>3 (30)</td>
<td>2 (20)</td>
</tr>
</tbody>
</table>

### Controls

- 10 popliteal aneurysms
- 6 x a. carotid and a. popliteal

<table>
<thead>
<tr>
<th>Aneurysm characteristics</th>
<th>ECAA (n=10)</th>
<th>Popliteal aneurysms (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>6 Left ICA</td>
<td>6 Right</td>
</tr>
<tr>
<td>Shape</td>
<td>4 Saccular</td>
<td>6 Fusiform</td>
</tr>
<tr>
<td>Size, mean in mm (range)</td>
<td>Saccular: 12.5 (11-15mm)</td>
<td>Fusiform: 27 (13-33mm)</td>
</tr>
<tr>
<td>Symptomatic</td>
<td>9 (90%)</td>
<td>8 (80%)</td>
</tr>
<tr>
<td></td>
<td>2 (20%) unknown</td>
<td>2 (20%) unknown</td>
</tr>
</tbody>
</table>
Results

- Immunohistochemical staining
- Anti-PGP 9.5 (general)
- TH (sympathetic)
- Coints/mm²
Results

PGP number of fibers
(Bundles + vasovasorum + scattered fibers)

TH number of fibers
(Bundles + vasovasorum + scattered fibres)

Counts / mm²

Counts / mm²

p=0.0005

p=0.17

p=0.013

a. carotid, ECAA, a. poplitea, Popliteal Aneurysm, Popliteal aneurysms
Conclusion

• Significant difference between ECAA and popliteal aneurysms

• Limitations:
  – Small sample size
  – Different arteries in different disease phase

• Only study