Surgical vs. Endovascular Management of Cephalic Arch Syndrome

VEITH 2018

Disclosures

Specific Disclosures
- None

General Disclosures
- None

Cephalic Arch Lesions

- short
- focal in nature
- associated with a high rate of thrombosis

Cephalic Arch

39% BCF vs. 2% RCF

Pre-existing disease
High Flows
Angle
Valve

Cephalic Arch Lesions

- associated with turbulent flow
- associated with pre-existing thickening (20% of all cephalic arches)
- tight anatomical cephalic arch angle
- associated with one valve (3mm of the cephalic arch confluence with the axillary vein)
- common in non diabetics

Calcium-phosphate product, platelet count, access flow (per 100 mL/min) brachiocephalic fistula was predictive of the occurrence of cephalic arch stenosis
Conclusions: Multivariate analysis showed that diabetes and residual stenosis (albeit >30%) were predictive of recurrence, whereas the finding of an isolated CAS lesion as opposed to stenoses in multiple locations was shown to be negatively associated with recurrent CAS, appearing to be “protective”.

Conclusions: The use of stent grafts in angioplasty for recurrent cephalic arch stenosis significantly improved short-term restenosis rates and long-term patency compared with the use of bare stents. The significant improvement that emerged during the study caused accrual of patients to be halted for ethical reasons.
Conclusions: Surgical options offer superior long-term patency and functional results and should be considered earlier in the treatment of this disease.

**Table:**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Primary Patency (%)</th>
<th>Assisted Primary Patency (%)</th>
<th>Secondary Patency (%)</th>
<th>Secondary Intervention per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angioplasty</td>
<td>30%</td>
<td>46%</td>
<td>61%*</td>
<td>3.5</td>
</tr>
<tr>
<td>Stenting</td>
<td>55%</td>
<td>54%</td>
<td>74%*</td>
<td>3.1</td>
</tr>
<tr>
<td>Transposition</td>
<td>63%</td>
<td>59%</td>
<td>80%*</td>
<td>1.8</td>
</tr>
<tr>
<td>Bypass</td>
<td>70%</td>
<td>67%</td>
<td>92%*</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Median functional dialysis durations were equivalent between angioplasty (1.9 years) and stenting (2.1 years) groups and between transposition (3.1 years) and bypass (3.4 years) surgical groups.

**Conclusion**

- Cephalic arch stenosis remains a significant cause of brachiocephalic AVF malfunction.
- Angioplasty has poor outcomes
- Stent grafting offers the best endovascular outcomes.
- Surgical options offer superior long-term patency and functional results.
- Surgical intervention should be considered earlier in the treatment of this disease.