A PATHOLOGIC PERFORATOR MAY PREDICT THE PRESENCE OF AN IPSILATERAL CENTRAL VENOUS STENOSIS

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Disclosures

- InterVene, Inc.
- Boston Scientific Corporation

CVI Presentation

Multi-level Disease

Maurins U, Hoffmann BH, Loch C, Jäckel KH, Rabe G, Frieser S. Distribution and prevalence of deep venous reflux in the general population results from the Bonn Vein Study, Germany. 2008

Severe Disease = Multi-level disease


AVF / SVS Guidelines


Pathologic perforator → Central venous stenosis

**Hypothesis**

This study sought to evaluate whether the presence of a pathologic perforator is predictive of the presence of central venous pathology.

**Methods**

- Retrospective review
- May 2016 – April 2018
- All patients who underwent ablation of a pathologic perforator
  - >3.5 mm, 500 msec, C4b disease or worse
  - Most had not undergone dedicated central venous imaging
  - Central venous imaging performed incidentally

**Patient Cohort**

<table>
<thead>
<tr>
<th>Total</th>
<th>Ref. (mm)</th>
<th>Comp. (mm)</th>
<th>% Comp.</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>15.1±3.8</td>
<td>6.3±4.1</td>
<td>57.0±27.4</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Group B</td>
<td>15.5±4.1</td>
<td>4.5±4.1</td>
<td>70.1±11.0</td>
<td>&lt; 0.0001</td>
</tr>
</tbody>
</table>

**Demographics**

<table>
<thead>
<tr>
<th>Group</th>
<th>Age (y)</th>
<th>Gender (%) male</th>
<th>BMI</th>
<th>VTE history</th>
<th>Anticoagulation</th>
<th>Previous peripheral intervention</th>
<th>Side (%) right-sided</th>
<th>Perforator diameter (mm)</th>
<th>CEAP</th>
<th>VCSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=18</td>
<td>57.5±15.5</td>
<td>61.1%</td>
<td>30.7±6.8</td>
<td>67.6%</td>
<td>33.3%</td>
<td>88.9%</td>
<td>61.1%</td>
<td>5.6±0.8</td>
<td>5.16±0.9</td>
<td>10.7±5.6</td>
</tr>
<tr>
<td>N=45</td>
<td>58.2±15.5</td>
<td>42%</td>
<td>26.9±4.9</td>
<td>6.7%</td>
<td>6.7%</td>
<td>68.9%</td>
<td>37.8%</td>
<td>5.8±2.4</td>
<td>4.8±0.9</td>
<td>7.4±4.1</td>
</tr>
</tbody>
</table>

**Imaging Cohort (Group A)**

- Ipsilateral central vein compressions
  - Concordant central stenosis 83.3%
  - CIV – 66.7%
  - EV – 33.3% (exclusively right-sided)
  - Pre-stenotic dilatation 38.9%
  - Ipsilateral abdominal wall collaterals 16.7%
Comparison of ipsi and contra limbs

- Contralateral central vein compressions
  - 83.3% vs 44.4%, P = 0.0354
- 4 pts with combined treatment achieved full ulcer healing within 4 weeks

Conclusions

- Limitations
  - Small sample size
  - Gold standard for imaging is venogram / IVUS
- Additional longitudinal evaluation required to determine if outcomes are affected
  - Ulcer healing, recurrence, prevention
  - QOL metrics

Conclusions

- Findings support the concept of multilevel disease in patients with severe chronic venous insufficiency.
  - In patients that warrant treatment of a pathologic perforator, suspect multi-level, consider evaluation of the central veins.

THANK YOU