The Physical Ailments that Accrue to Vascular Surgeons

Samuel R. Money MD, FACS, MBA
Professor of Surgery Mayo Clinic

The Physical Cost of Being a Surgeon

• 40-80% of surgeons suffer work ergonomic related pain issues during their career

The Physical Cost of Being a Surgeon

• In a meta analysis of surgeons and interventionalists over a 12 month period the prevalence of
- Neck pain 60%
- Arm/shoulder pain 52%
- Back pain 49%

Physical Pain During a Day of Operating in Vascular Surgeons

<table>
<thead>
<tr>
<th>Pain score</th>
<th>N (total=220)</th>
<th>Pain Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>17 (17.7%)</td>
<td>NONE</td>
</tr>
<tr>
<td>1</td>
<td>3 (1.4%)</td>
<td>MILD</td>
</tr>
<tr>
<td>2</td>
<td>2 (0.9%)</td>
<td>MODERATE</td>
</tr>
<tr>
<td>3</td>
<td>31 (14.1%)</td>
<td>MODERATE</td>
</tr>
<tr>
<td>4</td>
<td>25 (11.4%)</td>
<td>MODERATE</td>
</tr>
<tr>
<td>5</td>
<td>34 (15.9%)</td>
<td>SEVERE</td>
</tr>
<tr>
<td>6</td>
<td>24 (10.9%)</td>
<td>SEVERE</td>
</tr>
<tr>
<td>7</td>
<td>31 (14.1%)</td>
<td>SEVERE</td>
</tr>
<tr>
<td>8</td>
<td>16 (7.3%)</td>
<td>SEVERE</td>
</tr>
<tr>
<td>9</td>
<td>9 (4.1%)</td>
<td>SEVERE</td>
</tr>
<tr>
<td>10</td>
<td>2 (0.9%)</td>
<td>SEVERE</td>
</tr>
</tbody>
</table>

78.3%
The Physical Cost of Being a Surgeon

SCVS Survey

CURRENT PAIN RESULTS

39.5% currently in pain
71.7% felt their pain effected posture
23.3% concentration effected by pain
18.8% felt their pain effected relationships with others

• Reduced sleep increase work place physical and emotional issues
• 43% of Vascular surgeons wake up tired regularly
• Over 60% of surgeons report less than 6 hours of sleep per night on average

Real time measurements using IMUs in 13 vascular surgeons performing 40 cases

• Average case → 233 minutes
• 83% of surgeons rated the operation as physically demanding

Neck in high or severe stressed positions

p<0.01
The Physical Cost of Being a Surgeon

Cervical Risk
- Head lights increase the load and increase poor cervical posture
- Loupes “pull” the neck forward … exacerbating poor posture

Cervical Ergonomics
- Body positioning / surgeon posture may contribute to pain experienced by vascular surgeons while performing surgery

Back in High or Severe Stressed Positions
- Over All
- No Lead
- Lead
The Physical Toll of Being a Surgeon

- Endovascular Procedures
  - Lead and the weight of the lead
  - Radiation
  - Monitor visualization
    - Increase eye and mental stress to 2D→3D
    - Improper monitor placement (10-20° below eye level)

The Physical Cost of Being a Surgeon

- More satisfaction with work ↔ Less pain
- Increased physical pain is correlated with burnout