Isolated Soleal and Gastrocnemius Vein Thrombosis

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DISCLOSURES

No financial relationships to disclose
Will not be discussing nonapproved uses/techniques of devices or medications

Isolated Soleal and Gastrocnemius Vein Thrombosis

• Little consensus
• Why the confusion?
• Recent studies

Isolated Soleal and Gastrocnemius Vein Thrombosis

Araga et al Eur J Endovasc Surg 2006

Isolated Soleal and Gastrocnemius Vein Thrombosis

VP—Popliteal v.
TGM—Main Gastroc Trunk
VG—Gastroc Vein

Araga et al Eur J Endovasc Surg 2006
Why The Confusion?

**Trivial Rate of Propagation**
- MacDonald 2003
- Solis 1992
- Meibers 1988
- Sales 2010
- Schwartz 2010

**Beneficial Effect of A/C**
- Deitcher 2003
- Lautz 2009
- Meissner 1997
- Schwarz 2001
- Gillet 2007

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**METHODOLOGY**

Reviewed venous duplex scans from **2005 – 2009; 2013**
- All venous duplex scans (ICAVL lab)
- Patients with ISGVT
- Only patients with follow-up scans
- Medical Record review
- Duplex scans reviewed: Regression, No change or Progression of clot
- All scans re-reviewed

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**RESULTS**

### VENOUS DUPLEX STUDIES

- **n=5,238**
- **ISGVT**: n=100 (1.9%)
- **No F/U Study**: n=44
- **F/U Duplex available**: n=56
- **A/C (TX)**: n=18
- **No A/C (NoTX)**: n=38

### VENOUS DUPLEX STUDIES

- **n=13,759**
- **ISGVT**: n=158 (1.1%)
- **No F/U Study**: n=17
- **F/U Duplex available**: n=141
- **A/C (TX)**: n=75
- **No A/C (NoTX)**: n=66

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**RESULTS: 2009**

<table>
<thead>
<tr>
<th>TX (n=76)</th>
<th>NoTX (n=65)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGE (mean ± SD)</strong></td>
<td>71.5 ±7.8 yrs</td>
</tr>
<tr>
<td>Congestive Heart Failure</td>
<td>15 (20%)</td>
</tr>
<tr>
<td>Abdominal Surgery</td>
<td>19 (25%)</td>
</tr>
<tr>
<td>ESRD Stage V</td>
<td>9 (12%)</td>
</tr>
<tr>
<td>COPD</td>
<td>14 (18%)</td>
</tr>
<tr>
<td>Prior DVT</td>
<td>9 (12%)</td>
</tr>
<tr>
<td>History of Cancer</td>
<td>26 (35%)</td>
</tr>
<tr>
<td>Recent Surgery</td>
<td>38 (47%)</td>
</tr>
<tr>
<td>Ambulatory</td>
<td>24 (32%)</td>
</tr>
<tr>
<td>ICU Admission</td>
<td>28 (37%)</td>
</tr>
<tr>
<td>Vascular Consult Obtained</td>
<td>19 (25%)</td>
</tr>
<tr>
<td>Length of Stay (days)</td>
<td>17.3 ±10.8</td>
</tr>
</tbody>
</table>

χ² = 0.36; p = 0.55 NS

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**RESULTS: 2013**

<table>
<thead>
<tr>
<th>TX (n=75)</th>
<th>NoTX (n=66)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGE (mean ± SD)</strong></td>
<td>72.2 ±7.9 yrs</td>
</tr>
<tr>
<td>Congestive Heart Failure</td>
<td>12 (16%)</td>
</tr>
<tr>
<td>Abdominal Surgery</td>
<td>13 (18%)</td>
</tr>
<tr>
<td>ESRD Stage V</td>
<td>3 (5%)</td>
</tr>
<tr>
<td>COPD</td>
<td>9 (12%)</td>
</tr>
<tr>
<td>Prior DVT</td>
<td>9 (12%)</td>
</tr>
<tr>
<td>History of Cancer</td>
<td>23 (31%)</td>
</tr>
<tr>
<td>Recent Surgery</td>
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<tr>
<td>Ambulatory</td>
<td>26 (35%)</td>
</tr>
<tr>
<td>ICU Admission</td>
<td>25 (34%)</td>
</tr>
<tr>
<td>Vascular Consult Obtained</td>
<td>19 (26%)</td>
</tr>
<tr>
<td>Length of Stay (days)</td>
<td>14.2 ±10.4</td>
</tr>
</tbody>
</table>

χ² = 0.15; p = 0.70 NS

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**Why The Confusion?**

- Trivial Rate of Propagation
  - MacDonald 2003
  - Solis 1992
  - Meibers 1988
  - Sales 2010
  - Schwartz 2010

- Beneficial Effect of A/C
  - Deitcher 2003
  - Lautz 2009
  - Meissner 1997
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  - Gillet 2007

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**Isolated Soleal and Gastrocnemius Vein Thrombosis**


Failed to address the management of soleal and gastrocnemius thrombosis.
RESULTS: 2013

<table>
<thead>
<tr>
<th></th>
<th>PROGRESSION</th>
<th>NO PROGRESSION or REGRESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX Group</td>
<td>2 (11%)</td>
<td>16 (89%)</td>
</tr>
<tr>
<td>NoTX Group</td>
<td>6 (16%)</td>
<td>32 (84%)</td>
</tr>
</tbody>
</table>

p< 0.00 NS

RESULTS: 2009

Multivariate Logistical Regression Model for Progression of Thrombosis

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean ± SE</th>
<th>OR</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticoagulation</td>
<td>2.5 ± 1.2</td>
<td>1.25</td>
<td>(0.75, 2.1)</td>
<td>0.35</td>
</tr>
<tr>
<td>Age (in years)</td>
<td>71 ± 8</td>
<td>1.04</td>
<td>(0.89, 1.20)</td>
<td>0.21</td>
</tr>
<tr>
<td>Sex</td>
<td>1.0 ± 1.0</td>
<td>1.0</td>
<td>(0.50, 1.00)</td>
<td>0.51</td>
</tr>
<tr>
<td>End-Duration (in days)</td>
<td>0.04</td>
<td>0.99</td>
<td>(0.89, 1.09)</td>
<td>0.51</td>
</tr>
</tbody>
</table>

VALUE OF A/C IN TREATMENT OF ISGVT

NO REDUCTION IN PROGRESSION OF THROMBUS

CONCLUSIONS

- ISGVT is different!
- Technology improvements
- Anatomically different
- Clinically different

CURRENT TREATMENT ALGORITHM

- Watchful waiting
- Sequential Compression Device on uninvolved limb
- Repeat duplex in 2-3 days (even w/ A/C)
- Early ambulation if possible
PRACTICAL IMPLICATIONS

SHOULD ISGVT BE CONSIDERED A DVT?

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