Incidence and Risk Factors of Venous Thromboembolism After Foot and Ankle Surgery

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Our disclosures are in the Final AOFAS Mobile Application. We have no potential conflicts with this presentation.
Venous Thromboembolism (VTE)

- Superficial & deep vein thromboses (SVT & DVT)
- Pulmonary emboli (PE)
- Virchow’s triad of predisposing factors
VTE After Foot/Ankle Surgery?

• Foot/ankle surgery involves –
  – Iatrogenic trauma
  – Post-operative immobilization -> venous stasis
  – In various patients with various medical conditions

• Current literature
  – Low incidence of VTE after surgery
  – Patients should receive VTE prophylaxis on an “individualized basis”

• Unanswered questions
  – What type of patient and/or surgery is at higher risk for VTE?
Purpose

• To evaluate the incidence & risk factors of symptomatic VTE after foot/ankle surgery

• Hypothesis
  – The incidence of postoperative VTE is not significant
  – BUT patients with certain medical conditions may be at higher risk for VTE
Methods

- 2746 patients that received foot/ankle surgery
  - September 2006 – September 2015
  - No history of coagulopathy or VTE
  - 1 treating surgeon (J.A.)
  - No post-surgical anti-coagulation

- Retrospective chart review
  - Attention paid to –
    » Patient demographics
    » Surgical procedure
    » Post-surgical imaging revealing VTE within 90 days from surgery
      - SVT vs. DVT vs. PE
Results

• 22 (0.80%) patients developed a post-operative VTE
  – 0 SVTs
  – 14 infra- & 1 supra-popliteal DVTs
  – 7 PEs

• Patient demographics
  – Mean age = 47.3 years (23-73 years)
  – Male : female = 12:10
  – Non-obese : obese = 6:16

» P = 0.04
### Surgeries Where Patients Had a VTE

<table>
<thead>
<tr>
<th>Surgery</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ankle fracture repair</td>
<td>8 (0.29%)</td>
</tr>
<tr>
<td>Hindfoot arthrodesis</td>
<td>3 (0.11%)</td>
</tr>
<tr>
<td>Achilles repair</td>
<td>2 (0.07%)</td>
</tr>
<tr>
<td>Ankle ligament reconstruction</td>
<td>2 (0.07%)</td>
</tr>
<tr>
<td>Hammer-toe correction</td>
<td>2 (0.07%)</td>
</tr>
<tr>
<td>Calcaneal fracture repair</td>
<td>1 (0.04%)</td>
</tr>
<tr>
<td>Metatarsal fracture repair</td>
<td>1 (0.04%)</td>
</tr>
<tr>
<td>Ankle cartilage repair</td>
<td>1 (0.04%)</td>
</tr>
<tr>
<td>Peroneal tendon repair</td>
<td>1 (0.04%)</td>
</tr>
<tr>
<td>Below-knee amputation</td>
<td>1 (0.04%)</td>
</tr>
</tbody>
</table>

Compared to a normal cohort, none of these surgeries carried a higher risk for VTE.
Discussion

• Factors predictive of patients developing VTE after foot/ankle surgery
  – Obesity (P<0.05)

• Factors NOT predictive of patients developing VTE after foot/ankle surgery
  – Age
  – Sex
  – Other medical conditions
  – Type of surgery
Conclusion

- The incidence of VTE after foot/ankle surgery is low
- BUT obese patients are at significantly higher risk for VTE after foot/ankle surgery
  - Recommend routine VTE prophylaxis for these patients
Thank you.