LOWER EXTREMITY VENOUS OCCLUSIVE DISEASE: A RAPIDLY PROGRESSING FIELD WITH MAJOR OPPORTUNITIES FOR IMPROVING CLINICAL OUTCOMES

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Conflicts of Interest
None

Venous Disease in the United States

<table>
<thead>
<tr>
<th>Disease</th>
<th>N of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Venous Thromboembolism</td>
<td>&gt;900,000</td>
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<tr>
<td>Venous Ulcers</td>
<td>0.5 - 7 million</td>
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<tr>
<td>Chronic Venous Insufficiency</td>
<td>2.5 million</td>
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<tr>
<td>Varicose veins</td>
<td>25 – 40 million</td>
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<tr>
<td>Spider veins, telangiectasia</td>
<td>&gt; 100 million</td>
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<tr>
<td>Venous trauma (penetrating, blunt, iatrogenic)</td>
<td>?</td>
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<tr>
<td>Mesenteric venous thrombosis</td>
<td>?</td>
</tr>
<tr>
<td>Venous and arteriovenous malformations</td>
<td>?</td>
</tr>
<tr>
<td>Pelvic venous congestion</td>
<td>?</td>
</tr>
<tr>
<td>Paget-Schroetter Syndrome</td>
<td>?</td>
</tr>
<tr>
<td>Cerebral venous insufficiency</td>
<td>?</td>
</tr>
<tr>
<td>Lymphedema</td>
<td>?</td>
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</tbody>
</table>

Lower Extremity Venous Occlusive Disease

ACUTE

CHRONIC

Epidemiology of venous thromboembolism

- VTE occurs as often as stroke (1 per 1000/year)
- 30% have recurrence by 10 years
- 20 – 50% will develop post-thrombotic syndrome

Estimated Incidence of VTE, DVT and PE in the United States

- Venous thromboembolism
- Deep-vein thrombosis alone
- Pulmonary embolism

Ref: J.A. Nat. Rev. Cardiol. 2, 465-474 (2015); published online 10 June 2015 doi: 10.1038/nrcardio.2015.64
Survival After DVT and PE


- Venous outflow obstruction following VTE reduces physical QoL and Activities of Daily Living

Rapid and effective treatment of venous outflow obstruction will improve physical QoL and ADL

Venous occlusive diseases in women

Women have a higher incidence of chronic venous disease. Venous occlusive disease can lead to significant morbidity and costs of health care. Factors such as genetics, medications, and disease cause play a role in the development of venous thrombosis.

Iliofemoral DVT represents a significant portion of acute DVT

Current recommendations of acute thrombus removal are underutilized
Primary Large Vein Obstruction

- Congenital Anomalies
  - Agenesis
  - Atresia
  - Hypoplasia
  - Coarctation
- Compression Syndromes
  - May-Thurner syndrome
  - Nutcracker syndrome
  - Popliteal or femoral vein entrapment

IVC Hypoplasia or Coarctation

May-Thurner Syndrome

- 28% men
- 72% women
- 77% DVT
- 23% No DVT

May – Thurner Anatomy in Asymptomatic Patients

- 66% had greater than 25% compression of the left common iliac vein
- 24% of patients had greater than 50% compression
- Mean compression was 35.5% (range, -5.6%-74.8%).

May – Thurner Syndrome

Indications Of Iliofemoral Stenting For Venous Obstructions

- May-Thurner
- Extrinsic compression*
- Thrombophilia
- Idiopathic

*May-Thurner Syndrome

We suggest early thrombus removal strategies in patients with first episodes of acute iliofemoral DVT (Grade 2C)

Conclusions

- Acute venous thromboembolism has major affect on the general population: it is frequent and it is lethal
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- Post-thrombotic syndrome is more frequent after DVT than previously recognized (28% to 43%)

Conclusions

- Attempts to prevent DVT, identify patients at risk, remove thrombus early and treat the underlying venous compression or obstruction must intensify
- Venous stenting is effective and durable
- In patients who are not candidates for stenting or fail endovascular repair, open or hybrid surgery should be considered

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THANK YOU!