Upper Extremity DVT: How and When to treat

Raghotham Patlola, MD, FACC, FSCAI
Dir. Cardiac Catheterization Labs
Wesley Medical Center
Hattiesburg, MS - 39402
## Disclosures

### Speaker’s Bureau:
- Forrest Pharmaceuticals
- Novartis Pharmaceuticals

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- Boehringer Ingelheim
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## Epidemiology of Upper Extremity DVT

<table>
<thead>
<tr>
<th></th>
<th>Lower Extremity</th>
<th>Upper Extremity</th>
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</thead>
<tbody>
<tr>
<td><strong>Incidence</strong></td>
<td>5-9/10,000</td>
<td>0.4-1/10,000</td>
</tr>
<tr>
<td><strong>PE</strong></td>
<td>15% - 32%</td>
<td>3% - 6%</td>
</tr>
<tr>
<td><strong>Post thrombotic syndrome</strong></td>
<td>Up to 56%</td>
<td>5% - 44%</td>
</tr>
<tr>
<td><strong>12-month recurrence</strong></td>
<td>10%</td>
<td>2% - 5%</td>
</tr>
</tbody>
</table>

*Kucher, NEJM 2011*
Epidemiology of Upper extremity DVT

- **Primary (20% of cases)**
  - Venous Thoracic Outlet syndrome (TOS)
  - Effort related thrombosis
  - Idiopathic

- **Secondary (80% of cases)**
  - Catheter associated thrombosis
  - Cancer associated thrombosis
  - Surgery/Trauma of shoulder or arm
  - Hormone induced coagulation abnormalities

_Kucher, NEJM 2011_
PICC associated venous thrombosis accounted for 20% of isolated UESVT’s and 35% of UEDVT’s.

The overall rate of PICC associated UEDVT was low (0-3.1%).

Cephalic vein PICC lines were associated with SVT’s but not DVT’s.

Smaller PICC diameter (<5F) was associated with lower rates of UEDVT.
## Incidence of PICC associated DVT

<table>
<thead>
<tr>
<th>Authors</th>
<th>Number of PICC’s</th>
<th>Thrombosis Incidence (%)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grove, JVIR 2000</td>
<td>813</td>
<td>3.9%</td>
<td>Retrospective, lower rate in smaller PICC’s</td>
</tr>
<tr>
<td>Chemaly, Clin Infect Dis 2002</td>
<td>2063</td>
<td>0.9%</td>
<td>Retrospective</td>
</tr>
<tr>
<td>Lobo J Hosp Med 2009</td>
<td>954</td>
<td>4.89%</td>
<td>Retrospective</td>
</tr>
</tbody>
</table>
24 pts with UEDVT >6 months from 2 Canadian thrombosis-clinics. Demographic, Villalta PTS scale, DASH, SF-36, and VEINES-QoL questionnaires.

- Daily arm/hand pain 52%
- Daily arm pain 20%
- Post-thrombotic syndrome 44% (11/25 limbs)
• In most patients with UEDVT that is associated with a central venous catheter, we suggest that the catheter not be removed if it is functional and there is an ongoing need for the catheter (Grade 2C).
- Acute treatment with parenteral anticoagulation (LMWH, fondaparinux, IV UFH, or SC UFH) over no such acute treatment (Grade 1B).

- suggest LMWH or fondaparinux over IV UFH (Grade 2C) and over SC UFH (Grade 2B).

In most patients with UEDVT that is associated with a central venous catheter, we suggest that the catheter not be removed if it is functional and there is an ongoing need for the catheter (Grade 2C).
Long term Anti-Coagulation

- In patients who have UEDVT that is associated with a central venous catheter that is not removed, we recommend that anticoagulation is continued as long as the central venous catheter remains over stopping after 3 months of treatment in patients with cancer (Grade 1C), and we suggest this in patients with no cancer (Grade 2C).

- In patients who have UEDVT that is not associated with a central venous catheter or with cancer, we recommend 3 months of anticoagulation over a longer duration of therapy (Grade 1B).
Paget – Schroetter Syndrome

Venous Thoracic outlet syndrome

• 0.2/10,000 population
• Mean age: Early 30’s
• Male : Female: 2:1
• Athletic 60-80% history
• Chest wall collaterals
Treatment of Paget-Schroeter

- Thrombolytics
- Surgical Rib resection
- Venoplasty stenting
EKOS Catheter
Venogram (Post-TPA)
Venogram @ 3-weeks
6 month follow-up
We prefer Venoplasty and stenting only after the surgical resection of the Cervical rib
Device Mediated Upper Extremity - DVT
Summary

• Secondary UEDVT is more common than primary UEDVT.
• Use the smallest possible PICC Line
• Anticoagulate for 3 months in primary and catheter associated UEDVT
• If functioning the catheter should NOT be removed and replaced
• Paget –Schroetter : Thrombolysis, Surgical resection, then PTV/Stenting
Thank You
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