Non-Thrombotic May Thurner Syndrome: Defining Pathology Mandating Treatment from Normal Anatomy

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Disclosures

Serve as a consultant, proctor, or speaker for the following companies:
- Cook Medical
- Abbott Vascular
- Boston Scientific
- Medtronic

May-Thurner Syndrome: Pathology Mandating Treatment

The Cause of the Predominantly Sinistral Occurrence of Thrombosis of the Pelvic Veins
May R, Thurner J.
ANGIOLOGY October 1957 8: 419-427

Acute Iliofemoral DVT
Unilateral Leg Swelling

24 yo healthy woman
• Acute onset leg swelling
• Dx'd with acute L DVT

Treatment
- PMT with Trellis/TPA
- Stenting of L CIV
- Postoperative anticoag

Thrombotic May Thurner Syndrome with Acute DVT:
mandates treatment with lysis / thrombectomy and LCIV stenting

33 yo healthy woman
• 5-7 yr h/o mild left leg swelling and fatigue
• Primary complaint is that pants fit asymmetrically

Treatment
- Compression stockings
- L CIV stenting ??

Non-thrombotic May Thurner Syndrome w/ leg swelling:
mandates only counseling, compression therapy, and judicious application of endovascular stenting

Unilateral Left Leg Swelling: Evaluation & Management for Suspected May-Thurners

Key Components:

STEP 1: Patient Education & Compression Therapy
STEP 2: Diagnostic Imaging (Contrast Venography)
STEP 3: IVUS-guided Iliac Vein Stenting
**Unilateral Left Leg Swelling: Evaluation & Management for Suspected May-Thurners**

**STEP 1:** Patient Education & Compression Therapy
- Risk v. Benefit of venous stenting
- Long-term durability concerns
- Lack of available stents designed for venous system (in U.S.)
- Instruction on proper use of compression therapy
- Reassurance of patient and discussion of warning signs of DVT

**STEP 2:** Diagnostic Imaging – MRV & Venography
- **MRV and CT Venography**
  - (Overly) sensitive test
  - Lack of physiologic information
  - Limited utility in guiding management
  - Not used routinely
- **Contrast Venography**
  - Physiologically relevant data
  - Venous flow patterns, collaterals
  - Outpatient angiography suite
  - Findings + symptoms guide intervention

**Venogram Findings**
1) "Pancaking" / flattening
2) Stagnation of flow
3) Contra-lateral cross-filling
4) Preferential collateral flow
5) Stenosis
Unilateral Left Leg Swelling: Evaluation & Management for Suspected May-Thurners

May-Thurner Syndrome: UCLA Experience

60 Patients

Group I
May-Thurner Syndrome with DVT (n=31)
31 pts: thrombectomy / lysis, angioplasty, and stenting
100% technical success

Group II
May-Thurner Syndrome without DVT (n=29)
14 pts: managed conservatively
15 pts: angioplasty and stenting
100% technical success

Primary Patency of Iliac Venous Stents

Secondary Patency of Iliac Venous Stents

May-Thurner Syndrome: UCLA Experience

24-month Primary and Secondary Patency

<table>
<thead>
<tr>
<th></th>
<th>Thrombotic (n=31)</th>
<th>Non-Thrombotic MT (n=15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Patency</td>
<td>94.1%</td>
<td>100%</td>
</tr>
<tr>
<td>Secondary Patency</td>
<td>97.1%</td>
<td>100%</td>
</tr>
</tbody>
</table>

- One early occlusion in thrombotic May-Thurner group
- One late restenosis in the Non-thrombotic group at 46 mo
- Two access site hematomas (no intervention required)

Unilateral Left Leg Swelling: Evaluation & Management for Suspected May-Thurners

STEP 3: IVUS-Guided Iliac Vein Stenting

Intravascular Ultrasound
- Precise location of compression
- Guides stent sizing and placement
- Objective quantification of luminal improvement

Iliac Stenting
- Wallstent diameter 14-20mm
- Extension into IVC
- Oversize proximally (in EIV)

May-Thurner Syndrome: UCLA Experience

Primary Patency of Iliac Venous Stents

Secondary Patency of Iliac Venous Stents
May-Thurner Syndrome: UCLA Experience

### Group I

**May-Thurner Syndrome with DVT (n=31)**
- 31 pts: thrombectomy / lysis, angioplasty, and stenting
- 100% technical success

### Group II

**May-Thurner Syndrome without DVT (n=29)**
- 14 pts: managed conservatively
- 15 pts: angioplasty and stenting
- 100% technical success

### Initial Presentation of Non-Thrombotic May-Thurner Patients

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Conservatively Managed Patients (n=14)</th>
<th>Stented Patients (n=15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>86%</td>
<td>80%</td>
</tr>
<tr>
<td>Edema (any)</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Mild Edema</td>
<td>79%</td>
<td>73%</td>
</tr>
<tr>
<td>Severe Edema</td>
<td>21%</td>
<td>27%</td>
</tr>
<tr>
<td>CEAP 3</td>
<td>86%</td>
<td>80%</td>
</tr>
</tbody>
</table>

### Results of Treatment for Non-Thrombotic May-Thurner Patients

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Conservatively Managed Patients (n=14)</th>
<th>Stented Patients (n=15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution of Pain</td>
<td>53%</td>
<td>71%</td>
</tr>
<tr>
<td>Complete Resolution of Edema</td>
<td>0%</td>
<td>26%</td>
</tr>
<tr>
<td>Improvement in Edema</td>
<td>28%</td>
<td>73%</td>
</tr>
<tr>
<td>CEAP Reduced</td>
<td>21%</td>
<td>73%</td>
</tr>
</tbody>
</table>

### Conclusion

**Approach:** Selective Intervention Based on Symptom Severity and Imaging Findings is justified in non-thrombotic May-Thurner

**Rationale:** In these patients:
1. Symptoms are often mild in severity
2. Resolution of pain/fatigue responds to compression alone
3. Reduction in DVT rates has not been shown
4. Long-term (>10-20 yrs) durability of venous stenting is unknown
5. Conservative management does not preclude subsequent intervention for persistent symptoms

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