Image-Guided Approach to Treatment of Patients with Non-thrombotic May Thurner Syndrome

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Disclosure

Speaker name: Brian G. DeRubertis, MD

I have the following potential conflicts of interest to report:

- [x] Consulting: *Abbott Vascular, Medtronic, Cook, Boston Scientific*
- [ ] Employment in industry
- [ ] Stockholder of a healthcare company
- [ ] Owner of a healthcare company
- [ ] Other(s)

- [ ] I do not have any potential conflict of interest
May-Thurner Syndrome: Does Pathology always Mandate 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 Iiiofemoral DVT

Unilateral Leg Swelling
May-Thurner Syndrome: Does Pathology always Mandate Treatment?

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
May-Thurner Syndrome:

*Does Pathology always Mandate Treatment?*

- 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
May-Thurner Syndrome: Diagnostic Evaluation & Management

Key Components:

**STEP 1:** Patient Education & Compression Therapy

**STEP 2:** Diagnostic Imaging (Contrast Venography)

**STEP 3:** IVUS-guided Iliac Vein Stenting
May-Thurner Syndrome: 
*Diagnostic Evaluation & Management*

**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
May-Thurner Syndrome: Evaluation & Management for Suspected May-Thurner Syndrome

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

MR or CT Venogram

Contrast Venography
May-Thurner Syndrome: Diagnostic Evaluation & Management

**STEP 2: Diagnostic Imaging – MRV & Venography**

**Contrast Venography**

- Physiologically relevant data
- Venous flow patterns, collaterals
- Outpatient angio suite
- Findings + symptoms guide intervention

*May-Thurner Syndrome: Diagnostic Evaluation & Management*
Venogram Findings

1) “Pancaking” / flattening
2) Stagnation of flow
3) Contra-lateral cross-filling
4) Preferential collateral flow
5) Stenosis
May-Thurner Syndrome: Diagnostic Evaluation & Management

Venogram Findings
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May-Thurner Syndrome: Diagnostic Evaluation & Management

Venogram Findings

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May-Thurner Syndrome: Diagnostic Evaluation & Management

Venogram Findings

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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
May-Thurner Syndrome: 
Recent 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
May-Thurner Syndrome: Recent UCLA Experience

60 Patients

<table>
<thead>
<tr>
<th>Group I</th>
<th>Conservative Treatment (n=14)</th>
<th>Stented (N=15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stenosis &gt;50% (by Venography)</td>
<td>67%</td>
<td>100%</td>
</tr>
<tr>
<td>Occlusion</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Collateralization</td>
<td>29%</td>
<td>87%</td>
</tr>
<tr>
<td>Stagnation</td>
<td>14%</td>
<td>87%</td>
</tr>
<tr>
<td>Cross-filling</td>
<td>7%</td>
<td>87%</td>
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</tbody>
</table>

Group II
May-Thurner Syndrome without DVT (n=29)

14 pts: managed conservatively
15 pts: angioplasty and stenting

100% technical success
May-Thurner Syndrome: Recent UCLA Experience

Initial Presentation of Non-Thrombotic May Thurner Patients

<table>
<thead>
<tr>
<th></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>
# May-Thurner Syndrome: Recent UCLA Experience

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

<table>
<thead>
<tr>
<th></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>
May-Thurner Syndrome: Recent UCLA Experience

60 Patients

Group II
May-Thurner Syndrome without DVT (n=29)

- 14 pts: managed conservatively
- 15 pts: angioplasty and stenting

100% technical success

- 1 patient with clinical progression CEAP 3 to 4
- 1 patient developed PE (without identified source)
- No new left leg DVTs
Conclusions

**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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