May Thurner stents

Oliver Schlager
Division of Angiology
Medical University of Vienna
Austria
Disclosure

Speaker name:
Oliver Schlager..........................................................

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☒ Other(s)

Speaker honoraria (BARD/BD, Optimed, Biotronik)
☐ I do not have any potential conflict of interest
May Thurner syndrome

Robert May
Vascular surgeon
Innsbruck, AT

Josef Thurner
Pathologist
Innsbruck, AT
Historical treatment approaches

1962

Iliac artery bypass  Vertebral body removal

Today: Venous stents
Chronic outward force
Radial resistive force
Flexibility
Crush resistance

Venous compression

Stent requirements
Stent requirements

Prevention of stent compression

Single-center retrospective study, 48 patients

Aspect ratio 1:2

Insignificant stent compression

Significant stent compression

P < 0.001

Lichtenberg M. EVT 2018;6(5)Suppl:9-11

Cho H. Korean J Radiol 2015;16(4):723-8
Stent requirements

Physical stent properties
Multicenter single-arm study, 60 patients (68% female)

Postthrombotic syndrome with iliac vein compression

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Baseline</th>
<th>3-month visit</th>
<th>6-month visit</th>
<th>12-month visit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary outcome</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary patency, % [95% CI]</td>
<td>--/--</td>
<td>93.1%a</td>
<td>87.5%a</td>
<td>83.0%a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[83.3–98.1%]</td>
<td>[75.9–94.8%]</td>
<td>[70.2–91.9%]</td>
</tr>
<tr>
<td></td>
<td>n = 58</td>
<td>n = 56</td>
<td>n = 56</td>
<td>n = 53</td>
</tr>
<tr>
<td><strong>Secondary outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary assisted patency, % [95% CI]</td>
<td>--/--</td>
<td>93.1%</td>
<td>91.1%a</td>
<td>90.6%a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[83.3–98.1%]</td>
<td>[80.4–97.0%]</td>
<td>[79.3–96.9%]</td>
</tr>
<tr>
<td></td>
<td>n = 58</td>
<td>n = 56</td>
<td>n = 56</td>
<td>n = 53</td>
</tr>
<tr>
<td>Secondary patency, % [95% CI]</td>
<td>--/--</td>
<td>100%</td>
<td>98.2%a</td>
<td>98.1%a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[93.8–100%]</td>
<td>[90.3–100%]</td>
<td>[89.7–100%]</td>
</tr>
<tr>
<td></td>
<td>n = 58</td>
<td>n = 56</td>
<td>n = 56</td>
<td>n = 53</td>
</tr>
</tbody>
</table>
VIVO study
Zilver Vena Venous Stent

Multicenter single-arm study, 243 patients (70% female)

78.6% iliac vein compression

NIVL not reported separately

Primary, assisted primary, and secondary patency rates

Freedom of clinically-driven reintervention (12 months)
VERNACULAR study
Venovo Venous Stent

Multicenter single-arm study, 170 patients (63% female)

45% NIVL

VIRTUS study
Vici Venous Stent

Multicenter single-arm study, 200 patients (60% female)

27% NIVL

Freedom from target vessel revascularization (5 years)
Multicenter single-arm study, 200 patients (67% female)

Patency estimates (1 year)

36% NIVL
VIVID study
Duo-Hybrid / Duo-Extend Venous Stent

Multicenter single-arm study, 160 patients
Correlation with clinical picture

Don’t treat images, treat patients
Appropriate stent sizing

To prevent stent migration (diameter ≥14 mm, length ≥ 100 mm)

Stent migration: stent across tricuspid valve causing severe tricuspid regurgitation


Elmahdy S et al. J Investig Med High Impact Case Rep 2018
Precise stent placement

Stent extension in IVC - contralateral DVT
Conclusions

- All dedicated venous stents qualify as MTS stents

- Correlate images with clinical symptoms

- Thorough assessment of hemodynamic relevance

- Appropriate stent sizing
May Thurner stents

Oliver Schlager
Division of Angiology
Medical University of Vienna
Austria