Contemporary stenting of the abdominal aorta for steno-occlusive disease: new technical developments

Jos C. van den Berg, MD PhD
Ospedale Regionale di Lugano, sede Civico, Lugano
University of Bern
Switzerland
Conflict of interest

• No disclosures
History

• Palmaz-XL
  – Cumbersome
    • Not pre-mounted
    • Risk of loss of stent
  – Large profile

• Wallstent
  – Foreshortening
  – Jumping
New developments

• Additional availability of various new designs
  – Co-Cr balloon-expandable
  – Co-Cr covered balloon-expandable
  – Self-expandable
‘Old approach’

- Displacing bifurcation cranially
- Parallel stents

- Nowadays ‘bifurcation reconstruction’
‘Old approach’
‘Old approach’
‘Old approach’
New developments
Currently available technologies

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Product Name</th>
<th>Material Used</th>
<th>Maximum Guidewire Size</th>
<th>Introducer Size (F)</th>
<th>Stent Diameter</th>
<th>Stent Length</th>
<th>Delivery System</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD Interventional</td>
<td>LifeLine</td>
<td>Stainless steel</td>
<td>0.035</td>
<td>0.035</td>
<td>5.6, 7, 8, 9</td>
<td>18, 28, 38</td>
<td>75, 115, 150</td>
</tr>
<tr>
<td>AndraMed GmbH</td>
<td>Thrombolysis</td>
<td>Stainless steel</td>
<td>0.035</td>
<td>0.035</td>
<td>5.6, 7, 8, 9</td>
<td>18, 28, 38</td>
<td>75, 115, 150</td>
</tr>
<tr>
<td>Medtronic Inc.</td>
<td>IntraStent LD Max</td>
<td>Stainless steel</td>
<td>0.035</td>
<td>0.035</td>
<td>5.6, 7, 8, 9</td>
<td>18, 28, 38</td>
<td>75, 115, 150</td>
</tr>
<tr>
<td>AndraMed GmbH</td>
<td>Thrombolysis</td>
<td>Stainless steel</td>
<td>0.035</td>
<td>0.035</td>
<td>5.6, 7, 8, 9</td>
<td>18, 28, 38</td>
<td>75, 115, 150</td>
</tr>
<tr>
<td>Medtronic Inc.</td>
<td>IntraStent Ultra Max</td>
<td>Stainless steel</td>
<td>0.035</td>
<td>0.035</td>
<td>5.6, 7, 8, 9</td>
<td>18, 28, 38</td>
<td>75, 115, 150</td>
</tr>
<tr>
<td>AndraMed GmbH</td>
<td>Thrombolysis</td>
<td>Stainless steel</td>
<td>0.035</td>
<td>0.035</td>
<td>5.6, 7, 8, 9</td>
<td>18, 28, 38</td>
<td>75, 115, 150</td>
</tr>
<tr>
<td>Medtronic Inc.</td>
<td>IntraStent Ultra Max</td>
<td>Stainless steel</td>
<td>0.035</td>
<td>0.035</td>
<td>5.6, 7, 8, 9</td>
<td>18, 28, 38</td>
<td>75, 115, 150</td>
</tr>
</tbody>
</table>
Balloon-expandable covered stents

• Advantages
  – Potentially better patency
  – Reduces risk of distal embolization

• Disadvantages
  – Foreshortening
  – Placement close to bifurcation problematic (shoulder of balloon may rupture CIA)
  – Loss of collaterals (lumbar arteries/IMA)
Balloon-expandable covered stents

• Foreshortening
Self-expandable stents

- **Advantages**
  - No fore-shortening
  - No forward jumping
  - Some repositionable
  - Continuous outward force
  - 6F compatible devices (sizes sufficient for steno-occlusive disease)

- **Disadvantages**
  - Post-dilation close to bifurcation still problematic, but feasible with kissing balloons or very short shouldered balloons
Self-expandable stents

- **10 F**
  - Sinus XL stent (16-36)
  - Sinus XL Flex (14-24 mm)

- **6F**
  - Sinus XL 6F (14-16 mm)
  - Sinus-Repo Visual 6F (6-14 mm)
Case #1
Case #1
Case #1
Case #2
Case #3
Case #3
Case #3
Conclusions

• Aortic stenting with low-profile self-expandable stents is feasible and safe
• Aortic stenting with low-profile self-expandable stents does not compromise collaterals and allows stenting close to the aortic bifurcation
Contemporary stenting of the abdominal aorta for steno-occlusive disease: new technical developments

Jos C. van den Berg, MD PhD
Ospedale Regionale di Lugano, sede Civico, Lugano
University of Bern
Switzerland