Technical advances in recanalizing chronic venous obstructions - „skipped Y“

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Disclosure

I have the following potential conflicts of interest to report:

Receipt of grants/ research support

Medtronic, BARD BD, Cook, Ab medica, Bentley, Optimed, BTG

Receipt of honoraria and travel support

Medtronic, BARD BD, Cook, Ab medica, Bentley, Optimed, BTG
Preoperative positioning

- Be prepared to use right IJV
Visualization of the confluence

- Cross over pull back technique
- IVUS
- Bilateral Injection (only if bilateral pathology)
Types of reconstruction

Confluence  Apposition  Fenestration  Double barrel
Type of reconstruction: Double barrel

- Impaired endothelialization due to poor wall contact
- Dead space between the stents
- More stents and costs
- Reduction of area

Dead space

IVC

Double barrel
Type of reconstruction:
Confluence

Confluence

24mm, 452mm$^2$

16mm, 201 mm$^2$

32 mm
Type of reconstruction: Confluence

Confluence stenting with self-expandable stents
Type of reconstruction: Confluence

Cava stent: 24mm, 452mm²

Iliac stents: 12mm, 113 mm²  
2 x 113 = 226 mm²

Confluence stenting with balloon-expandable stents
Type of reconstruction: Confluence

- Dead space between the stents
- Compression of iliac stent
  - If cava stent 24mm, iliac max. 12 mm
- Impaired endothelialization due to poor wall contact
- Reduction of area
- More stents and costs
- Longer duration of procedure (radiation)

Confluence stenting with balloon-expandable stents

Cava stent: 24mm, 452mm²

Iliac stents: 12mm, 113 mm²
  \(2 \times 113 = 226 \text{ mm}²\)
Type of reconstruction: Fenestration

- One iliac stent for IVC (insufficient size (reduction of area))
- Fracturing of the contralateral iliac stent
- Balloon rupture and subsequent entrapment of devices
- Problems in re-interventions like thrombectomy
- Jailing of both CIV
Type of reconstruction: Apposition

- One iliac stent for the IVC (insufficient size (Reduction of area))
- Problem in re-interventions like thrombectomy
- Jailing of the contralateral leg
Type of reconstruction:
Skipped Y

Skipped Y technique
## Epidemiologie

<table>
<thead>
<tr>
<th>Bilateral Läsion (n, %)</th>
<th>Technik</th>
<th>Follow up</th>
<th>PP</th>
<th>aPP</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raju S., 2009 (19446993)</td>
<td>Fenestration</td>
<td>4 J</td>
<td>31% (Total)</td>
<td>57% (Total)</td>
<td>66% (Total)</td>
</tr>
<tr>
<td>De Graaf, 2015 (PMC4565871)</td>
<td>Confluence</td>
<td>1 J</td>
<td>85%</td>
<td>85%</td>
<td>95%</td>
</tr>
<tr>
<td>Köbel, 2009 (19702343)</td>
<td>Double Barrel</td>
<td>5 J</td>
<td>70% (Total)</td>
<td>73% (Total)</td>
<td>80% (Total)</td>
</tr>
<tr>
<td>Chick, 2017 (28527883)</td>
<td>Double Barrel</td>
<td>2 J</td>
<td>87%</td>
<td>90%</td>
<td>94%</td>
</tr>
<tr>
<td>Neglen, 2007 (20385465)</td>
<td>Double Barrel</td>
<td>6 J</td>
<td>67% (Total)</td>
<td>89% (Total)</td>
<td>93% (Total)</td>
</tr>
<tr>
<td>Our results</td>
<td>Skipped Y</td>
<td>3,5 J</td>
<td>77%</td>
<td>85%</td>
<td>93%</td>
</tr>
</tbody>
</table>
Benefits of skipped Y

– No dead space between the stents
– No compression of iliac stent
– Good wall contact
– No need of fracturing of the contralateral iliac stent
– No entrapment of devices
– Not more stents and costs
– Shorter duration of procedure
– No reduction of area

A small skipped lesion in chronic venous obstruction doesn’t affect the patency
Thank you for your attention

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