Chronic visceral ischemia: tips and tricks

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Indications for treatment

• Chronic mesenteric ischemia
  – Post-prandial pain/weight-loss
  – >2 vessels involved (NB total occlusion of all arteries may be asymptomatic)
  – Traditionally: high-risk surgery

• Prior to AAA repair (open or endo)

• (Acute mesenteric ischemia)
Relative contraindications for endovascular treatment

• Unfavorable anatomy resulting in lower technical success
  – Extreme tortuosity making it difficult to track devices
  – Long occlusions - greater than 3 cm
  – Heavily calcified occlusions

• Extrinsic compression (median arcuate ligament syndrome)
Technique

- 4F/5F long preshaped (RDC) introducer sheath (groin)
  - On 0.018” or 0.035” compatible dilator
  - Consider use of steerable guide catheter

- 4 F diagnostic catheter (Cobra/Simmons 1)

- 0.018”/0.014” guide wire
  - Allow for rapid-exchange, smaller delivery system, less traumatic

- Allows contrast injection for optimal stent positioning and continuous flush
Technique

• Avoid large sheaths when coming from brachial approach (NB arterial thrombosis)
• Consider use of steerable guiding catheters
Technique

• Primary stenting (4F OD system; will fit through 6F guiding catheter/) OTW/RX
• Rarely need for pre-dilatation (back-loading)
• Additional use of microcatheter to cross lesion and pass (stiffer) guide-wire
• Balloon expandable stents for short, proximal lesions, SE for long distal lesions
• Think of retrograde recanalization
Technique

• Pre-treatment with thrombolysis only in patients with recent onset/aggravation of symptoms
• Life-long antiplatelet therapy
Choice of stent

- Balloon-expandable stents allow for precise deployment, have greater radial force, available in short lengths
- SE stents longer lengths available, more flexible to treat lesions in tortuous vessels
- Advance sheath/GC beyond lesion (‘backloading’)
- Minimal protrusion into aorta
- Sizing 1:1
- Try to achieve 2 vessel patency

Pre-procedural planning

- From pre-interventional CT scan
- Anatomical landmarks (flush occlusion)
  - Aortic calcification
  - Visceral artery calcification
  - Vertebral body
- Choice of catheter
Anatomical landmarks
Catheter choice
Catheter choice
Use of long sheath
Use of long sheath
Use of long sheath
Use of long sheath
Use of long sheath
‘Back-loading’ technique
Retrograde recanalization
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# Femoral vs. brachial access

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<tr>
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<th>Femoral</th>
<th>Brachial</th>
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<tbody>
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<td><strong>Pro</strong></td>
<td>Less access related complications</td>
<td>Excellent access in acute vessel take-off Decreases need of stiff guidewire use</td>
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<tr>
<td><strong>Con</strong></td>
<td>Access to visceral arteries cumbersome</td>
<td>More access related complications</td>
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Use of pre-operative imaging

After arcuate ligament transection
Use of pre-operative imaging

Celiac trunk

SMA
Celiac trunk
Celiac trunk

Combined use of ‘roadmap’ and ‘live-fluoro’
Celiac trunk
SMA
Conclusions

• With modern endovascular tools most of the visceral artery lesions can be safely treated from the groin with a 4-5F long sheath
• Avoid use of stiff and large bore devices in order to keep complication rate low
• Use pre-operative imaging for case planning
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