Results of 300 consecutive retrograde recanalisation of complex femoropopliteal or below-the-knee occlusions

Erwin Blessing, FESC
SRH Klinikum Karlsbad-Langensteinbach, Germany
Disclosure

Speaker name: Erwin Blessing

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): speakers honorarium: Abbott, Medtronic

☐ I do not have any potential conflict of interest
Background:

Retrograde recanalizations are increasingly performed for total occlusive disease, both in femoropopliteal and in below-the-knee lesions.

Single center reports support high technical success and low complication rates.

Little is known regarding a systematic, prospective evaluation of consecutive patients in a large cohort.
Retrograde Recanalisation:

April 1\textsuperscript{st} 2014 – December 15\textsuperscript{th} 2017
309 consecutive cases with retrograde access in CTOs after failed antegrade approach

~11\% of all cases (out of 2700 interventions)

Age: 73.3 years
Claudicants: 169 (54.7\%)
Rutherford: 3.84

M/F: 193/116
CLI: 140 (45.3\%)
Technical specifications

**Retrograde access:**
Angiographic guidance
21 G needle (4, 7, 12 cm)
V 18 wire (Boston Scientific)
Cook CXI 0.018” support catheter
4-6 F sheath (rarely)
CTO/Reentry Device: Outback, Wingman (rarely)
CAART, double ballooning, balloon puncture with Outback etc.
“snaring” technique, wire externalization
Haemostasis: blood pressure cuff or balloon dilatation
Retrograde Recanalisations:

**Primary sheath access:**
- CFA: 295
- Crossover: 184
- Antegrade: 108
- Brachial artery: 14
- Multiple: 2

**Retrograde access:**
- Distal SFA: 100
- Stentpkt: 18
- Peroneal artery: 76
- Ant. tib. art: 65
- Post. tib. art: 43
- A. dosalis pedis: 26
- Popliteal art: 3
- Deep fem. art: 5
- Bypass: 2
- Multiple: 14
- Sheath (4-6 F): 37

**Occlusion:**
- Fem-pop: 229
- BTK: 123
- Groin: 15
- Iliacs: 9
- Bypass: 15
- Multiple: 77
Retrograde Recanalizations:

**Intervention:**
- POBA only: 40
- SNS: 113
- Rotarex: 16
- Stentgraft: 7
- DCB: 95
- Supera: 129
- Thrombolysis: 7
- Reentry: 21
- DES: 33
- Scoring: 3
- Atherectomy: 1
- CTO: 1

Supera reverse implantation (PRESTO) technique: 9
Case example

3 months follow up: complete healing ulcer right foot, intervention bypass stenosis left leg.
Retrograde Recanalisations:

Success puncture: 307/309 (99.4%)
Success wire passage: 278/309 (90.0%)
Success adjunctive therapy: 274/309 (88.7%)

Complication rate: 2/309 (0.6%)
Haematoma upper thigh at puncture site (no blood transfusion, no operation, fully resolved)
Sheaths were used in both cases
No occlusions, embolizations, bleeding etc. in any below-the-knee arteries
Learning curve?

Success rate

%
Predictors for failure?

- Calcification
- Profundaplastik
- Bypass
- Other
### Predictors for failure

<table>
<thead>
<tr>
<th></th>
<th>Success (n=280)</th>
<th>Failure (n=29)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td>73.6</td>
<td>70.5</td>
</tr>
<tr>
<td><strong>Rutherford</strong></td>
<td>3.79</td>
<td>4.38</td>
</tr>
<tr>
<td><strong>Male sex</strong></td>
<td>60.7%</td>
<td>79.3%</td>
</tr>
<tr>
<td><strong>Occlusion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fem-pop</td>
<td>76.1%</td>
<td>55.2%</td>
</tr>
<tr>
<td>BTK</td>
<td>40.4%</td>
<td>41.4%</td>
</tr>
<tr>
<td>Multilevel</td>
<td>26.4%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Prev. Surg.</td>
<td>&lt;5%</td>
<td>24.1%</td>
</tr>
</tbody>
</table>
Conclusions

Retrograde access for complex femoropopliteal or below-the-knee occlusions:

High technical success rate
Low complication rate
Might help to reduce procedure time
Might help to reduce cost (less need for reentry and or CTO devices)

Negative predictors for success: Rutherford category, male sex, previous surgery (thrombendartherectomy, bypass surgery)
Results of 300 consecutive retrograde recanalisations of complex femoropopliteal or below-the-knee occlusions

Erwin Blessing, FESC
SRH Klinikum Karlsbad-Langensteinbach, Germany