Subintimal or Intraluminal Guidewire-Passage:
Both Techniques Are Useful
And Sometimes Required: Tips And Tricks

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Intraluminal or Subintimal Angioplasty (SIA) ?

Initial and 3-year results after subintimal vs intraluminal approach for long femop occlusions treated with stents.


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<thead>
<tr>
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<th>Intraluminal</th>
<th>Subintimal</th>
<th>p</th>
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<tbody>
<tr>
<td>N</td>
<td>651</td>
<td>251</td>
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<tr>
<td>Success-rate</td>
<td>91 %</td>
<td>90 %</td>
<td>0.71</td>
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<tr>
<td>Periprocedural complications</td>
<td>11 %</td>
<td>13 %</td>
<td>0.34</td>
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<tr>
<td>Procedure-time (minutes)</td>
<td>126 ± 63</td>
<td>98 ± 49</td>
<td>0.003</td>
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<tr>
<td>3-year primary patency</td>
<td>55 %</td>
<td>53 %</td>
<td>0.3</td>
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<td>25 % of cases started as intraluminal switched to subintimal</td>
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Conclusion: Initial results and 3-year patency was similar in both approaches. Given the longer procedure time and high crossover rate, we suggest that a subintimal approach may be preferred in the treatment of long femoral/calotte occlusions with stenting. (J Vasc Surg 2013; 1-9.)

Potential conflicts of interest

Speaker’s name: Andrej Schmidt

✓ I have the following potential conflicts of interest to report:

Consulting:
Medtronic, Abbott, Boston Scientific, Cook, Cordis, C.R.Bard, Intactvascular, ReFlow Medical, Spectranetics, Upstream Peripheral

Intraluminal or Subintimal Angioplasty (SIA) ?

Procedures were partially performed with external ultrasound-control or IVUS:
Partially the guidewire was subintimal when intended to be intraluminal and vice versa.
Study compared only the intention to treat intraluminally versus subintimal.

Shorter Lesion: Try to Stay Intraluminal

No need to reenter distally again if intraluminal passage is successful.

CTO-Guidewires to Stay Intraluminal

First choice in short calcified lesions:
0.018” CTO-guidewire:
e.g. Connect 250 T

~ 1mm
Long Lesion: Subintimal Preferred

- Faster
- High chance to go subintimal once intended to stay intraluminal.
- But stop before destroying the open distal segment and distal collaterals!

Reasons for a Retrograde SFA-Approach

In case of failure to reenter the true lumen distal of the CTO

In case of failure to reenter the true lumen distal of the CTO

Bidirectional Approach in Complex SFA-CTOs

Highly calcified SFA-CTO
Difficult, unsuccessful GW-passage

In case of failure to reenter the true lumen distal of the CTO
Retrograde approach helps to save the collateral
Advantage of a Bidirectional Approach

No dissection into the healthy segment proximal
No dissection into the healthy segment distal

Advantage of a Bidirectional Approach

No dissection into the healthy segment proximal
Try to achieve GW-Passage into the same lumen within the occlusion
No dissection into the healthy segment distal
30° LAO

The Bidirectional Approach for Difficult CTOs

Dissection and stent do no exceed the former occlusion

BTK: „Loop“ - or „Subintimal“?

Unsuccessful subintimal passage can destroy distal foot-arteries

GW-Passage of Tibial CTOs

Intraluminal CTO-passage is safer (lower risk for distal vessel-segments)

Requirements:
- Low-profile
- Balloons
- Support-catheter
- Guidewires

Guidewires for BTK-Arteries

- Polymere-coated, lubricious (e.g. Pilot, Command)
- High tip-load: often no polymere-sleave for better „grip“ into the plaque: (e.g. Winn 200 T, CTO-Approach 25g)
Primary Subintimal Passage in Calcified CTOs

Techniques to Connect Antegrade and Retrograde GWs

Summary

- No proof of superiority of subintimal or intraluminal in terms of success and long-term patency.
- Case to case decision which technique to prefer.
- Try intraluminal for shorter lesions
- Don’t jeopardize ‘healthy’ segments when going subintimal