

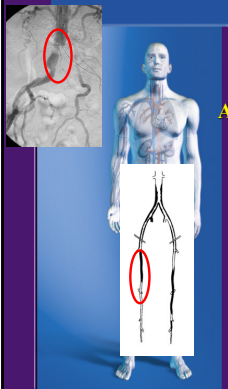

VEITH Symposium 2024

Re-Entry Devices Are Currently Almost Never Necessary: Techniques to Treat Lower Extremity Lesions Successfully Without Them: When They Be Needed

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Faculty Disclosure

- No Conflict

CTOs

- Percutaneous treatment of peripheral arterial Occlusion has evolved greatly:

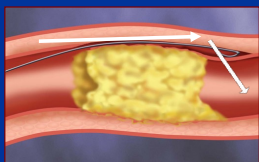
1. Improvement in Techniques, Wires, Catheters, Balloons and stents **Lower Profile System.**
Atherectomy Devices
2. Devices to **Cross the Occlusion** and **Re-enter** the True Lumen

How Often Devices Needed? Based on Three Things

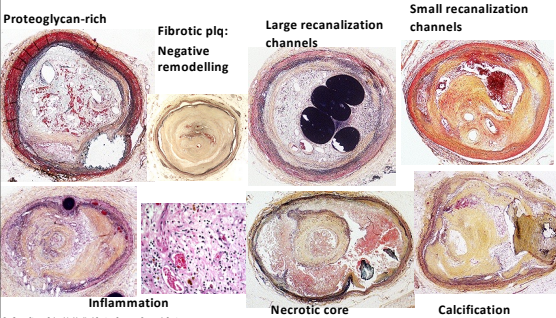
1. Endovascular Experience/Skills
 - Beginner, Intermediate, or Advance: Advance level < 10 %
2. Techniques Used
3. Complexity of the CTO Lesion

Subintimal Angioplasty/CTO

- Permits creation of Dissection plane + Re-entry without reducing future bypass options
- Create a New Non-diseased channel underneath the diseased lumen area



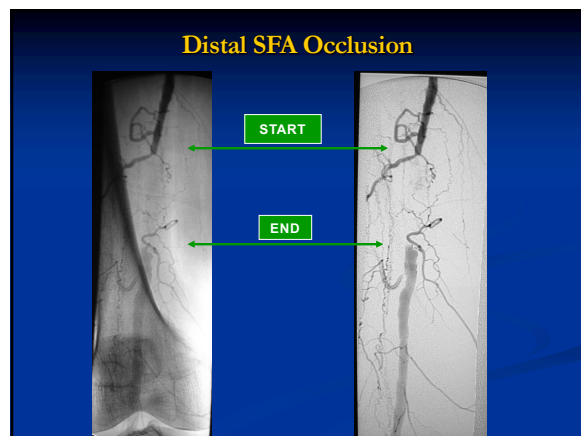
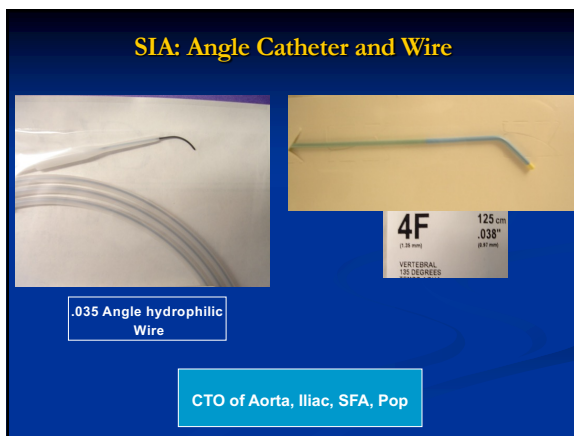
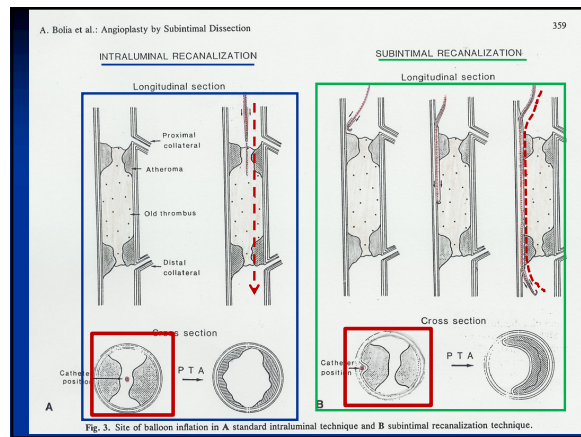
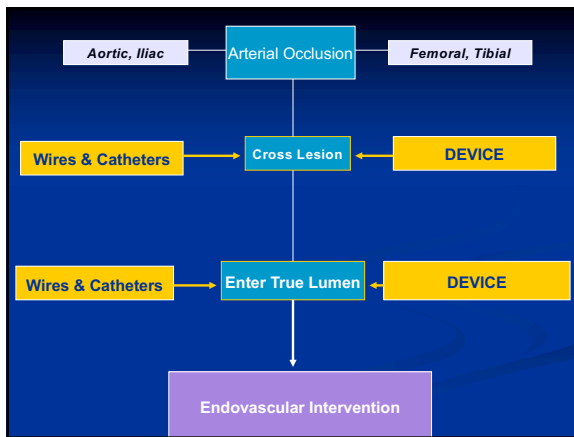
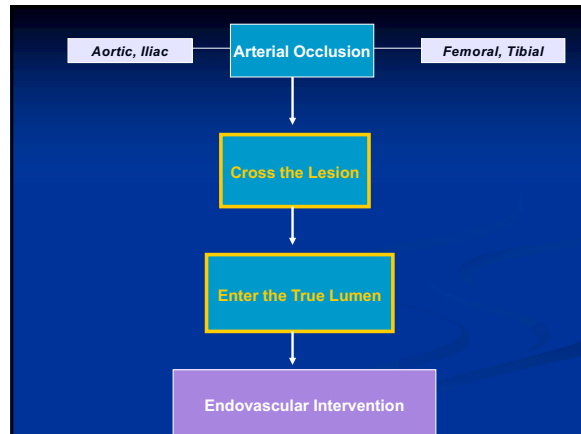
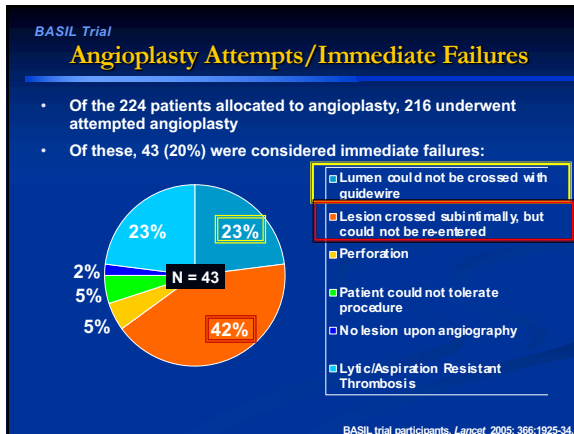
The Spectrum of Lumen Morphology in CTO - Clinical Challenges



Proteoglycan-rich Fibrotic plq: Negative remodelling Large recanalization channels Small recanalization channels

Inflammation Necrotic core Calcification

Dr. Gregg Stone: Columbia Medical Center, Coronary Research Center



Advance Catheter & Wire under Roadmap

- Advance a 120 cm angle 4 Fr. Tempo Aqua over a .035 angle Glide wire 280 cm toward "Start" point
- Force the wire into the Occlusion "Prox Cap"
- For Long occlusion form a loop by passing wire back and forth.

Advance Catheter & Wire under Roadmap

- Advance the Wire and Catheter and into the occlusion (FORCE IT!)

Advance Catheter & Wire under Roadmap

- Advance the Wire followed by the Catheter until the "End" point is reached
- At this point "End" point and distal native vessel should be visualized on the Roadmap

Advance Catheter & Wire under Roadmap

- Pass the loop 0.5-1.0 cm into the patent distal native vessel followed by the catheter

Advance Catheter & Wire under Roadmap

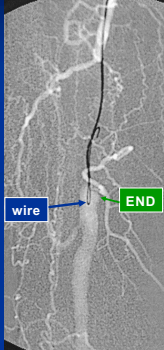
- by this point the wire and catheter has entered the True Lumen (feel the resistance). Wire easily pass distally
- Pull out the wire and back bleeding from catheter (+) for true lumen access

True Lumen

- Gently hand inject contrast to confirm (True Lumen)
- DO NOT inject if No back bleeding (stain the area)

Critical Point

- Must Enter Wire into the **True Lumen** at the "END" Point



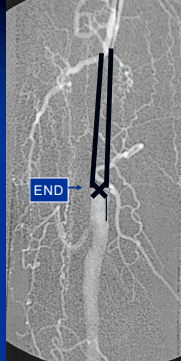
Do Not Pass the wire too far beyond the "END" point

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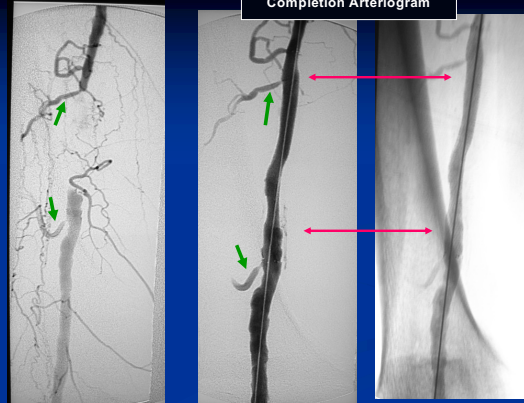
Extend the dissection distally
'Convert AK to BK bypass'

Compromise important collaterals

- Unable to get into True Lumen
- Rotate and Change the angle of the Tempo Aqua (braided) at the "End" point and advance the wire

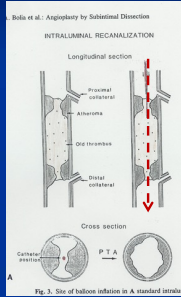


Completion Arteriogram



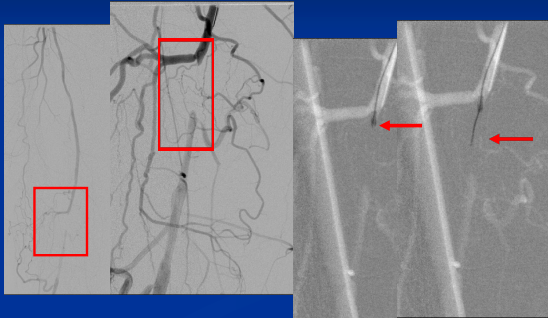
Intraluminal CTO

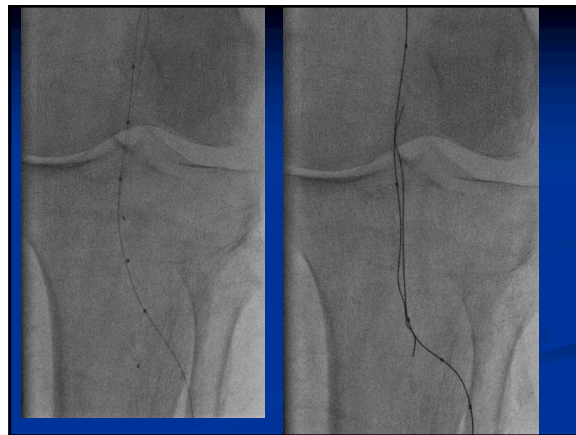
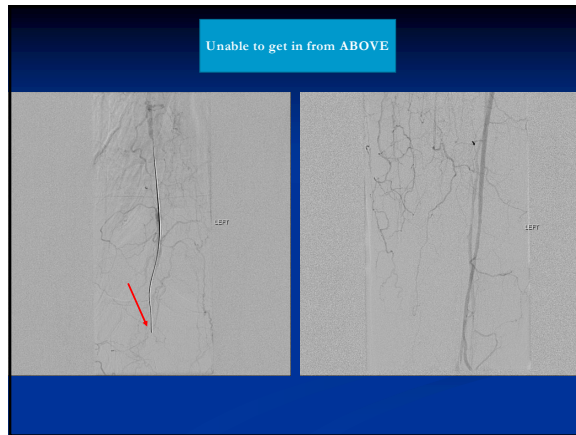
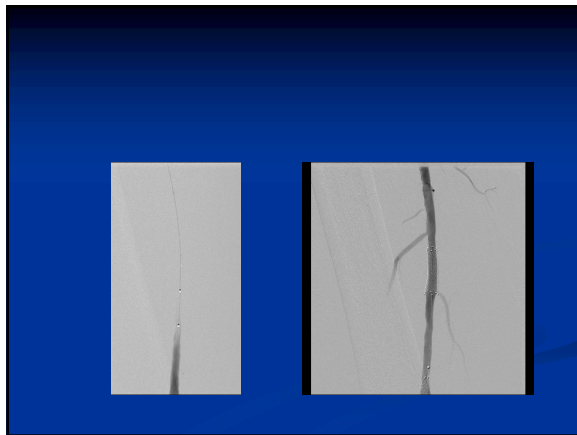
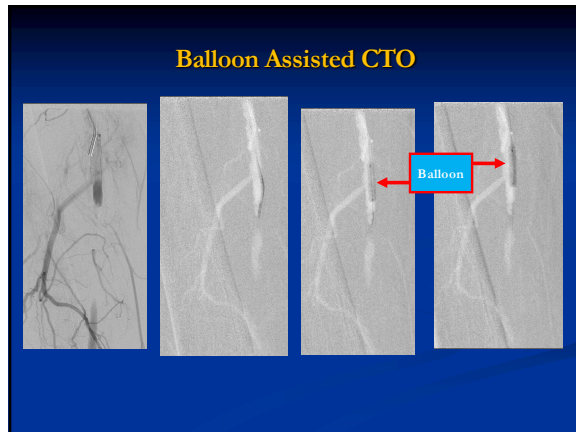
- Straight tip Wire and Catheter
- 4F catheter and .018 Hydrophilic wire



Bodo et al. Angioplasty by Subintimal Dissection
INTRALUMINAL RECANALIZATION
Longitudinal section
Proximal collateral
Atheroma
Distal thrombus
Distal collateral
Cross section
Catheter position P T A
Fig. 3. Size of balloon inflation in A standard intubal

Intraluminal CTO





Crossing and Re-Entry Devices

- Have increased the success of CTO and having a successful outcome
- Decreased need for retrograde approach esp popliteal
- Decreased need for Bypass Surgery
- Decreased stenting of "NO STENT" zone
- Decreased length of stented segment
- Decreased amount of Radiation and Contrast

AVOID SURGERY!



- Successful CTO can be accomplished using meticulous techniques, and attention to details
- Either wire&catheter technique and/or Crossing--- Re-entry Device

