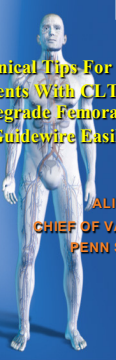



VEITH Symposium 2024

Technical Tips For A Successful BTK Intervention In Patients With CLI Including How To Perform An Antegrade Femoral Artery Puncture And Pass The Guidewire Easily Into The SFA And Not The Profunda

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Faculty Disclosure

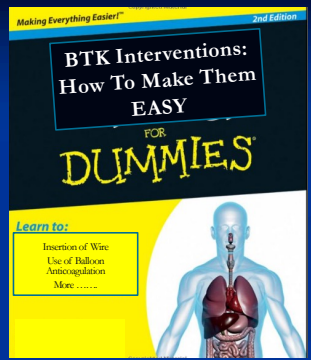
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Making Everything Easier!™ 2nd Edition

**BTK Interventions:
How To Make Them
EASY
FOR
DUMMIES**

Learn to:

- Insertion of Wire
- Use of Balloon
- Anticoagulation
- More.....



12 Steps For BTK Interventions

- Antiplatelet therapy
- Anticoagulation
- Access
- Antegrade puncture
- DSA
- Roadmap
- Magnification
- Wire ; low profile
- Micro catheter
- Balloon; low profile
- Balloon; long length
- Long inflation time

Endovascular Treatment of BTK

- Endovascular treatment of the Infrapopliteal lesions is generally reserved for treating Critical Limb Ischemia (CLI)
- CLI is generally due to Chronic, advanced, multilevel atherosclerotic disease, esp. in diabetic

Treatment of BTK lesions

- More challenging
- Smaller diameter vessels, more Spasm
- Longer lesions (stenosis or occlusion)
- Advance technical skills and appropriate tools are a must !

1st: Antiplatelet Therapy


- Platelet inhibition is the corner stone of preventing thrombosis
- PTA or EVI: Intimal injury release of procoagulant tissue factors, exposure of platelet-adhesive proteins, triggering formation of a platelet-rich thrombus that seals the site of injury.
- Long balloon inflation time, long segment arterial lesion contact with balloon, etc → Activates Plts

Antiplatelet Therapy

- Aspirin
- Clopidogrel (bolus dose prior to intervention)
- IIb/IIIa Inhibitor

The Role of Platelets in Inflammation and Plaque Stability


Inflammatory Modulators Produced by Activated Platelets



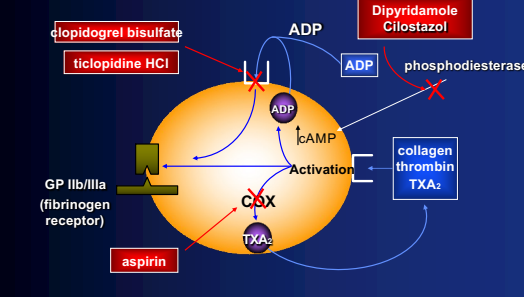
Platelet-derived growth factor
Platelet factor 4
CD 154 (CD40L)
RANTES*
Thrombospondin
Transforming growth factor-β
Nitric oxide

> 300 Mediators

*Regulated on activation, normal T-cell-expressed and -secreted.

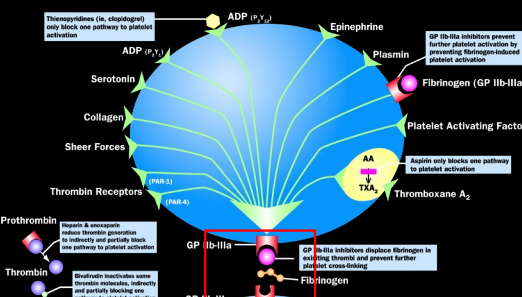


Mechanisms of Action of Oral Antiplatelet Therapies



ADP = adenosine diphosphate, TXA₂ = thromboxane A₂, COX = cyclooxygenase.
Schafer AL. *Am J Med.* 1996;101:199-209.

Pathways to Platelet Aggregation



Thromboxane A₂ (TXA₂) only blocks one pathway to platelet activation

Aspirin only blocks one pathway to platelet activation

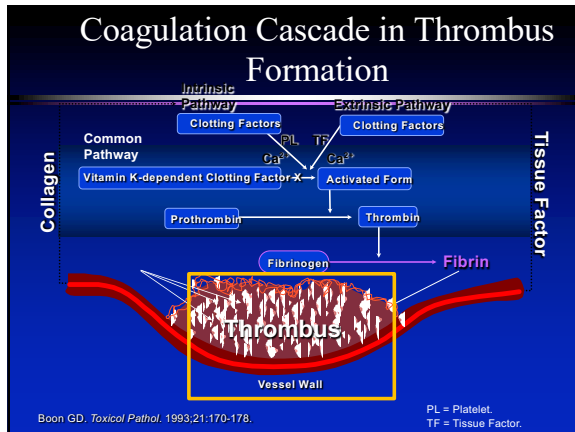
GP IIb/IIIa inhibitors prevent further platelet activation by preventing fibrinogen-induced platelet activation

GP IIb/IIIa inhibitors displace fibrinogen in activating thrombin and prevent further platelet cross-linking

Prothrombin & annexin reduce thrombin generation to indirectly and partially block one pathway to platelet activation

Prothrombin inactivates some thrombin molecules, indirectly and partially blocking one pathway to platelet activation

2nd: Anticoagulation



2nd: Anticoagulation

- Unfractionated Heparin
- Bivalirudin: Direct thrombin inhibitor

*** ACT > 200

The image shows a CVL 4 STAT blood coagulation analyzer. The screen displays the following information: **ACT** 258. The device is used to monitor the Activated Clotting Time (ACT) during procedures.

3rd: Access

- Antegrade instead of contralateral
- Tip of Sheath in the popliteal artery (longer sheath)

Common Femoral Artery Bifurcation

The image displays two axial CT scans of the femoral region, showing the common femoral artery bifurcating into the superficial and deep femoral arteries. A red arrow in both scans points to the bifurcation. To the right is an anatomical diagram of the femoral artery system, with a red box and arrow highlighting the bifurcation area.

1. US Guidance

- Use Micro puncture kit with .018 wire. Guide the wire into the SFA from the DFA

The image shows two ultrasound views of the femoral artery. A blue circle labeled **Wire SFA** indicates the position of the micro-puncture wire inserted into the superficial femoral artery.

2. Road Map thru the needle

The image shows two fluoroscopic images of the femoral artery system. A red arrow in the left image points to the needle tip, which is used to create a road map for catheter navigation.

Long Sheath placed in popliteal Artery

4th: DSA Imaging

- To see details of BTK arteries, runoff, esp collaterals, BTA

5th: Road Mapping

- Passage of wire, catheter, balloon “real time” over existing image, true lumen entry
- Minimize Contrast injection

6th: Magnification

- Details of the Lesion
- Occlusion vs. 99% “channel”

7th: using .018 or .014

- Smaller arteries, avoid .035
- Hydrophilic wires for crossing Occlusions
- Floppy tip for stenosis

8th: using Micro-catheter

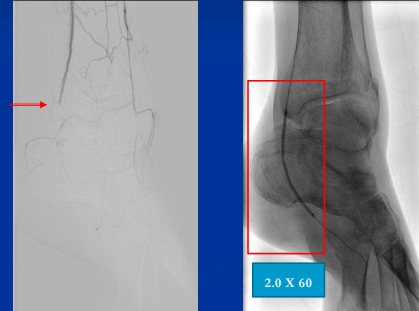
- Accessing the tibial Arteries
- Pushing through the occlusion

9th: Low Profile (.014) PTA Balloon
Over the Wire, not Rx

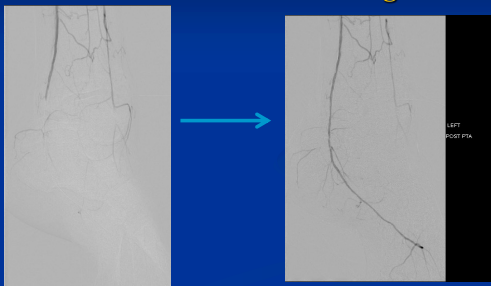
AMPHIRION DEEP	
Ballon Nominal Diameter	2.0 mm
Ballon Length	120 mm
Sheath Diameter (outer/inner)	3.9F/2.8 F
Sheath Catheter Length	150 cm
Recommendation Intubation	4 F
Recommendation Dilatation	0.014"
Working Pressure	7 atm
Rated Burst Pressure (RBP)	14 atm



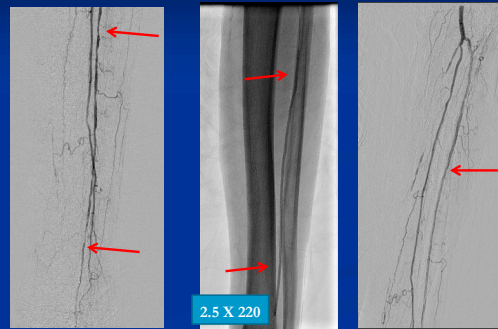
Limb Salvage/Ulcer/Plantar Artery



Completion
Arteriogram



10th: Long PTA Balloon (to cover entire lesion)



11th: Longer Inflation time

- Between 2 to 3 min
- If dissection re-inflate with lower pressure
- Avoid Full metal jacket



12th: Maximal Medical Management (M3)

- Smoking
- Lipid
- Op
- Blood pressure, w

*Risk Factors
Modification*



