12 Commandments For Successful BTK Intervention In Chronic Limb Threatening Ischemia (CLTI) Patients Including Technical Tips For Antegrade Femoral Artery Puncture

ALI AMIN MD, FACS, FACC, RVT
CHIEF OF ENDOVASCULAR INTERVENTIONS
READING HEALTH SYSTEM
READING, PA

12 Commandments For BTK Interventions For CLI
• Antiplatelet therapy
• Anticoagulation
• Access
• DSA
• Roadmap
• Magnification
• Wire; low profile
• Micro catheter
• Balloon; low profile
• Balloon; long length
• Long inflation time
• Medical Management

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Faculty Disclosure
- Consultant Cardinal Health

France We Stand United

BTK Interventions: How To Make Them EASY FOR DUMMIES

Making Everything Easier
How to Make Your Life Easier

We Stand United
Endovascular Treatment of BTK

- Endovascular treatment of the Infrainguinal 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
- Longer lesions (stenosis or occlusion)
- Advance technical skills and appropriate tools are a must!

Vascular Disease: A Generalized and Progressive Process

- Unstable angina
- MI
- Ischemic stroke/TIA
- Critical leg ischemia
- Cardiovascular death


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

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


> 300 Mediators
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Mechanisms of Action of Oral Antiplatelet Therapies

Pathways to Platelet Aggregation

Coagulation Cascade in Thrombus Formation

2nd: Anticoagulation

- Unfractionated Heparin
- Bivalirudin: Direct thrombin inhibitor

*** ACT > 200

3rd: Access

- Antegrade instead of contralateral
- Tip of Sheath in the popliteal artery (longer sheath)
1. US Guidance

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

2. Road Map thru the needle

- 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 wire
- 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

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 cessation
- Lipid management with Statin
- Optimal diabetic management
- Blood pressure, wt. loss, activity, etc

13th: Listening to Mozart!

Risk Factors Modification

―Pull out, Betty! Pull out!...You’ve hit an artery!"