

Drug-Coated Balloon in Femoropopliteal CTO: All or Selective Use?



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DCB for Femoropopliteal CTOs

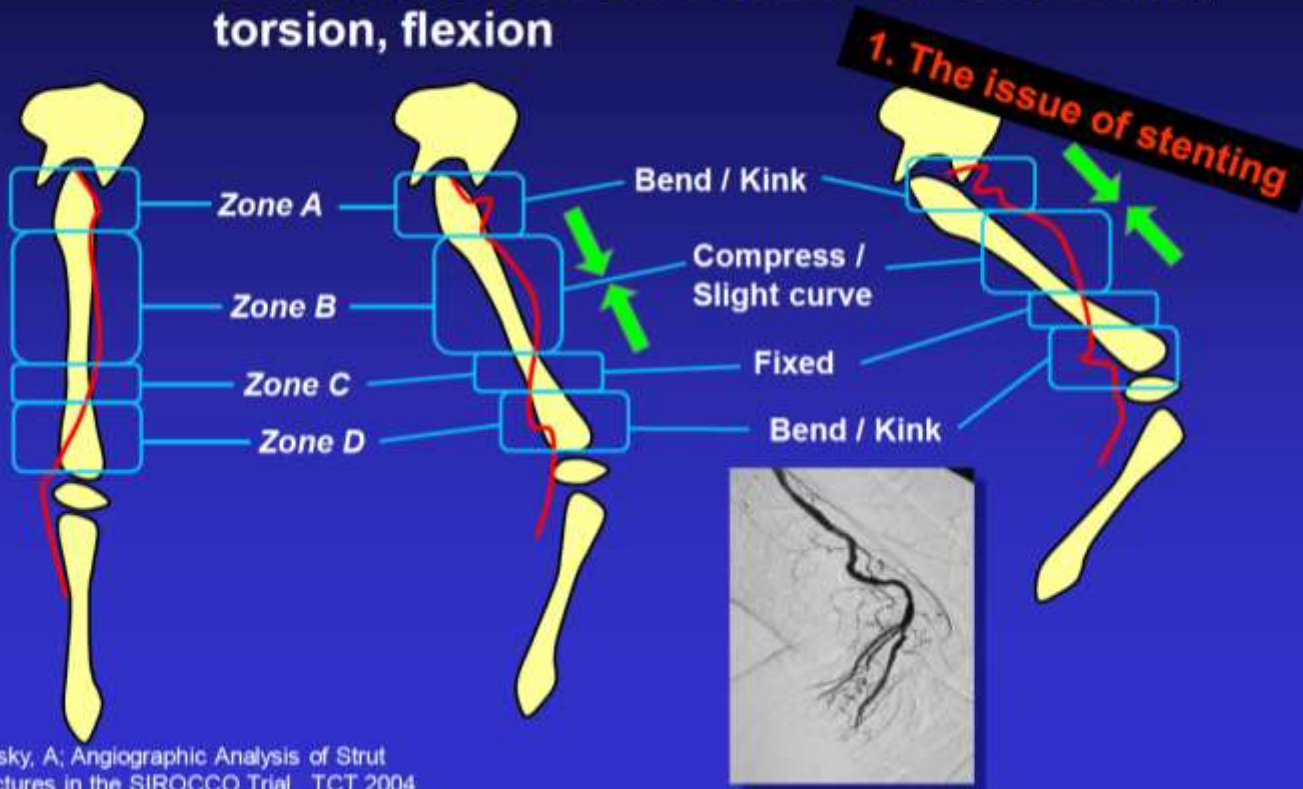


✓ **Selective use!**



Various Forces Exerting on Femoropopliteal Artery

- 1 radial deformation: compression
- 3 axial deformations: extension/contraction, torsion, flexion



Lansky, A; Angiographic Analysis of Strut Fractures in the SIROCCO Trial, TCT 2004

Problems Associated with Stents in Femoropopliteal artery



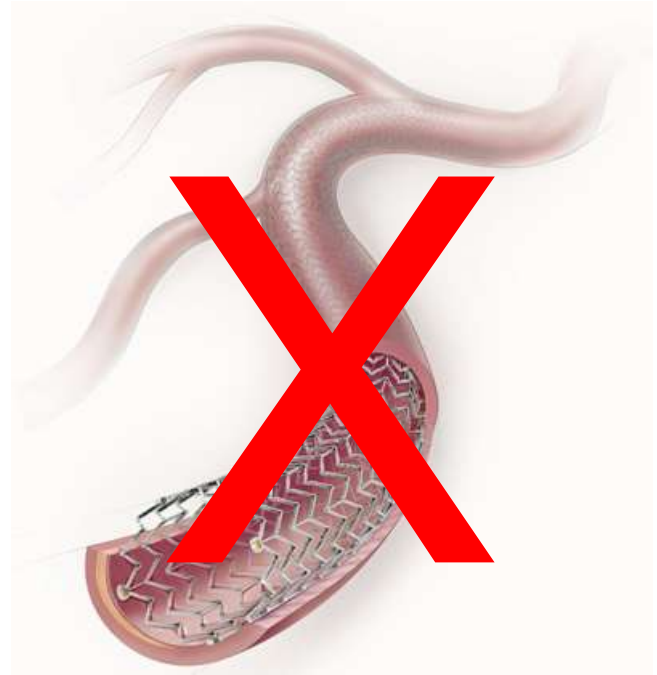
- Stents affects vasomotion in a dynamic artery
- Risk of stent fractures
- Chronic outward force of nitinol stents => increased risk of restenosis
- Implanted stents make future interventions more difficult.



Drug Coated Balloons



Nothing left behind!



Femoropopliteal CTO lesions



- Generally associated with large plaque burden and higher risk of dissection in response to balloon dilation



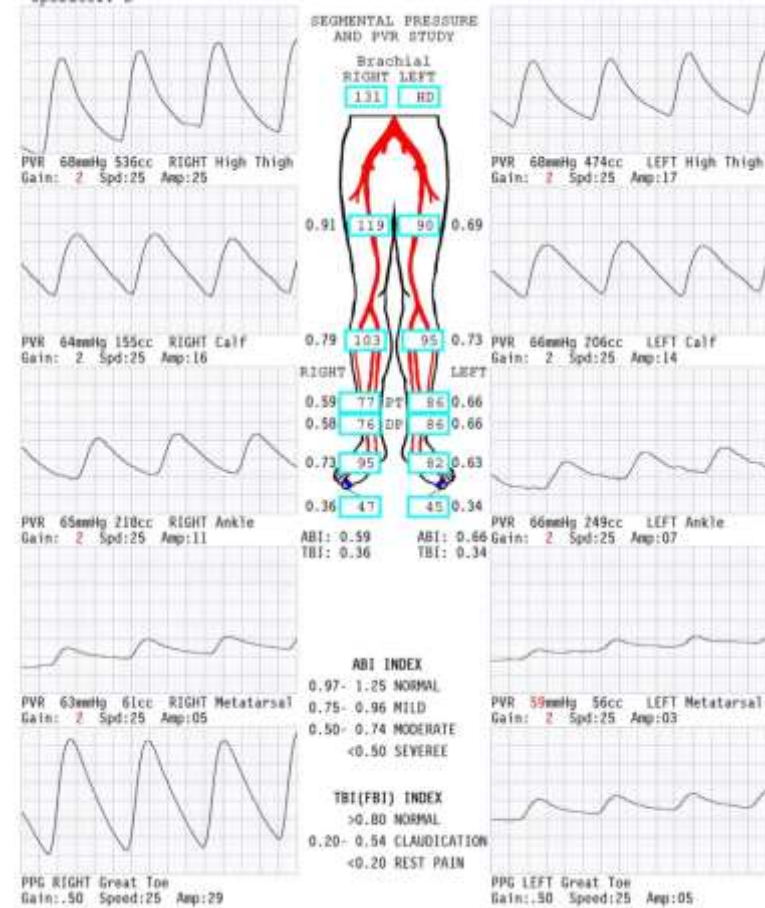


Claudication, both legs

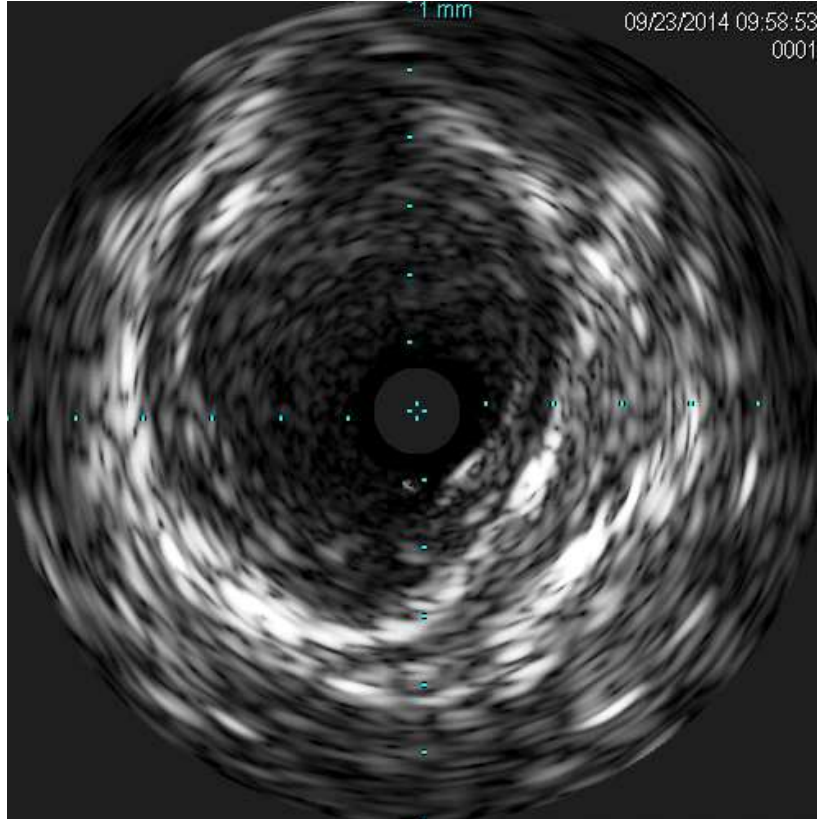
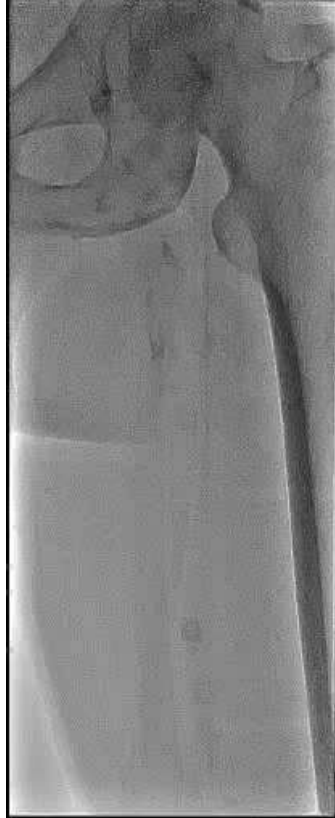
ESRD on HD

HTN

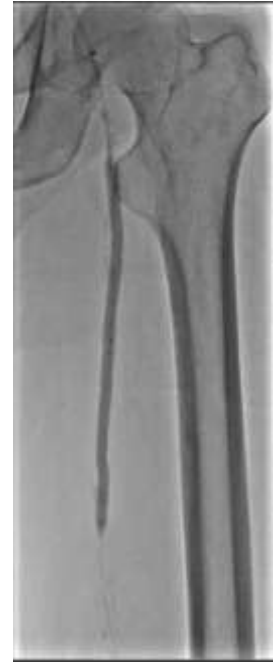
DM



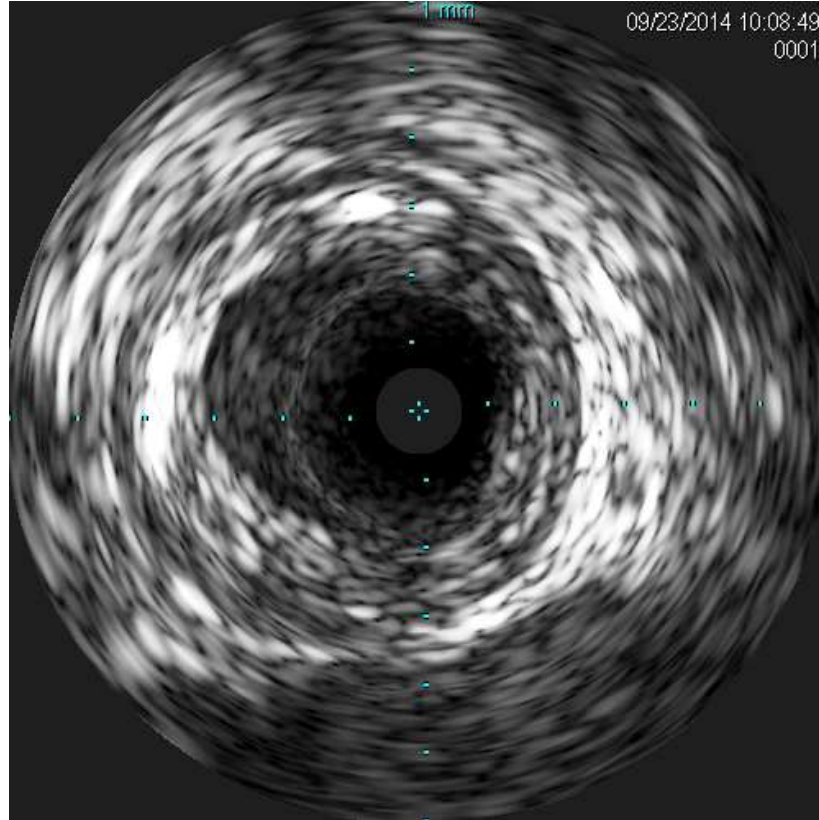
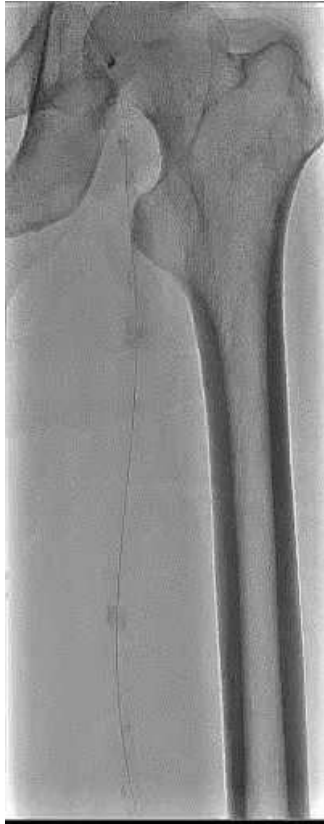
Intraluminal Balloon Angioplasty



Balloon Angioplasty



After Balloon Angioplasty



IN.PACT Global Long Lesion Imaging Cohort



Lesions (N)	164
Lesion Type:	
de novo	83.2% (134/161)
restenotic (no ISR)	16.8% (27/161)
ISR	0.0% (0/161)
Lesion Length	26.40 ± 8.61 cm
Total Occlusions	60.4% (99/164)
Calcification	71.8% (117/163)
Severe	19.6% (32/163)
RVD (mm)	4.594 ± 0.819
Diameter Stenosis (pre-treatment)	90.9% ± 14.2
Dissections: 0	37.9% (61/161)
A-C	47.2% (76/161)
D-F	14.9% (24/161)

Procedural Characteristics	
Device Success ^[1]	99.5% (442/444)
Procedure Success ^[2]	99.4% (155/156)
Clinical Success ^[3]	99.4% (155/156)
Pre-dilatation	89.8% (141/157)
Post-dilatation	39.1% (61/156)
Provisional Stent	40.4% (63/156)
LL 15-25 cm:	33.3% (33/99)
LL > 25 cm:	52.6% (30/57)

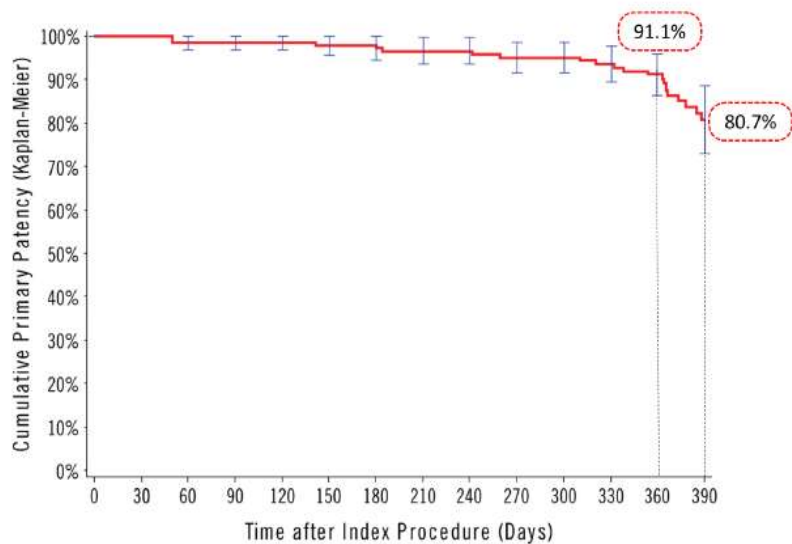
- 1. Device success:** successful delivery, inflation, deflation and retrieval of the intact study balloon device without burst below the RBP
- 2. Procedure success:** residual stenosis of ≤ 50% (non-stented subjects) or ≤ 30% (stented subjects) by core lab (if core lab was not available then the site reported estimate was used)
- 3. Clinical success:** procedural success without procedural complications (death, major target limb amputation, thrombosis of the target lesion, or TVR) prior to discharge



IN.PACT Global Long Lesion Imaging Cohort

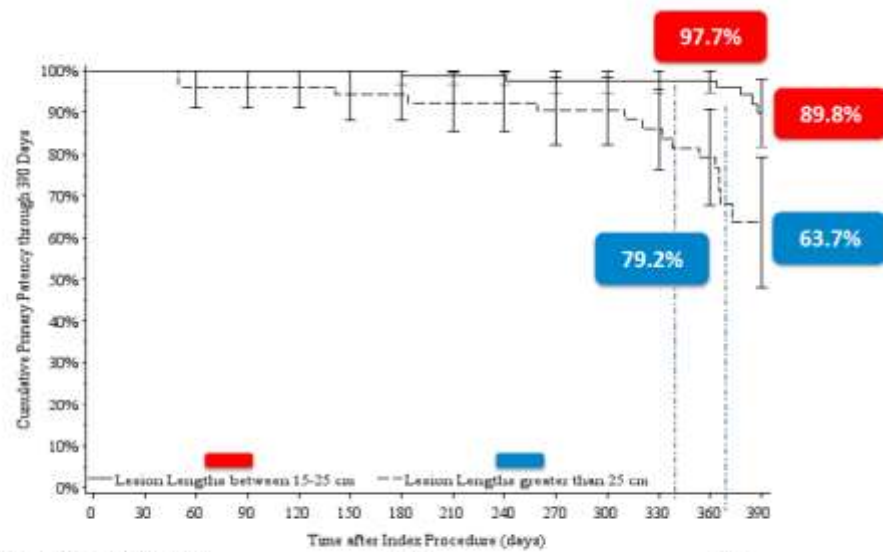


Overall primary patency



Number of subjects at risk*	Baseline (day 0)	6 mo	12 mo
IN.PACT™ DCB	157	142	119

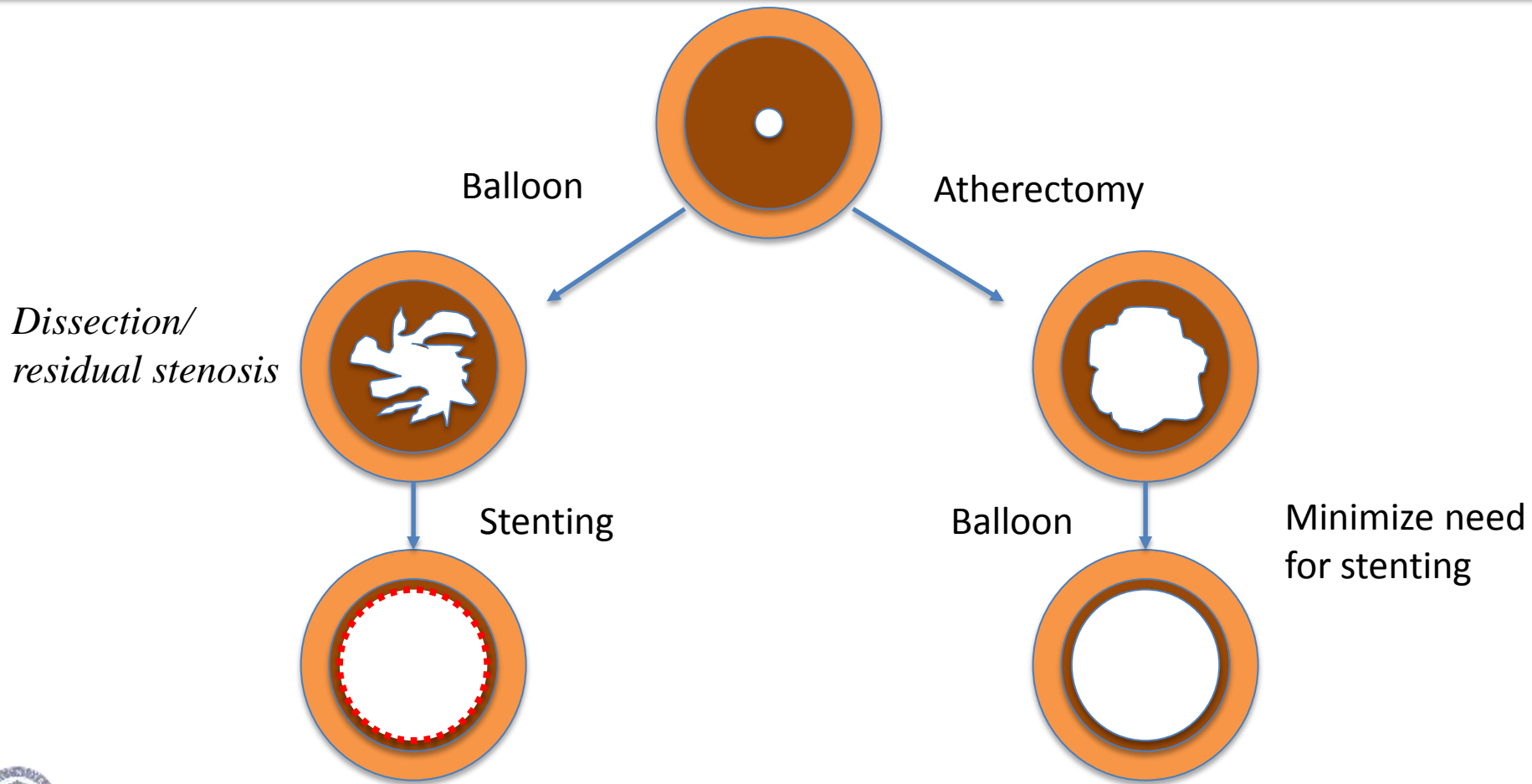
Primary patency: long vs. very long



Number of subjects at risk	Baseline (day 0)	6 mo	12 mo
Lesion Length 15-25 cm	100	92	81
Lesion Length >25 cm	57	50	38



Role of Atherectomy in Long Lesions



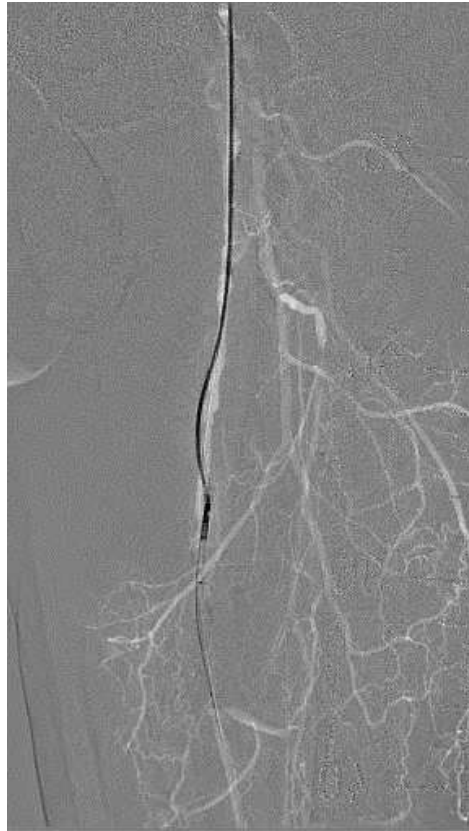
M/64

(KIK, #7704710)

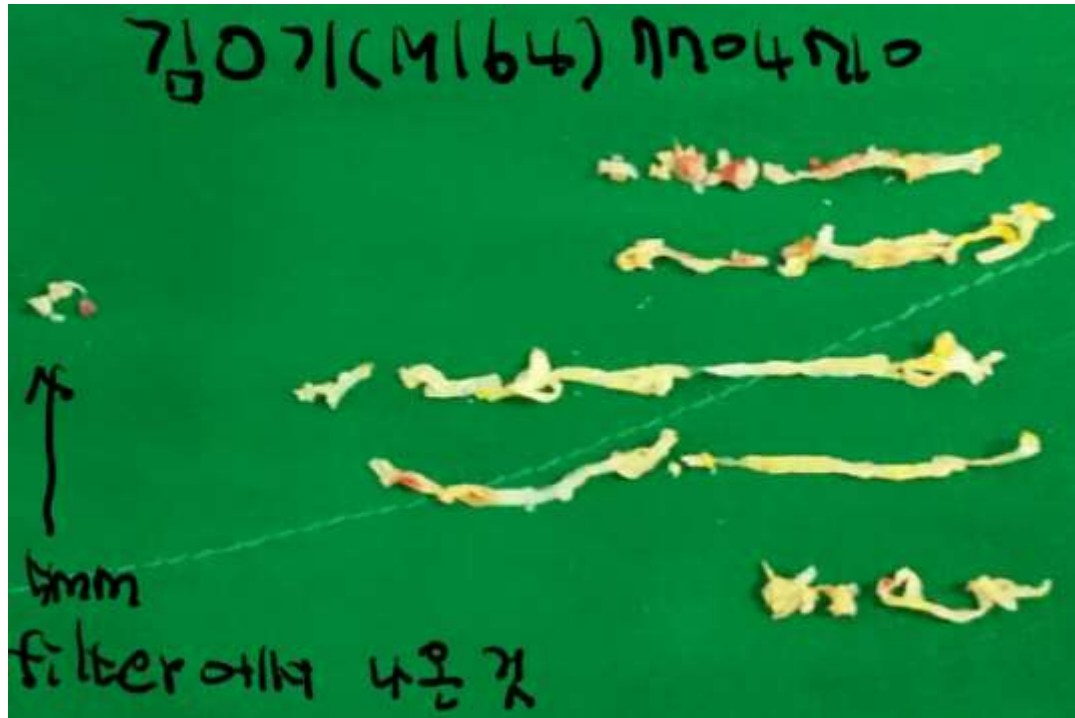
- CC: Claudication, both legs
- PHx:
 - DM
 - Old CVA
 - A-fib
 - CAD (2VD)



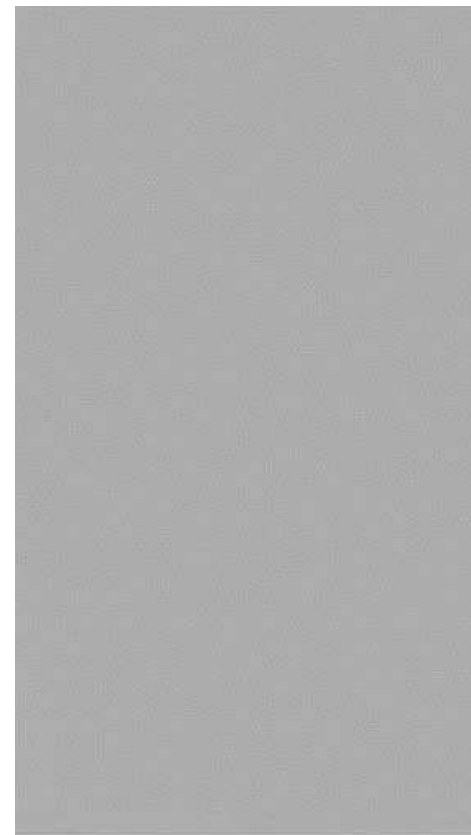
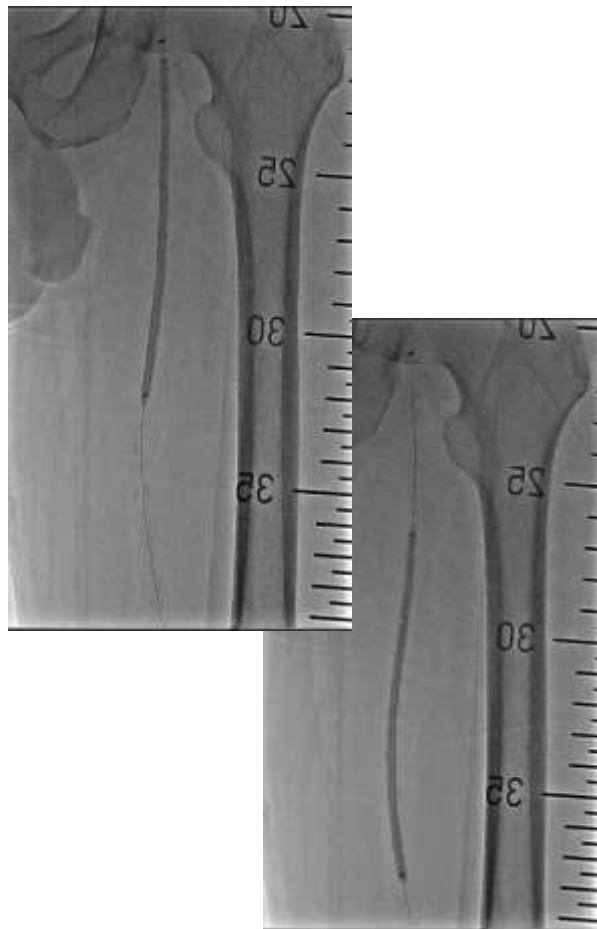
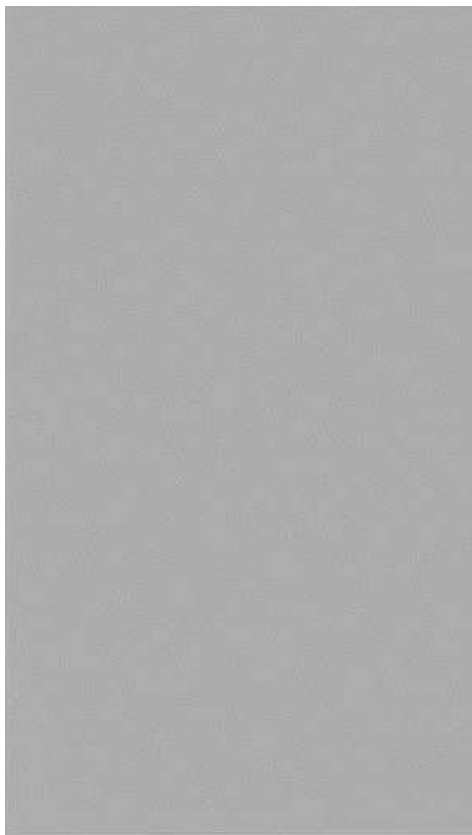
Silverhawk Atherectomy



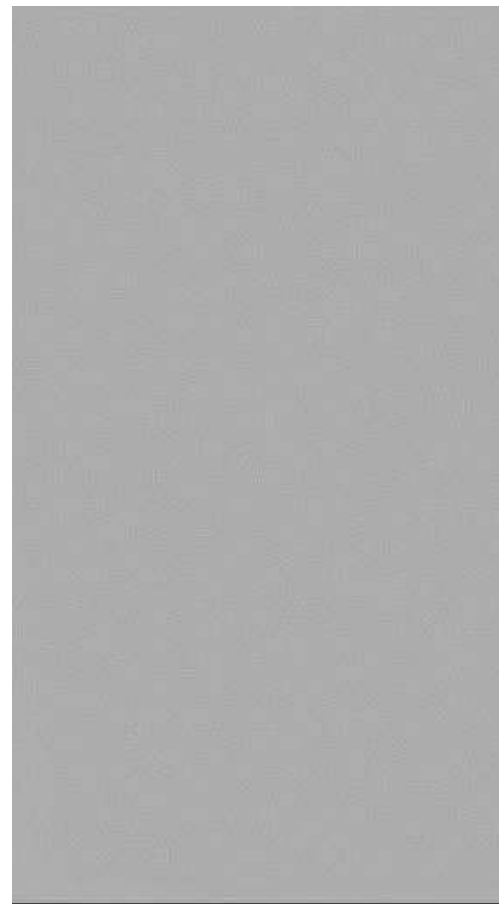
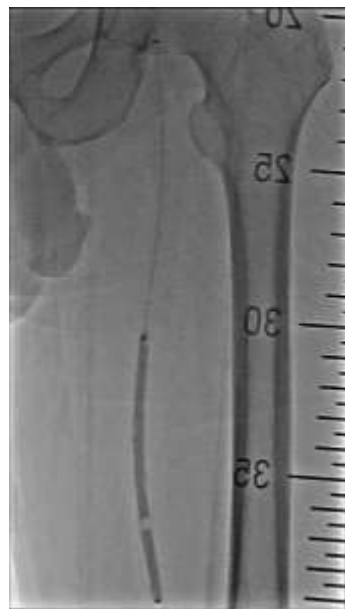
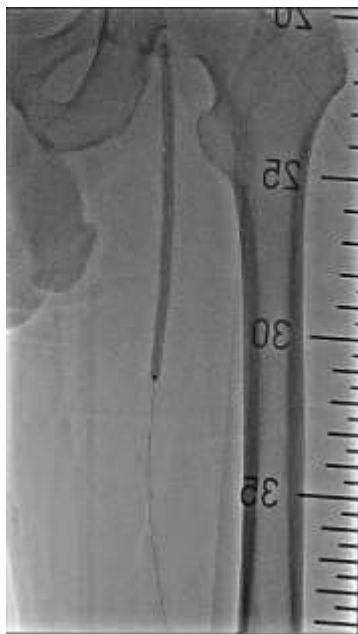
Excised and Embolized Atheroma



Predilatation

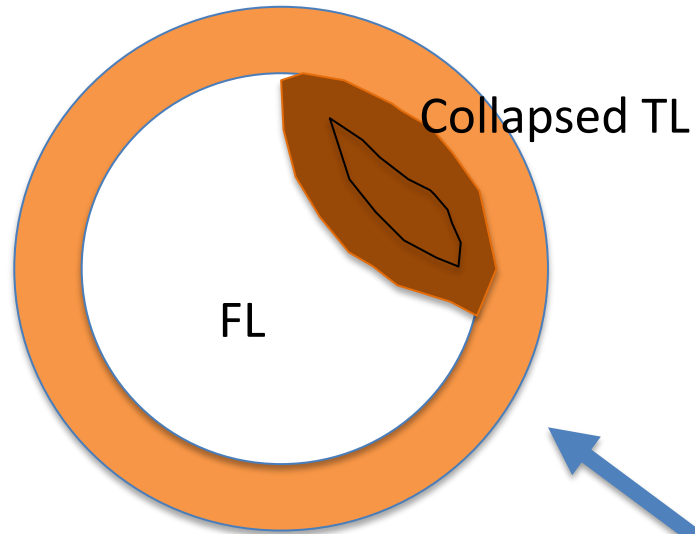


In.PACT DCB



Lumen Morphology after Balloon Angioplasty

Subintimal Approach



No protruding atheroma

Intraluminal Approach



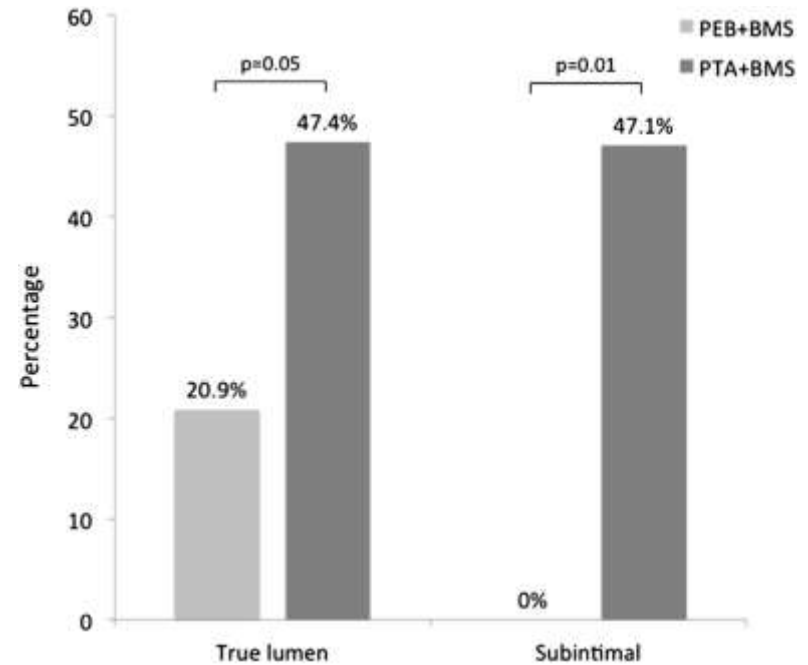
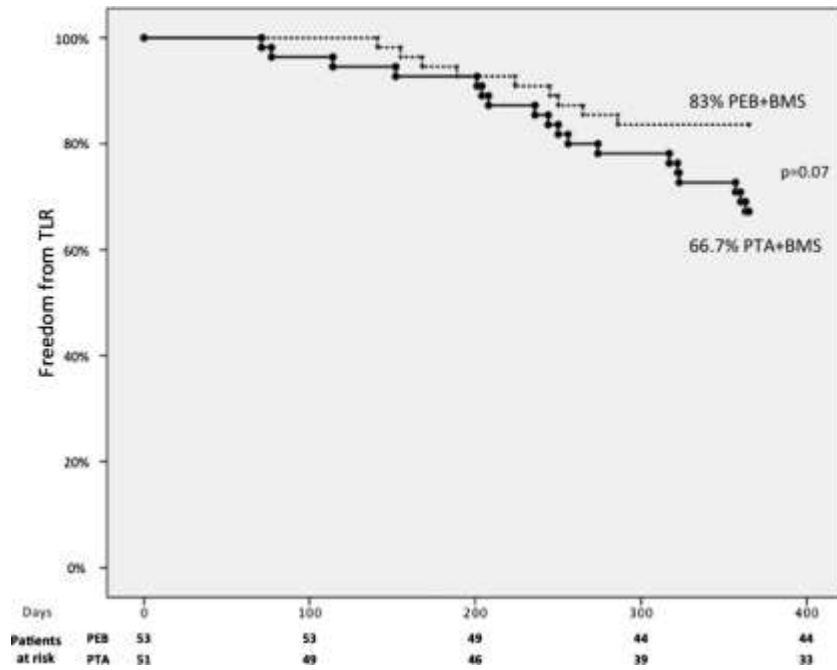
*Protruding atheroma
& dissection flap*

DCB

To reduce intimal hyperplasia



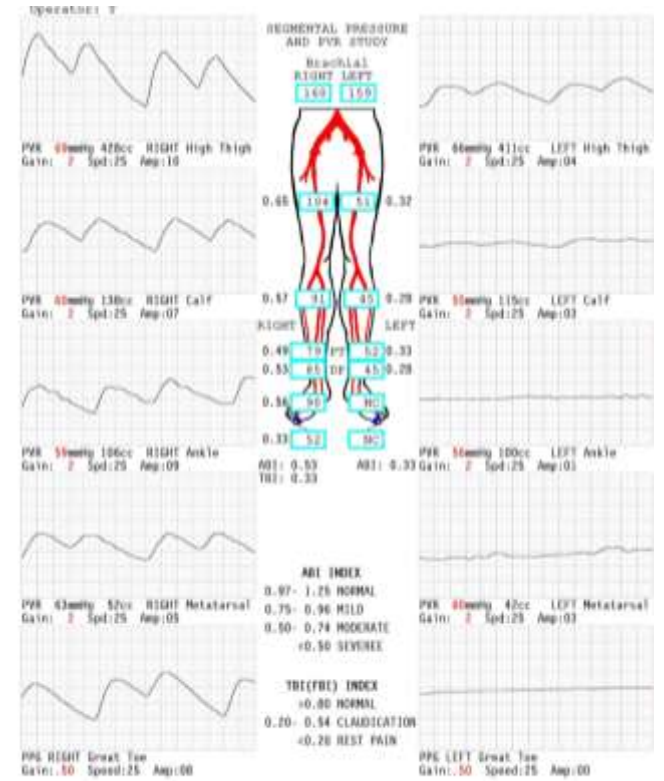
DEBATE-SFA RCT trial: PEB+BMS vs. PTA+BMS



Liistro F, JACC Intv 2013



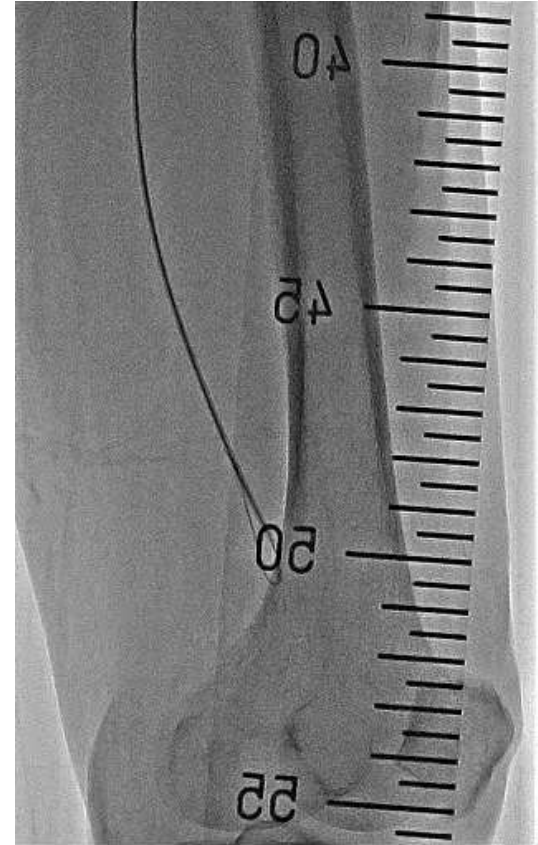
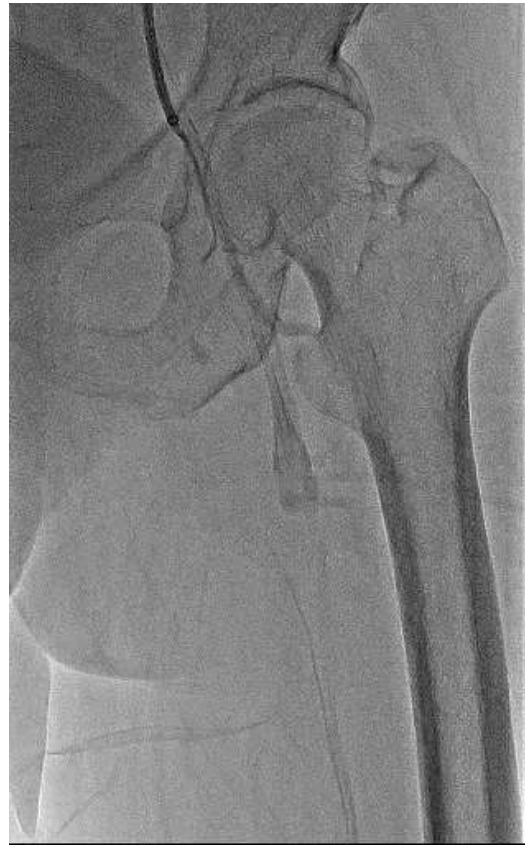
- CC: Lt. foot, toe necrosis & ulcer (Rutherford 5)
- Risk factors:
 - HTN, Dyslipidemia



ABI 0.53/0.33



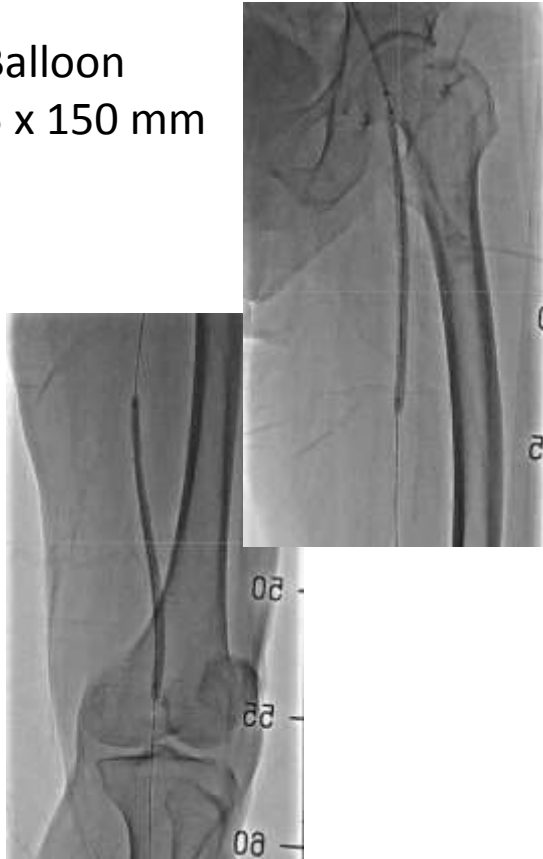
Subintimal Angioplasty



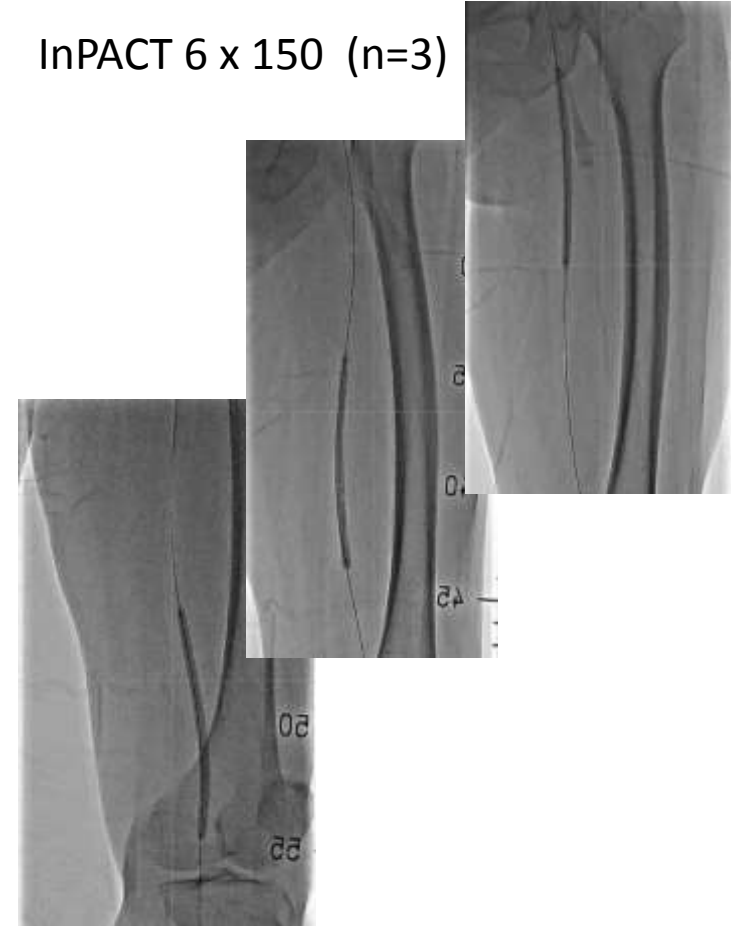
DCB after Predilation



Balloon
5 x 150 mm

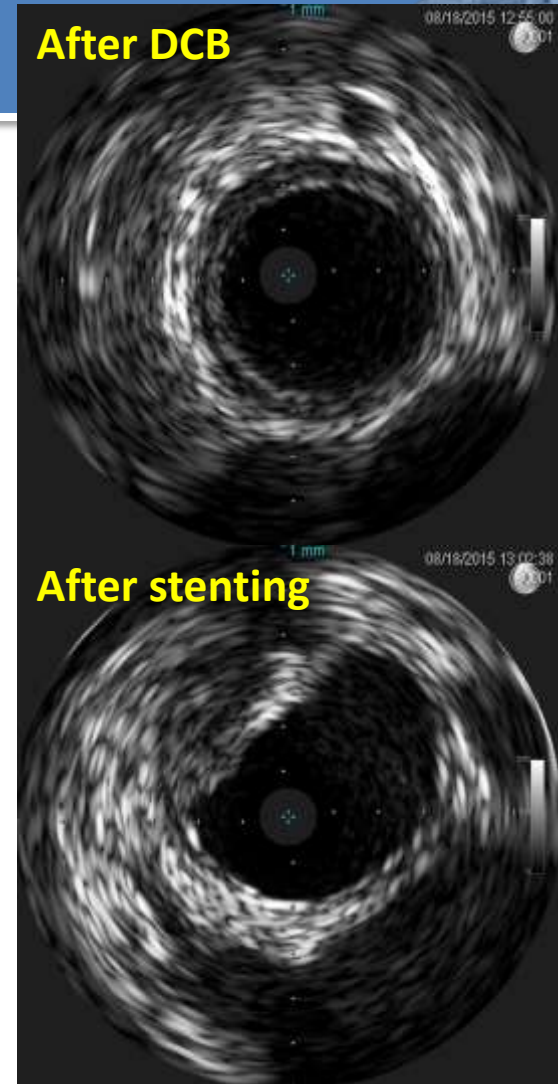


InPACT 6 x 150 (n=3)

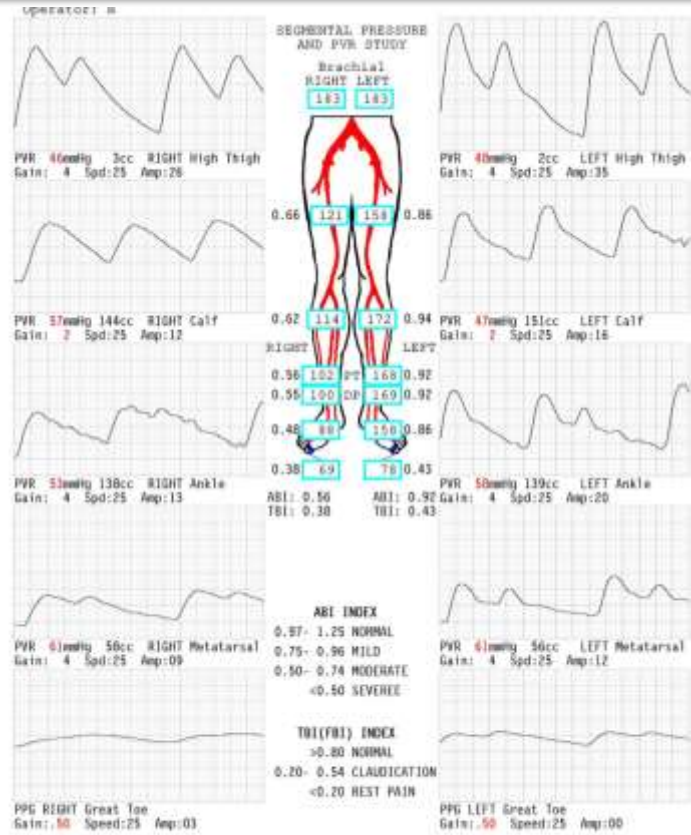


Stenting

Absolut Pro 7 x 80



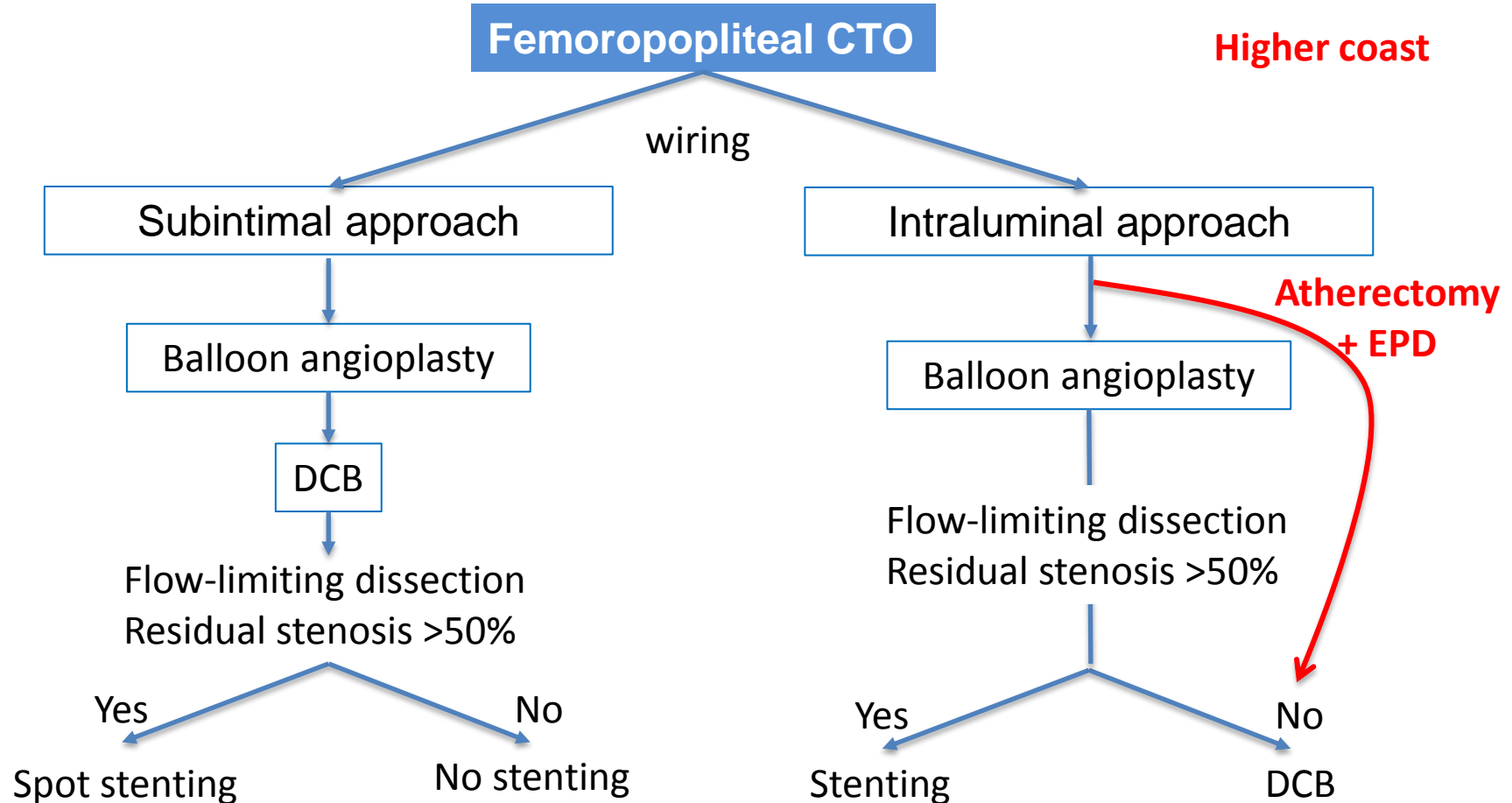
Follow-up at 9 months



ABI 0.56/0.92



My Intervention Strategies for CTO



Summary



- Intraluminal balloon angioplasty in long CTOs is often associated with significant dissections and residual stenosis requiring provisional stenting.
- In case of intraluminal angioplasty, atherectomy may minimize the need for stenting by reducing plaque burden and risk of dissection.
- Subintimal angioplasty creates a subintimal channel free of atheroma. Therefore, DCB may work better in subintimal channel than in true lumen.



Conclusion



- I would use DCB for femoropopliteal CTO, if I do intraluminal approach with intention to perform atherectomy
or,
if I do subintimal approach with provisional spot stenting.





**Thank you
for your attention!**

