BTK revascularization : technical and clinical challenges and opportunities

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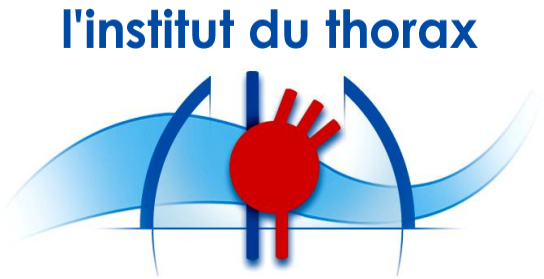
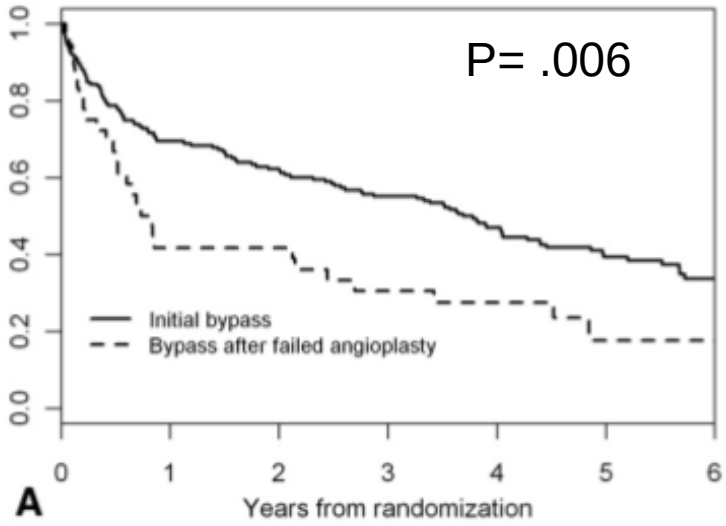


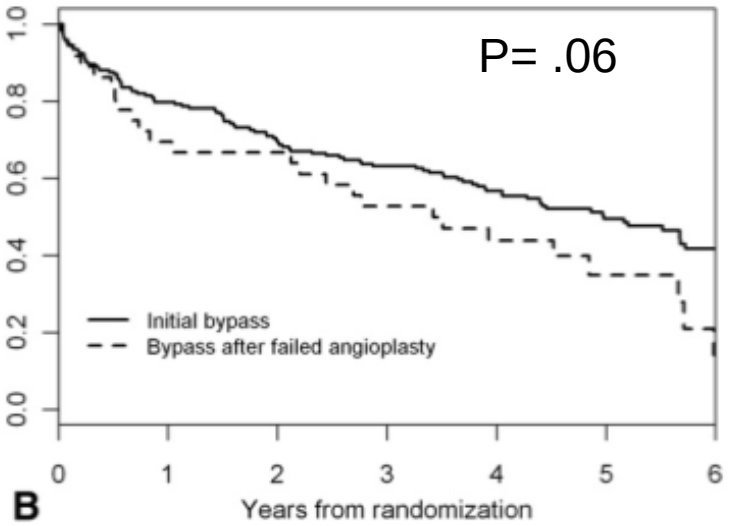
Critical limb ischemia (4-5-6)

Endovascular repair first

Survie sans amputation



Survie



Basil, Lancet, 2005

Preoperative imaging

local availability, experience, and costs

MRA

CTA

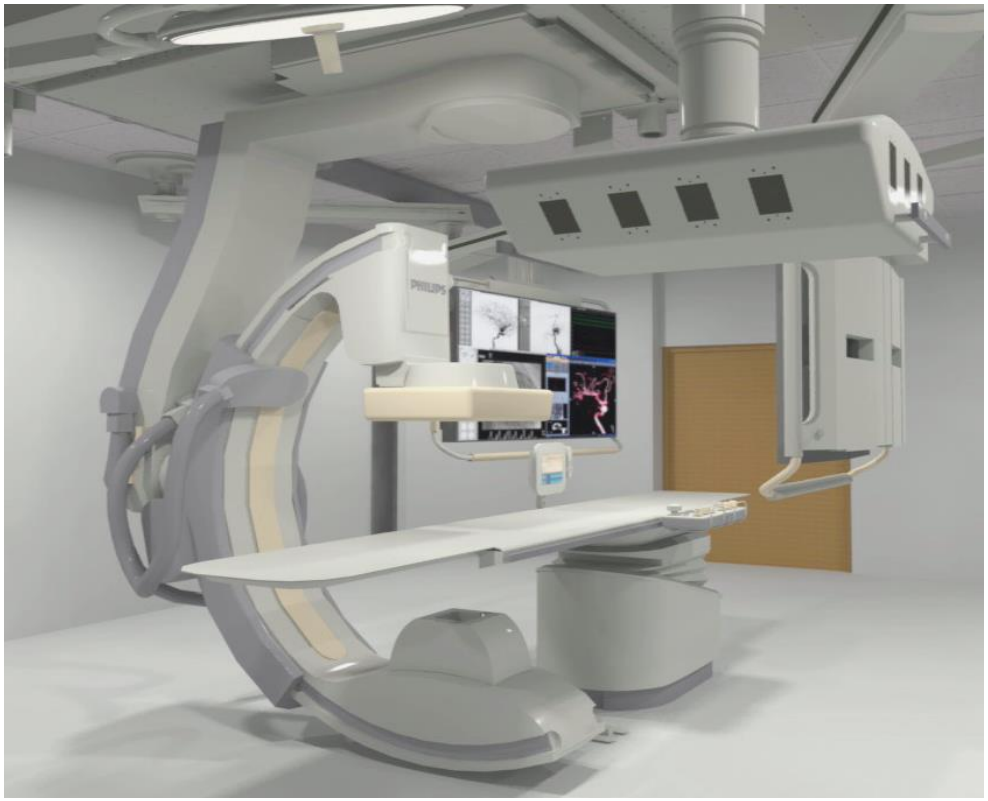
Contast angiography **(the gold standard)**

Time is tissue

Cao, Eur J Vasc Endovasc Surg, 2011

Fluoroscopic guidance

Lab cath



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Physicians' Radiation Exposure in the Catheterization Lab

CME

Does the Type of Procedure Matter?

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Carsten Schwencke, MD,* Detlef Mathey, MD*

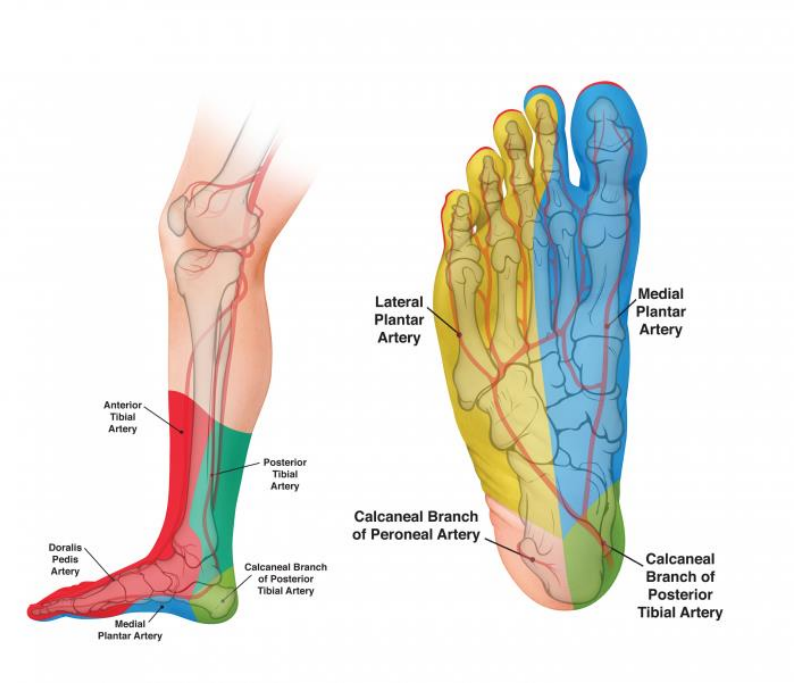
Conclusions Endovascular procedures for pelvic, upper limb, and below-the-knee disease are accompanied with a higher radiation exposure of the operator than with coronary procedures. (J Am Coll Cardiol Intv 2013;6:1095–102) © 2013 by the American College of Cardiology Foundation

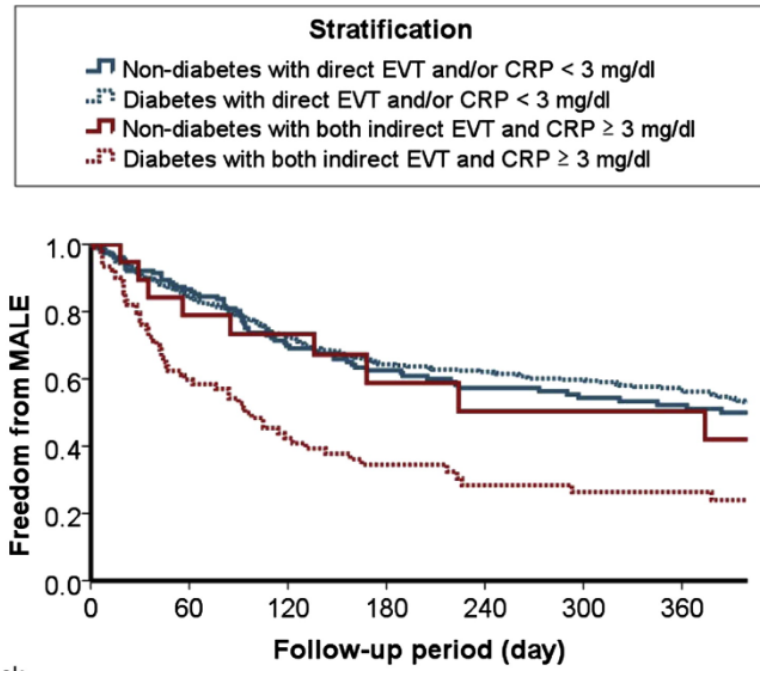
Strategy

- 1st: to improve the inflow
  - *Iliac and femoral lesions*
    - *could be sufficient*
      - *Stenting?*
- 2nd: to treat the BTK lesions

Kabra, J Vasc Surg. 2012

Angiosome based revascularization





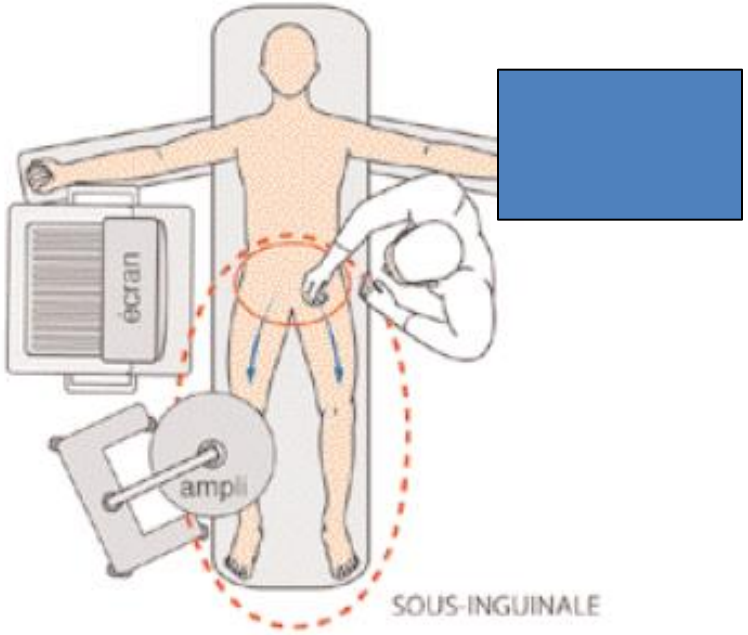
Iida, Eur J Vasc Endovasc Surg, 2013

Lejay, Ann Vasc Surg, 2013
Kabra, J Vasc surg, 2012

Anterograde apporach

Under local anesthesia and conscious sedation

Using duplex scan



Anterograde approach

To avoid in case of:

- Obesity
- Common femoral lesions
- High common femoral bifurcation
- Ipsilateral iliac artery lesion

Avantages

- Quick
- Push
- Shorter guides and catheters

Disavantages

- Irradiation+++
- Compression

Introducer

External diameter

Length

- **11cm**, **45-cm** and **90-cm**
- **Braided:c**kink resistance
- Increase pushabillity
- Decrease hand radio exposure
- Decrease contrast product amount

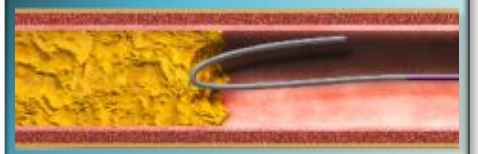
SFA disease – Stenting - Thromboaspiration


CHR LAENNEC AM
27.02.2008
12:23:33
DR GOUËFFIC
62
64
62 kVp
5,13 mA
210
OEC


CHR LAENNEC AM
24.10.2008
09:25:28
43
33
58 kVp
0,70 mA
254
OEC

Common challenges

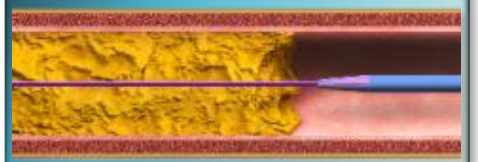
Tip fails to enter lesion – Wire tip buckles against lesion



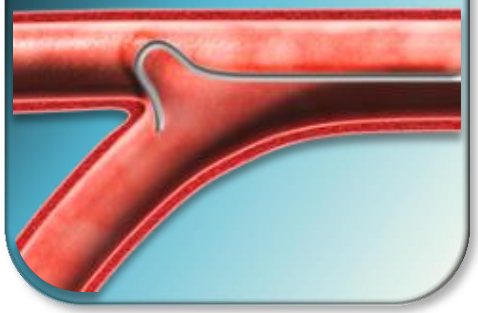
Tip enters lesion but wire fails to follow + Wire body curves and buckles

Wire enters Subintimal space but fails to re enter true lumen

Wire Crosses but device fails to cross



Wire Prolapses on entry or Flips out on Device Delivery



Failure to select a side branch

Guidewires

Core diameter

Smaller: flexibility, trackability

Higher: rail support, torque, straighten vessels

Tip

steering and durability.

Core material

Stainless steel – Nitinol - Hybrid

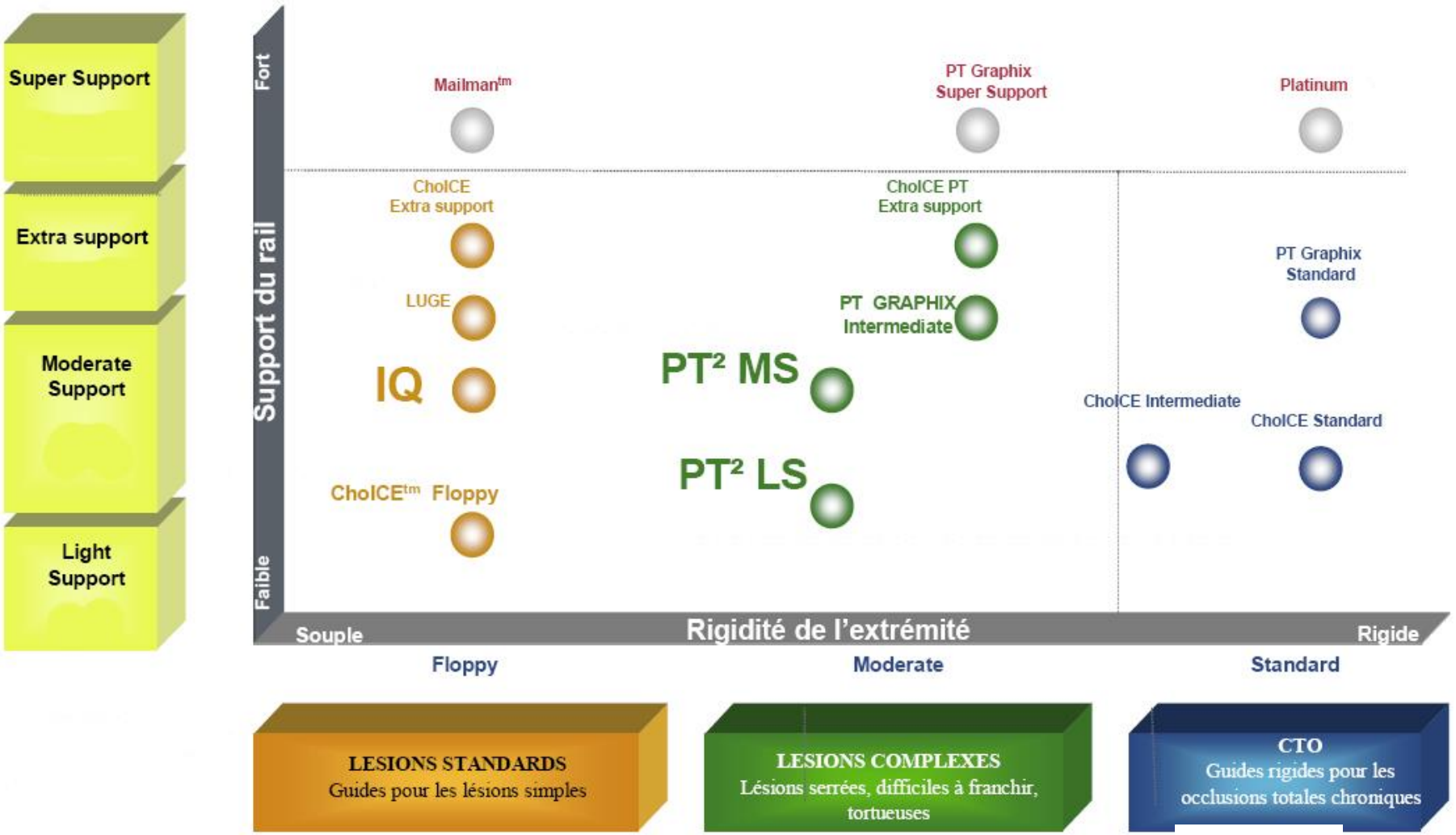
Flexibility, support, tracking, steering

Core taper

Broad, gradual, or long tapers: tracking

Short tapers: support in short distance

0.014” and 0.018” guidewires for coronary procedures



0.014” and 0.018” guidewires for peripheral procedures

	GUIDEWIRE NAME (0.014)	
Navigating	Journey™	
	Thruway™	
Crossing	V-14™ ControlWire ® 1	
	Victory™ 14	
Delivery Support	Platinum PLUS™	

	GUIDEWIRE NAME (0.018)	
Navigating	Thruway™	
Crossing	V-18™ ControlWire ® 1	
	ZIPWire™ Small Vessel 1	
	Victory™ 18	
Delivery Support	Platinum PLUS™	

Support catheter

Why ?

- Support / Pushability
- Guide exchange
- Angiogram
- Lesion length

Features

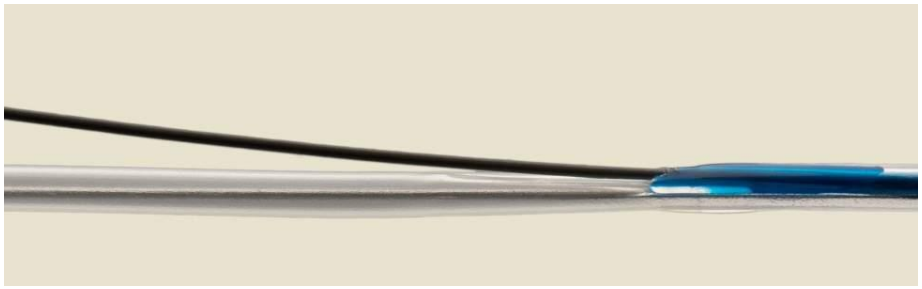
- 0.014”, 0.018” support catheter
- Multiple lengths: 65, 90, 135 & 150-cm
- Radiopaque marker bands
- Hydrophilic coating

Rubicon suppport catheter
(Boston Scientific)

Balloon catheter:
dedicated below the knee design

Shaft

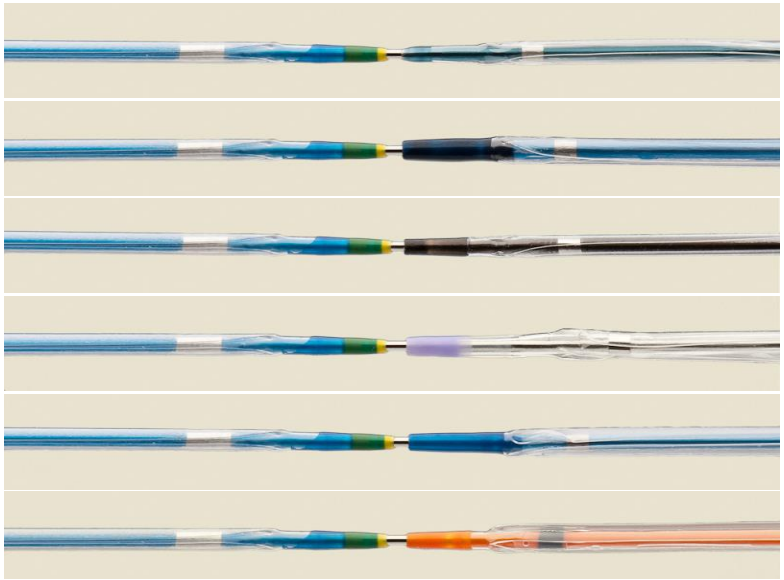
0.014 - 0.018
Rx / OTW
Shaft 60 - 90 - 150
Pushability



Balloon catheter:
dedicated below the knee design

The balloon

- 1.5 to 4-mm diameter
- 20 to 200-mm length
- High rated burst pressure
- Profile (0.016-0.022)



Stents

As a bail out

- *Residual stenosis >50%*
- *Flow limiting dissection*

Balloon expandable stents

Self expendable stents

Message to take home

- CLI and BTK lesions: endovascular first

- Anterograde access and direct revascularization of the ischemic angiosome

- Dedicated devices

- Technical failure: other approaches an techniques

- Cost / benefit