Retrograde balloon assisted approach to prevent distal embolization during complex recanalization procedures

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I have the following potential conflicts of interest to report:

- Consulting: Abbott, Medtronic, Terumo
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare Company
- Other(s): Honorarium: Asahi/World Medical, i-Vascular, Biotronik, Boston Scientific, BD
DISTAL EMBOLIZATION
• adds costs and additional resources:
  - dedicated thrombectomy devices
  - ICU availability (fibrinolytic therapy)
• jeopardize the viability of the limb

HIGH RISK SCENARIOS
• long CTO (↑ component of non-chronic thrombus)
• unstable plaques
• atherectomy or mechanical thrombectomy
• single vessel run-off
“OFF-THE-SHELF” EMBOLIC PROTECTION DEVICE

EPD^{BTK/BTA}

- low availability
- designed for other vascular beds
- IFU ≥ 3mm
- require a certain length of “appropriate” vessel
- spasm, dissection, de novo thrombus as a result of EPD
- thrombus dislodgement due to incomplete aposition or during filter closing and standard sheathing techniques
- prior need for crossing the lesion (embolic debris may be produced)
Retrograde Balloon-Assisted Approach to Prevent Distal Embolization During Complex Recanalization Procedures

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Affiliations + expand

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1. retrograde access
2. “through-and-through” wire
3. standard atherectomy procedure
4. inflation of the distal balloon before the atherectomy device reaches the distal cap
5. crossing the distal cap, the debris is blocked by the balloon
6. the atherectomy device is removed
7. plaque remodeling by balloon angioplasty
8. debris aspiration through a curved catheter
9. distal balloon deflation
ADVANTAGES

• ↑ availability
• ↓ cost
• highly conformable to vessels characteristics
  • ↓ caliber, highly calcified…
• protection during the overall procedure
  • ↓ the risk of embolization during crossing
• “through-and-through” wire gives stability and facilitates the atherectomy procedure (e.g. ATA)
  • adds stability, guidance…
Atherectomy

Balloon angioplasty

Catheter aspiration

“OFF-THE-SHELF” EMBOLIC PROTECTION DEVICE
“OFF-THE-SHELF” EMBOLIC PROTECTION DEVICE

retrograde balloon
RESULTS (preliminary study)

12 Patients

- BTK segment atherectomy
- Distal protection with a balloon

- Macrosopic Debris (4)
- Plaque (3)
- Thrombi (1)

NO COMPLICATIONS
Completion angiography: NO DISTAL EMBOLIZATION
"OFF-THE-SHELF" EMBOLIC PROTECTION DEVICE

TAKE HOME MESSAGES

1. Alternative technique in high risk scenarios
   - long CTO (↑ component of non-chronic thrombus)
   - unstable plaques
   - atherectomy or mechanical thrombectomy
   - single vessel run-off

2. ↑ availability and ↓ cost
“OFF-THE-SHELF” EMBOLIC PROTECTION DEVICE

STAY SAFE AND USE protection!

"SAVE YOUR TEARS FOR ANOTHER DAY"
“OFF-THE-SHELF” EMBOLIC PROTECTION DEVICE

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