BTK crossing technique for the “uncrossable” lesion
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Disclosure

Speaker name: Tatsuya Nakama MD.

I have the following potential conflicts of interest to report:

- **Consulting:** Boston Scientific Japan, Century Medical Inc.
- Employment in industry: None
- Stockholder of a healthcare company: None
- Owner of a healthcare company: None
- **Other(s): Honoraria received from**

  - Abbot Vascular, Asahi Intecc., Boston Scientific, COOK, Cordis
  - Cardinal Health, Goodman, KANEKA, Lifeline, Medikit, Medtronic,
  - Orbus Neich, Terumo,
Definition of “Uncrossable”

- **GW** crossing?
- **Device** crossing?
Strategies of GW crossing

1. Antegrade approach
   1-1: Intraluminal approach
     • Japanese art: 0.014-inch GW
   1-2: Subintimal approach (loop technique)
     • Hydro-dynamic boost (SUICA)
     • Micro-knuckle

2. Retrograde approach
   2-1: Distal puncture
   2-2: Trans-collateral or pedal
Severely Calcified lesions

Challenges in “Device Crossing”
Case overview
60s Male
Type 2 DM, HD
Rutherford 6

Wifi CS 4
- FPA CTO
- BTK CTO
Initial angiogram in 2\textsuperscript{nd} EVT
Initial angiogram of BTK lesion
Treatment strategy

<First challenge>
Severely calcified TPT revasc.
→ Necessary

<Next challenge>
Tibiopedal revasc.
→ If it possible
TPT revascularization
Challenging situation...

NC balloon

Cutting balloon
Scoring balloon

3 elements

Pre-Inflation

Inflation

120°
What should we do???

Is there any solution?
Front cult debulking devices...

These devices are **not available** in Japan
Amazing final solution

Brockenbrough Needle
Challenging procedure....
It seemed dangerous...

Ready....
Attack with Brockenbrough needle!!

Go!!
Angiogram after debulking
Additional POBA with NC balloon
Angiogram after POBA
Additional PTA revascularization

Antegrade go down to the outside
Intentional (bi-directional) subintimal approach

Avoid the calcified plaque
(Bi-directional approach may be required)
Challenging plantar artery puncture

Second GW go up to the true lumen
Subintimal angioplasty & Rendezvous

Retrograde subintimal approach with Knuckled Regalia XS 1.0

Successful Rendezvous Astato XS 9-12
POBA to PTA & pedal
Final angiogram
Clinical course

TMA was demonstrated for infection control

Good clinical course
Strategy for uncrossable lesion

Procedure with Monorail type support catheter

Microcatheter (1.6 to 2.0-Fr)

NOT Pass the lesion
- Low-profile 1.5mm or less B/C
  - Use OFF LABEL devices
    - Crosser (BARD)
    - Rotablator (Boston)
    - Brockenbrough needle

NOT Pass the lesion

Pass the lesion
- POBA 2.0mm long

BAD FORM technique

Intentional sub-approach (avoid Ca plaque)
Several Devices & techniques

- Extension guide
- Low-profiled balloon
- Brockenbrough needle
- Front-cut debulking
  NOT AVAILABLE
- Bad Form
- Crosser
  OFF label
- PIERCE
Uncrossable cases were observed
DVA

(Deep venous arterialization)

may be final option
Concept of DVA

In flow
BTK & BTA
disease

Failed revascularization

Tissue perfusion may improve

DVA: Deep venous arterialization
Our 1\textsuperscript{st} case of DVA
Arterial revascularization was failed

GW crossing  Failed POBA  PIERCE technique  Balloon rupture
Angiogram after the procedure
Clinical course (immediately after DVA)
Conclusion

BTK intervention is always challenging

We have to continue dedicated effort to make a future options & evidences for “Untreatable” patients
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