A novel IVUS guided parallel wire technique for achieving intra-luminal angioplasty of femoro-popliteal CTO lesion

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Disclosure

Speaker name:

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

✓ I do not have any potential conflict of interest
IVUS guided strategy for femoro-popliteal CTO

1st step. Proximal cap penetration
1. Penetration with IVUS guidance
2. Side branch IVUS parallel wire technique

2nd step. Advancing the system
1. IVUS going first technique
2. Single guidewire with IVUS guidance
3. Parallel guidewire with IVUS guidance

3rd step.
Retrograde approach
1. Distal SFA puncture
2. Popliteal puncture
3. Tibial puncture

Lesion not cross
Lesion crossing
## Eagle Eye® Platinum ST

### 20MHz Phased-array IVUS Imaging Catheter

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<tr>
<th>Eagle Eye® Platinum 85900PST</th>
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<td><strong>Tip Comparison</strong></td>
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<td>Eagle Eye® Platinum ST Catheter</td>
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<tr>
<th><strong>24cm. GlyDx® Hydrophilic Coating</strong></th>
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<td>10 mm</td>
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<td>Transucer O.D. (F)</td>
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※トランスデューサー部外径 : 3.5F
IVUS Strategy

Step 1. Penetration of proximal fibrous-cap

1. IVUS guided penetration (For tapered entry)
2. Side branch IVUS guided parallel wire (For blunt type entry)

Step 2. Advancing the system

1. Single guidewire with IVUS guidance

2. IVUS going first technique

3. Parallel guidewire with IVUS guidance (stiff type wire)
Step 3. Retrograde approach

1. Retrograde wiring with antegrade IVUS guidance
Case 1.

Patient: 78 year-old female
Diagnosis: PAD (Rutherford 3)
Past history: Type2 DM, Brain Infarction
Risk factor: DM, Hypertension

ABI: 0.92/0.56
Systems: Rt CFA contralateral approach
6F Parent plus 26cm + 6F Mach1ST
IVUS: Eagle Eye platinum ST

Proximal cap penetration (CFA)
Side branch IVUS guided parallel wire
IVUS guided EVT

POBA for DFA

IVUS going first (SFA)

Single GW with IVUS (SFA)
Distal SFA puncture “Omote-pun” Crossing the lesion
IVUS examination after pre-dilatation

SFA distal ~ mid

SFA mid ~ proximal
POBA for proximal lesion

KBT

Final angiography
Case 2.

Patient: 81 year-old male
Diagnosis: CLI (Rutherford 5)
Past history: AMI(LAD), Brain Infarction, COPD
Risk factor: Hypertension, Smoking

ABI: Right 0.97 / Left 0.35
Systems: Lt CFA ipsilateral approach
6F Parent plus 26cm + 6F Mach1ST
IVUS: Eagle Eye platinum ST

Proximal cap penetration  IVUS going first
Parallel GW
With IVUS guidance

Lesion crossing
Final angiography
Case 3.

Patient: 63 year-old male (Cane walking)
Diagnosis: CLI (Rutherford 4)
Past history: Type2 DM, Schizophrenia
Risk factor: DM
ABI: 0.92/0.74
Systems: Lt CFA ipsilateral approach
6F Parent plus 26cm + 6F Mach1ST
IVUS: Eagle Eye platinum ST

“No stump”
Side branch IVUS technique

- IVUS Pullback from side branch
- Proximal cap penetration
- CTO proximal cap
Parallel GW with IVUS

Lesion crossing

IVUS after wire crossing
Multiple IVUS guided technique enables us to find a proximal fibrous cap correctly and perform intra-luminal angioplasty that lead to avoiding sub-intimal ballooning or stenting.

Although, neither drug-coated balloon (DCB) nor debulking devices were not available in Japan at the moment, it is considered to be important performing intra-luminal angioplasty in order for properly working of DCB or debulking devices.

However, there are few data regarding the IVUS guided intra-luminal angioplasty, further studies are needed to clarify the benefit of this strategy.
Conclusion

IVUS guided EVT should be useful to achieve intraluminal angioplasty
Thank You for your attention!!
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