IVUS-guided DES Implantation for Treating Long-SFA CTOs

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Disclosure

Speaker name:

..................Hiroyoshi Yokoi...............................................................  

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)  Cook, Termo, BSJ, Medotoronic, Abott, Medicon

☐ I do not have any potential conflict of interest
Conclusion: IVUS use in femoro-popliteal stenting for TASC II class A to C lesions was associated with a higher rate of primary patency in PAD patients.
At 5 years, Zilver PTX demonstrates a 48% reduction in reintervention compared to standard care.
IVUS Guidance is associated with significant reductions in DES outcomes.

**No. of Risk Factors & Restenosis/MALE Incidence**

- Risk factors for restenosis:
  1. lesion length ≥ 16 cm
  2. EEM area ≤ 27 mm²
  3. MSA ≤ 12 mm²

1-year restenosis rate was as low as 15% in cases with none of these risk factors, whereas it reached 51% in those with ≥ 2 risk factors.
IVUS-guided Implantation of DES to Improve Outcome: A Meta-analysis

24,849 patients from 3 randomized trials and 12 observational studies, 2005-2013.

<table>
<thead>
<tr>
<th>IVUS- vs Angiography-guided PCI</th>
<th>OR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACE</td>
<td>0.79 (0.69-0.91)</td>
<td>0.001</td>
</tr>
<tr>
<td>All-cause Mortality</td>
<td>0.64 (0.51-0.81)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>MI</td>
<td>0.57 (0.42-0.78)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Stent Thrombosis</td>
<td>0.59 (0.42-0.82)</td>
<td>0.002</td>
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</tbody>
</table>

**Conclusion:** IVUS guidance is associated with significant reductions in PCI outcomes compared with angiography alone.

80s male, CLI without dialysis

Infective gangrene on 4th toe

Risk factors
Type II DM, Hypertension
Hyperlipidemia

Previous History of
Post CABG
Post CVA
Severe AS
Lower extremities MRA

ABI: Rt 0.72, Lt not measure
SPP: RT 48/32. Lt 15/7

Lt CIA Occusion
Lt SFA Occusion
Final Ango (1st session)
A Side-Grooved Guiding Sheath as an Effective Treatment Strategy for Femoro-Popliteal Artery Lesions

Shinichiro Yamaguchi, MD, Kan Zen, MD, PhD, and Daisuke Kambayashi, MD

During revascularization for chronic total occlusion (CTO) of the proximal superficial femoral artery (SFA), the guiding sheath may prolapse out of the common femoral artery (CFA) or may not be fully inserted during treatment. Therefore, we have developed a treatment strategy using a novel side-grooved guiding sheath, whereby a 5.0-Fr guiding sheath (45 cm long) with a 1.0 mm × 5.0 mm rectangular side-groove is inserted into the deep femoral artery, the side-groove is aligned with the bifurcation, and the SFA lesion treatment is performed via the side-groove. This technique provides good stability and maintains the wire’s torque performance, while avoiding sheath prolapse from its position in the CFA. We have successfully treated seven cases of SFA-CTO with this guiding sheath, and did not observe any increase in complications, procedure time, or amount of contrast media (vs. the conventional procedure). Therefore, our side-grooved guiding sheath appears to be safe and effective for treating SFA-CTO, and we hope to perform additional development of this technique. © 2015 Wiley Periodicals, Inc.

Key words: superficial femoral artery; lesion treatment; chronic total occlusion
0.018 Treasure GW manipulation with 4F CXI catheter through novel side-grooved sheath by surface echo guidance
Echo guide (SFA-DFA Bif)
SFA CTO BA
(Ultraverse: 4.0 × 220mm)
1st IVUS after BA

Subintimal Space
IVUS guided 0.014 Astato 9-40 wire re-manipulation to get the intraluminal lumen with Prominent micro-catheter
Advantages of IVUS Guided Intervention

CTO-exit

High probability to capture the true lumen.
2\textsuperscript{nd} IVUS after BA

270 degree severe superficial calcification
Lesion Preparation
(Cutting BA 4.0 × 15mm)
Advantages of IVUS Guided Intervention

Sort of quantitative assessment of calcification

Determine when lesion preparation should be considered
DES Implantation

Zilver PTX (6.0 × 100mm)    Zilver PTX (6.0 × 100mm)    Zilver PTX (7.0 × 100mm)
DES Implantation

Zilver PTX (8.0 × 100mm)
Advantages of IVUS Guided Intervention

Identify proximal and distal reference segment landing zones and accurately select stent size and length to maximize stent dimensions.
Post Stent dilatation with high-pressure (18atm) BA dilatation (5.0 × 100mm)
IVUS (Post BA)
Advantages of IVUS Guided Intervention

**Identify maximize stent cross-sectional area relative to reference.**
After minor amputation, wound was completely healed
6 months follow-up (No restenosis)
Advantages of IVUS Guided Intervention

**Pre-intervention**
1) High probability to capture the true lumen
2) Identify proximal and distal reference segment landing zones and accurately select stent length
3) Accurately measure and lumen size to maximize stent dimensions
4) Determine when debulking should be considered

**Post-intervention**
1) Maximize stent CSA relative to reference
2) Ensure full lesion coverage
3) Recognize, diagnosis and treat complications
Although the definitive randomized trial has not be done, IVUS may improve the EVT outcome for long SFA CTOs.
Thank you for your attention

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