Severe calcified chronic total occlusion recanalization with CROSSER or Rotablator: A case series

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Disclosure

Speaker name: Mashiko Fujihara

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
• In heavily calcified lesions, the EVT approach is difficult and challenging.
• Most of endovascular devices unable to cope with vessel calcified lesions
• Optimal dilatation is the most important to keep patency
Background

• However, no ideal solutions were made for the treatment of calcified lesions.
• Especially in hemodialysis patients, most of the lesion are densely calcified.
• Further analysis will be needed to quantify calcified lesions for best treatment.
• I will report four cases of endovascular treatment for severe vessel calcified lesions on hemodialysis.
EVT for heavy calcified SFA CTO lesion

1. **CTO wire crossing** (Central Lumen Crossing Catheter)
   - Crosser (Bird)
   - Wildcat (Avinger)
   - Ocelot (Avinger)
   - True Path (Boston Scientific)
   - Viance (Covidien)

2. **Vessel dilatation**
   (Directional Rotational Atherectomy Catheter)
   - Rotablator (Boston Scientific)
   - JETstreme (Boston Scientific)
64 years, Male, R-3 claudication, Regular dialysis

Chronic total occlusion, Zone C, lesion length 82mm TASC(II)B

Pre Procedure

CROSSER

Post CROSSER Stent implantation
80 years, Female, R-3 claudication, Regular dialysis

Chronic total occlusion, Zone A-C, lesion length 212mm TASC(II) D

Pre Procedure

CROSSER(Pro-mid portion) CROSSER(distal) Final Angiography
63 years, Male, R-5 unhealed ulcer, Regular dialysis

Chronic total occlusion, Popliteal 3, lesion length 102mm TASC(II) C

Pre Procedure | Wire Passage | Balloon Angioplasty | Rotablator 1.75mm | Final Angiography
78 years, Female, R-5 unhealed ulcer, Regular dialysis

Chronic total occlusion, distal to the anastomosis of the patent F-P graft lesion length 38mm
## Central Lumen Crossing Catheter

<table>
<thead>
<tr>
<th>Device</th>
<th>Study</th>
<th>Crossing Success Rate (%)</th>
<th>Major Adverse Event Rate (%)</th>
<th>Sheath (Fr)</th>
<th>Guidewire Compatibility (Inch)</th>
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</thead>
<tbody>
<tr>
<td>Crosser (Bird)</td>
<td>PATRIOT</td>
<td>84</td>
<td>6</td>
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<td>0.014</td>
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<td>J.Lierd (J Inv Card 2014)</td>
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<td>Wildcat (Avinger)</td>
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<td>Viance (Covidien)</td>
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# Atherectomy Devices to treat calcified lesions

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<th>Device Success Rate (%)</th>
<th>Major Adverse Event Rate (%)</th>
<th>TLR</th>
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<td>Rotablator (Boston)</td>
<td>Uwe Schwarzwälder, (Tech Vas and Interv Radio, 2010)</td>
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<tr>
<td>JETstreme (Boston)</td>
<td>PATHWAY PVD</td>
<td>99</td>
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<td>T Zeller(J Endovasc Ther 2009)</td>
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<td>Silverhawk (Covidien)</td>
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<td>Diamondback (OAS)</td>
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<td>Shammas NW(J Endovasc Ther. 2012)</td>
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In Summary

- Wiring CTOs for heavy calcified lesions takes a high skill level, and success rates can vary among operators.
- Crossing devices can potentially improve procedural outcomes but also come with difficulties. (cost, equipment, complications etc)
- The earlier studies of EVT for calcified lesions were conducted with different debulking devices.
- The treating interventionist needs to become comfortable with at least one of these devices and use it frequently.
- Further analysis will be needed to quantify calcified lesion for best treatment.