Limb Salvage at All Costs: How do you leverage all of the tools in your toolbox?

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Disclosure

Speaker name: Giuseppe Papia

I have the following potential conflicts of interest to report:

☒ Consulting: Medtronic, Cook, Gore
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
Project Saving Legs™
@savinglegs

giuseppe.papia@sunnybrook.ca
Schulich Heart Centre
Critical Care Medicine
Conclusions: Limb Saving

- It’s Not a Procedure, It’s a Project!
Toolbox A: OPEN
Toolbox B: ENDO

- **Wires**
  - 0.035”
    - stiff and floppy Terumo glide wire
    - Amplatz
    - Rosen
  - 0.18” wires
    - V-18
  - 0.14” wires
    - PT2, miracle bros 3 and 6, confianza
    - grandslam, ironman
- **5-9F Sheaths**
  - Short and Long
  - Cook Raabe and Check Flow
- **60cm and 100cm catheters**
  - Omniflush, VCF
  - Angled Glide Catheter, Kumpe, Vertebral
  - MPA -125cm
- **QuickCross Catheters**
  - 0.14, 0.18, 0.35”; 90cm, 135, 150cm
- **PTA balloons**
  - 0.35” otpa pro/ admiral/ agiltrac
  - 0.18” sterling/ savvy
  - 0.14” ampherion deep/maverick/ sleek
- **Stents**
  - Nitinol 2-15cm, 3-10mm
- **Stent Grafts**
  - Viabahn
  - Icast
- **Retry Devices**
  - Pioneer/Outback
- **IVUS**
  - Volcano/Galaxy
- **Guides**
  - 6-8F MPA, MPB, straight
- **Aspiration Devices**
  - Export / Diver / Pronto Catheter
  - Angiojet
  - Rinsoperator
Toolbox Today

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  - Rinsperator
“Drop the gloves”
“Drop the gloves”
Case: Mr. Black Toes

66 yo male

- PMHx: AML, DM, CRF (Cr 220’s)

- HxPI: necrotic first and second toes, third lateral toe, and heel
Case: Mr. Black Toes

- Duplex:
  - Biphasic femoral and popliteal
  - CNO, monophasic tibials
  - TcPO2 = 14
Case: Mr. Black Toes

• Duplex:
  • Biphasic femorals and popliteal
  • CNO, monophasic tibials
  • TcPO2 = 26
  • Ongoing rest pain
  • Increase in necrosis
6 weeks
3 months
Left:

Abnormal biphasic spectral waveforms suggest a stenosing popliteal-posterior tibial bypass graft (Oct. 12/13) confirmed by duplex. Decreased ankle-brachial indices (ABIs) and monophasic spectral waveforms suggest moderate iliac and anterior tibial artery disease post distal superficial femoral and popliteal artery angioplasty (Aug. 15/13). There has been a deterioration in arterial flow compared to the previous study (Nov. 11/13).

Systolic velocities and heterogeneous plaque suggest a 50-99% diameter reduction in the distal superficial femoral and distal popliteal arteries. Systolic velocities >300 cm/s with heterogeneous plaque suggests a >75% stenosis in the proximal anastomosis of the popliteal-posterior tibial bypass graft. There has been a deterioration in arterial flow compared to the previous study (Nov. 11/13). Heterogeneous plaque suggests <50% diameter reduction throughout the lower extremity.

### Pressure (mmHg) ABI Flow

<table>
<thead>
<tr>
<th>153</th>
<th>1.00</th>
<th>Biphasic</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>0.82</td>
<td>Biphasic</td>
</tr>
<tr>
<td>127</td>
<td>0.83</td>
<td>Biphasic</td>
</tr>
<tr>
<td>111</td>
<td>0.73</td>
<td>Monophasic</td>
</tr>
<tr>
<td>81</td>
<td>0.63</td>
<td></td>
</tr>
</tbody>
</table>

### Velocity (cm/s) Flow Stenosis

<table>
<thead>
<tr>
<th>Left Graft</th>
<th>Velocity</th>
<th>Flow</th>
<th>Stenosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pop BK</td>
<td>350</td>
<td></td>
<td>50-99%</td>
</tr>
<tr>
<td>Prox Anast</td>
<td>337</td>
<td></td>
<td>&gt;75%</td>
</tr>
<tr>
<td>Prox Graft</td>
<td>106</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Thigh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid Thigh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dist Thigh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At Knee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below Knee</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dist Graft</td>
<td>72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid Calf</td>
<td>101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dist Calf</td>
<td>68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dist Anast</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Tib</td>
<td>108</td>
<td></td>
<td>&lt;50%</td>
</tr>
</tbody>
</table>
Normal ankle-brachial indices (ABIs) and triphasic to biphasic spectral waveforms suggest a patent popliteal-posterior tibial bypass graft (Oct. 12/13) confirmed by duplex post angioplasty superficial femoral, popliteal, peroneal trunk and proximal bypass graft (Feb. 27/14). There has been an improvement in arterial flow post intervention compared to the previous study (Feb. 4/14).
6 months
<table>
<thead>
<tr>
<th>Location</th>
<th>Velocity (cm/s)</th>
<th>Flow</th>
<th>Stenosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pop BK</td>
<td>74</td>
<td>Biphasic</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Prox Anast</td>
<td>101</td>
<td>Triphasic</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Prox Graft</td>
<td>100</td>
<td>Biphasic</td>
<td></td>
</tr>
<tr>
<td>Upper Thigh</td>
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<tr>
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<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Below Knee</td>
<td>59</td>
<td>Biphasic</td>
<td></td>
</tr>
<tr>
<td>Dist Graft</td>
<td>104</td>
<td>Biphasic</td>
<td></td>
</tr>
<tr>
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<td>104</td>
<td>Biphasic</td>
<td></td>
</tr>
<tr>
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<td>116</td>
<td>Biphasic</td>
<td></td>
</tr>
<tr>
<td>Dist Anast</td>
<td>58</td>
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</tr>
<tr>
<td>Post Tib</td>
<td>112</td>
<td>Biphasic</td>
<td>&lt;50%</td>
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</tbody>
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<table>
<thead>
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<th>Pressure (mmHg)</th>
<th>ABI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brachial</td>
<td>129</td>
</tr>
<tr>
<td>Ant. Tibial</td>
<td>136</td>
</tr>
<tr>
<td>Post Tibial</td>
<td>150</td>
</tr>
</tbody>
</table>
12 months
Conclusions: Limb Saving

It’s Not a Procedure, It’s a Project!
Christopher’s story

Christopher Kent, left, with vascular surgeon Dr. Giuseppe Papia.

When a physician told Christopher Kent “prostheses are actually really good these days,” he was unimpressed.

He didn’t want a prosthetic leg, he wanted to keep his own.
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