OBJECTIVES

- Discuss various clinical presentations of patients with critical limb ischemia (CLI)
- Review principles of wound care and limb salvage
- Illustrate comprehensive management strategies for patients with CLI and tissue loss

PAD Clinical Presentations

- Asymptomatic: 20 – 50%
- Classic Claudication: 10 – 35%
- Atypical Leg Pain: 40 – 50%
- Critical Limb Ischemia (CLI): 1 – 2%

McDermott et al. JAMA 2001;286:1599.

CLI – Clinical Definition

<table>
<thead>
<tr>
<th>Fontaine Classification</th>
<th>Rutherford Classification</th>
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<tbody>
<tr>
<td>Stage I</td>
<td>Stage 0</td>
</tr>
<tr>
<td>Asymptomatic</td>
<td>Asymptomatic</td>
</tr>
<tr>
<td>Stage II</td>
<td>Stages 1, 2, 3</td>
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<tr>
<td>IIa – Claudication &gt; 200m</td>
<td>Mild, moderate, severe claudication</td>
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<tr>
<td>IIb – Claudication &lt; 200m</td>
<td>Rest pain</td>
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<tr>
<td>Stage III</td>
<td>Stage 4</td>
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<tr>
<td>Rest pain</td>
<td></td>
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<tr>
<td>Stage IV</td>
<td>Stage 5</td>
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<tr>
<td>Ischemic ulcers or gangrene</td>
<td>Digital ischemic ulcers</td>
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<td>Stage 6</td>
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<td></td>
<td>Severe ischemic ulcers or gangrene</td>
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</tbody>
</table>


CLI – Hemodynamic Definition

- Ankle pressure < 50 – 70 mmHg
- ABI < 0.4
- Toe pressure < 30 – 50 mmHg
- TcPO2 < 30 – 50 mmHg

Critical Limb Ischemia

Dependent rubor

Tissue loss

Gangrene

What About Timing?

• 63 year diabetic man presents with a painful toe blister

4 weeks later...

• Multiple attempts to recanalize severe infrapopliteal arterial disease
• Ischemic rest pain
• Isolated 4th toe amputation
• Marked decline requiring BKA

• 68 year old man with ischemic cardiomyopathy, CHF, MI, A-fib, CAD s/p CABG x 4, and mitral valve disease
• Severe foot pain attributed to multifactorial leg edema
• 70 year old diabetic man with renal transplant
• Multiple revascularizations
• Ischemic necrosis and amputations of multiple fingers

PAD with critical limb ischemia

• 60 year old diabetic man with ulcerated heel blister
• Remote non-traumatic left BK and right 1st ray amputations
• Remote R popliteal artery thromboendarterectomy
82 year diabetic lady with bilateral midfoot collapse due to Charcot arthropathy and partial 1st ray amputations

Presents with left midfoot ulceration x 1 month
Post-intervention sharp and enzymatic debridement
Non-weight bearing

3 weeks later...

7 Weeks Post-Intervention
12 Weeks Post-Intervention

Angiosome Approach to Perfusion
Infection Control
- Do not leave dressings in place for extended periods
- Adjust dressing change frequency according to volume of drainage

Wound Infection
- Erythema
- Calor
- Tissue edema
- Drainage
- Pain*
- Fluctuance
- Depth
  - Deep vs Superficial cultures
Infection Control

- Utilize imaging (x-ray, MRI, CT scan) to assess extent of tissue involvement

Clinical signs of infection may be muted in diabetic patients

- 62 year old man
- Severe diabetes, HTN, HL, borderline CKD (Cr 1.4)
- Non-traumatic right BKA
- Calcaneal osteomyelitis
- Treated with IV Vanco + Zosyn
- Aggressive wound treatment
  - HBOT
  - Advanced topical therapies
  - Offloading

Clinical Course

3 weeks  7 weeks  10 weeks

Angiogram
2 Weeks Post-intervention
- Sharp debridement
- Initiate enzymatic debridement

6 Weeks Post-intervention

10 Weeks Post-intervention
- Continue enzymatic debridement
- Initiate NPWT

14 Weeks Post-intervention

19 Weeks Post-intervention
- Hold enzymatic debridement
- Initiate sequential acellular tissue grafts

22 Weeks Post-intervention

35 Weeks Post-intervention

Conclusions
- Perform prompt intervention for CLI to optimize healing potential and improve outcomes
- Complete thorough wound assessment to identify and treat infection
- Reserve aggressive debridement and compression therapy until after perfusion is optimized

Thank You