How Should Intermittent Claudication be Treated: A Vascular Surgeons Perspective
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Intermittent Claudication

Intermittent Claudication; Natural history over 5 years:


Intermittent Claudication; Considerations regarding treatment:
Impairs functional ambulation:
Activities of daily living
Ability to work
Lifestyle, recreational activities
Lost productivity, social isolation, worse QoL—depression, anxiety
Evaluate from the patient's perception of their disability
Management of risk factors, conservative therapy
Endovascular therapy
Surgical bypass

Intermittent Claudication; Impact on general and disease-specific quality of life measures:

Spronk S et al. Semin Vasc Surg 2007;20:3-9

Intermittent Claudication; Management of risk factors, conservative therapy

Endovascular therapy
Surgical bypass
Intermittent Claudication

Results of treatment, 1000 consecutive limbs in 564 patients:

<table>
<thead>
<tr>
<th>Variable</th>
<th>With symptom resolution (n = 1,000)</th>
<th>p Value</th>
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</thead>
<tbody>
<tr>
<td>Type</td>
<td>Open 268 (75.1)  Endo 520 (80.9)</td>
<td></td>
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<tr>
<td>Level</td>
<td>AIOD 554 (79.0)  Infra inguinal 234 (78.3)</td>
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<tr>
<td>Type × Level</td>
<td>Endo AIOD 368 (81.8)  Endo infra inguinal 152 (78.8)</td>
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<tr>
<td></td>
<td>Open AIOD 186 (74.1)  Open infra inguinal 82 (77.4)</td>
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Functional results nearly equivalent for open and endo both above and below the inguinal ligament!

Intermittent Claudication

Secondary patency

National Trends in Lower Extremity Interventions; Medicare Beneficiaries 1996-2006:
Bypass decreased by 42%, endovascular interventions increased 300%


Intermittent Claudication

Who should be managed conservatively?

- Presenting with mild or moderate symptoms, limited disability
- Any degree of severity not impairing the patient
- When the patient's only concern is fear of amputation
- Risks of invasive therapy outweigh benefits
- Where the impact of IC on ambulation is difficult to determine
  - Degenerative arthritis of weight bearing joints
  - Spinal stenosis
  - COPD, CHF, stroke, morbid obesity

Intermittent Claudication

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Intermittent Claudication; Conservative management:

Exercise training:
- patient directed not as effective as supervised programs
- supervised training highly effective but patient and systemic barriers
  compliance in the long term poor
  efficacy overall – 30%

Smoking cessation:
- Does not improve symptoms of IC
- Does decrease the likelihood of progression to critical ischemia
  Critical to overall cardiovascular health

Pharmacological:
- Pentoxifylline – minimal efficacy, generally well tolerated
- Cilostazol – walking distance increased 50% modest response for many patients
  not tolerated in 15%, no response in 15%
  contraindicated with CHF

Bypass vs. Endovascular Intervention for IC; Goal-durable benefit at low risk:
- Driven by two principle factors:

Outcome of Bypass After Failed Prior Intervention;
VSGNE N=663 bypasses, 44% for limb threat:
MALE: amputation, graft occlusion, reintervention

Outcomes Following Endovascular Intervention;
N=251 limbs, 246 patients, 56% for limb threat:
11% failed
Mean time to failure 8.7 months
11% required bypass for salvage
Endo did not effect bypass opportunity

Outcomes Following Endovascular Intervention of the SFA;
N=276 patients, 44% for limb threat:
8.3% (21) early failure
60% with CLI
33% required bypass for salvage
Outflow target changed 29%
50% lost a runoff vessel
Intermittent Claudication

Bypass vs. Endovascular Intervention for IC;
**Goal-durable benefit at low risk:**
Driven by two principle factors:
- Anatomy
- Durability

Minimum standard: > 50% likelihood of sustained patency at two years
Need for re-intervention < 3 in 12 months

Optimal Approach to Intermittent Claudication;
**My opinion:**
- Should be tempered by the relatively benign natural history
- Trial of conservative therapy in many (most) patients
- Reassurance and advice alone suffices in some patients
- Treatment not indicated in patients immobile from other causes
- Decision must be individualized-risk vs. benefit
- Decision to intervene independent of anatomic, technical considerations
- Choice of intervention driven by anatomy, durability
Bypass vs. Endovascular Intervention for IC;
Defining the minimally important clinical difference (MCID*):

**Definition:** a statistical model which tries to define the smallest change in a treatment outcome that a patient would identify as important.

Patient centered capturing the magnitude and the value of the change
MCID useful in measuring relief of pain and improvement in function
Fundamental aspect of a well performed MCID analysis also considers potential improvements from an intervention in relation to its costs and complications.