Open Surgery is often needed to treat Acute Limb Ischemia: which ALI patients are they?

- III: irreversible: expectant/amputation
- IIb: open, often need fasciotomy

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ALI is a clinical spectrum: the patient and the limb should be the focus of therapy, not just the arterial lesion.

What is the etiology?

- Embolic (embolos – Gr. “plug”)
  - Cardiogenic: decreasing in frequency but not gone
  - Myxoma
  - “Saddle embolus” – easily treated with femoral cutdowns: quick, minimal risk of distal embolization
- Thrombotic
  - Native artery with pre-existing stenosis
  - Bypass graft: prosthetic versus autogenous
- Mixed (thrombo-embolic) or Uncertain

One could empty a full bathtub with a pipette (endo-allogist) but wouldn’t it be far simpler and more effective to just pull the “plug” (vascular surgeon)? In accessible artery, often simpler to surgically pull the “plug” and extract thrombus.

Comprehensive Vascular and Endovascular Surgery
Hallett, Mills, Earnshaw, Reekers, Rooke
A contemporary study based on the U.S. National Inpatient Sample reported that (1) embolectomy was associated with decreased mortality and amputation risk and that (2) fasciotomy was done in 4.3% of limbs coded for acute embolism and thrombosis of the lower extremities. Fasciotomy was more common (25%) in a concomitant, retrospective experience at an academic institution. Those requiring fasciotomy were also at greater risk of amputation and death, presumably reflecting more advanced ischemia.

Clinical outcomes and cost-effectiveness of initial treatment strategies for nonemolic acute limb ischemia in real-life clinical settings

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Objective: The optimal initial treatment for patients with nonemolic limb ischemia (NLI) remains undefined. Although clinical outcome data are nonexistent, catheter-directed thrombolysis (CDT) with local phospholysis appears to be increasingly used. Post-hoc analysis combining clinical and economic data in a real-life setting is helding. This study compared clinical outcomes and cost-effectiveness of initial treatment strategies for nonemolic NLI using real-life patient-level data.

Methods: Medical records and data for hospital costs were analyzed for nonemolic ABI< or = 0.8 patients treated in four hospitals over 3 years. A cost-effectiveness analysis was performed using a decision tree analysis model. All costs were valued based on cost-to-charge ratios.

Results: In 200 patients, initial treatments were CDT alone in 46 or with angioplasty in 16, open-surgery in 48, under angioplasty in 48, and with stent in 20. Although clinical outcomes did not differ significantly among the groups, reintervention rates during hospital stay, readmissions, and costs were highest in the CDT group. Reintervention was required in 42% of patients after CDT compared with 7% after open surgery, and 16% of the CDT patients needed more than one reintervention. The mean total hospital cost was $34,800 per patient in CDT group compared with $14,772 in open surgery group.

Conclusion: In this real-life study, initial treatment of nonemolic ABI< or = 0.8 patients currently available (CDT option was not associated with poorer health care resource consumption and cost compared with other initial treatment options. (J Vasc Surg 2015;61:69.)

SUMMARY:
Flexible Approach to ALI is the Key

- ALI management depends on underlying cause, location, accessibility and details of presentation
- Class IIa patients (marginally threatened) often do best with heparin and lysis to uncover and treat culprit lesion
- Most Class IIb patients, especially late presentation with advanced ischemia are best managed surgically/hybrid
- Embolic occlusions generally do best with open surgical or hybrid approach
  - Aortic saddle, CFA and brachial emboli often best managed surgically
- Device-related ALI (Impella, IABP, ECMO) usually best managed open/hybrid (complex, severe, delayed)
- You can’t perform a fasciotomy without surgery: 5-25% of ALI patients require such, esp. in tertiary care centers