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TITLE: CONCOMITANT LONG BONE AND VASCULAR INJURY NEEDING  
REPAIR: SEQUENCE OF CARE AND OUTCOMES.

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ABSTRACT

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SEQUENCE OF CARE AND OUTCOMES.  
ABSTRACT

Concomitant vascular and orthopaedic extremity injuries have stimulated debate within the surgical trauma community for a number of years. Such injuries are associated with a high rate of limb loss. Ischemia time has been at the crux of the debate, and has been found to be linked to limb viability and outcome. The relevant literature still poses a debate over the sequence of surgical intervention as it relates to temporizing vascular repair, definitive vascular repair and orthopaedic fixation. The purpose of the study is to contribute to existing literature about the optimal sequence of repair that results in the best patient outcomes.

Study design was a retrospective chart review. The Trauma registry at our institution was asked to identify all patients with traumatic lower extremity long bone injuries, as well as all lower extremity traumatic vascular injuries from January 1996 to June 2005. These two lists were cross-referenced, relevant chart reviews conducted and patients with concomitant orthopaedic long bone fractures and vascular injuries needing repair were identified. Age, ISS scores, mechanism, ischemia time, vessel injured, amputation rates, reoperation rates and complications were recorded. Nonoperative orthopaedic or vascular injured patients were omitted. Results are reported.

Between January 1996 and June 2005, over 36,000 patients were seen at a Level 1 trauma center, and 31 sustained combined lower extremity long bone fractures and a vascular injury. Three patients died within 24 hours, and 3 underwent primary amputations while 26 required orthopaedic and vascular surgical repair. 17 of 26 patients underwent definitive vascular repair first; 5 underwent orthopaedic stabilization first; 3 received a temporary shunt first. A vascular reoperation was required in 8 patients, all in whom definitive vascular repair was the initial procedure.

47% of patients treated with definitive vascular repair first required additional vascular procedures versus 0% in those who underwent orthopaedic stabilization or temporizing shunting as their initial procedure. Moreover, 86% of all amputations were in patients with definitive vascular repair first, compared with 14% in the orthopaedic stabilization group and zero in the shunt group. In our retrospective analysis, temporizing vascular shunting or orthopaedic stabilization obviated fewer reoperations with decreased amputation rates compared to initial definitive vascular repair.

Abstract Classification

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