

UAMS MEDICAL CENTER
ACS SERVICES MANUAL

SUBJECT: Combined Orthopedic and Vascular Extremity Trauma

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UPDATED: New

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RECOMMENDATION(S): K. Kalkwarf, MD

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CONCURRENCE(S): S. Cherney, MD; M. Moursi, MD; L. Story, MD

PURPOSE:

Guidelines for determining the precedence of emergency surgery for ischemic extremities requiring vascular and orthopedic surgery.

DEFINITIONS:

Ischemic extremity: critically low flow to the distal extremity. This dramatically increases the risk for tissue loss and reperfusion injury.

PROTOCOL:

Vascular surgery team will go first:

- 1) When an external fixation (ex-fix) device is required to span the knee to stabilize a fracture OR joint dislocation AND a vascular bypass procedure is required across the same joint. This is because performing the vascular bypass is not possible with an ex-fix in place.
- 2) When the distal extremity has been ischemic for more than 3 hours, because of the increased risk for tissue and extremity loss beyond 4-6 hours of ischemic time.

Orthopedic surgery team may go first:

- 1) When the distal extremity has been ischemic for less than 3 hours AND if the orthopedic surgery will take less than 1 hour.
- 2) When there is adequate perfusion of the distal extremity because of a non-occlusive vascular injury.

Fasciotomies:

- Fasciotomies should be discussed by the orthopedic and vascular teams if there is a concern for potential compartment syndrome by either team. Typically, the last team operating will perform the fasciotomies and manage them.

Potential issues:

- If the vascular team goes first and the vascular anastomosis is injured or disrupted during the orthopedic repair, the vascular team will address and treat those issues because it is a potential risk of the vascular surgery going first.
- If there are disagreements, concerns, or issues that arise, the vascular and orthopedic attendings will talk to promptly resolve these situations.

REFERENCES:

1. Lewis Jr RH, Perkins M, Fischer PE, Beebe MJ, Magnotti LJ. Timing is everything: Impact of combined long bone fracture and major arterial injury on outcomes. *Journal of Trauma and Acute Care Surgery*. 2022 Jan 1;92(1):21-7.

These guidelines were prepared by the UAMS ACS Service. They are intended to serve only as a guideline based on current review of the medical literature and practice. They are neither policies nor protocols. Their use is at the discretion of the managing physician.