The University of Arkansas for Medical Sciences
Trauma Clinical Practice Management Guideline

SUBJECT: Combined Orthopedic and Vascular Extremity Trauma

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

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

PROTOCOL:

The 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, there is an increased risk for tissue and extremity loss after 4-6 hours of ischemic time.

The 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 either team has a concern about potential compartment syndrome. 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, as this is a potential risk associated with performing vascular surgery first.
- If disagreements, concerns, or issues arise, the vascular and orthopedic attendings will discuss them to resolve these situations promptly.

REFERENCE:

1. Lewis Jr RH, Perkins M, Fischer PE, et al. Timing is everything: Impact of combined long bone fracture and major arterial injury on outcomes. J Trauma Acute Care Surg. 2022 Jan 1;92(1):21-7.