



Emergency Medicine  
FOUNDATIONS

# Management of Vascular Extremity Trauma

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## Hard Vascular Signs\*



Operating  
Room

- Absent pulse
- Pulsatile hemorrhage/hematoma
- Limb Ischemia (5P's)
- Expanding hematoma
- Bruit/thrill
- Hypotension

### Control hemorrhage with:

- Direct or proximal pressure
- Careful packing
- Tourniquets
- Pressure dressings
- Hemostatic dressings

**BLIND CLAMPING = NERVE INJURY**

*\*Hard signs reflect high probability of vascular injury requiring surgical repair! These are time sensitive. On table OR angiography can be performed and saves time. Most surgical injuries manifest  $\geq 1$  hard sign.*

CTA may be useful for operative planning in multiple penetrating injuries, shot gun blasts, junctional extremity trauma, can be done in OR for patients with hard signs

## Soft Vascular Signs\*



CTA or  
observation with  
serial APIs

- Unequal/diminished pulse
- Small nonexpanding hematoma
- History of large blood loss at scene
- Isolated nerve injury
- Proximity to major vessel
- Diminished capillary refill

Arterial Pressure Indices (APIs) are complementary to physical exam and must be checked. API < 0.9 indicates vascular injury

*\*Soft signs are equivocal findings that used to be considered significant but have been demonstrated to be less specific for vascular injury and are more likely due to injury of adjacent muscle, bone, nerve, soft tissue.*