



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. Angiography in the OR can be performed and saves time. Most surgical injuries manifest ≥ 1 hard sign.*

CTA may be useful for operative planning in multiple penetrating injuries, shot gun blasts, junctional extremity trauma- angiography 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 have been demonstrated to be less specific for vascular injury and are more likely due to injury of adjacent muscle, bone, nerve, soft tissue.*