

# Blunt Cerebrovascular Injury

**Major Mechanism**  
Blunt force trauma

**Screen for:**

- Cervical hyperflexion, hyperextension or rotation
- Closed head injury (CHI) and/or diffuse axonal injury (DAI)
- Mandibular fracture
- Near hanging
- Neck – seat belt abrasion

Yes

No

**OBSERVE**  
Consider CT Angio if suspicion of blunt cerebrovascular injury remains

**Risk Factors:**

- Lefort 2 or 3 fracture
- C-spine fracture patterns (Subluxation, Transverse foramen, C1-3 fractures)
- DAI with GCS  $\leq$  6
- Near hanging with anoxic brain injury

Risk factors present

CT Angio neck  
Multidetector ( $\geq$ 16 slice)

Normal

Observe

Abnormal

**Consult:**  
Neurosurgery for Intracranial Injuries  
Vascular surgery for extracranial injuries

**Treatment:**  
Grade I-II injuries  
• If no contraindications, consider ASA or heparin (no bolus)  
Grade III-V injuries  
• Consider interventional radiology or surgical intervention  
Consider follow-up CT Angio in 7 days

Bub LD et al. Screening for blunt cerebrovascular injury: evaluating the accuracy of multidetector computed tomographic angiography. J Trauma. 2005; 59:691-697.

Bromberg WJ, Collier BC, Diebel LN, Dwyer KM, Holevar MR, Jacobs DG, et al. Blunt cerebrovascular injury practice management guidelines: the Eastern Association for the Surgery of Trauma. J Trauma. 2010 Feb; 68(2):471-7.

