

DIVISION OF TRAUMA AND SURGICAL CRITICAL CARE

Blunt Cerebrovascular Injury (BCVI) Screening Protocol

All patients presenting with signs / symptoms of BCVI should be evaluated with CTA. ¹

Signs / symptoms of BCVI:

- Arterial hemorrhage between thoracic inlet and angle of the mandible
- Expanding cervical hematoma
- Focal neurologic deficit
- Neurologic examination incongruous with head CT findings
- Stroke on secondary CT scan

Screening for BCVI should be considered in asymptomatic patients with high-energy mechanisms and the following high-risk features. ¹⁻³

Risk Factors for BCVI: (High energy transfer mechanism with)

- GCS \leq 8
- LeFort fracture types II or III
- Mandible fractures
- Basilar skull or occipital condyle fractures
- Cervical spine fracture, subluxation or ligamentous injury at any level
- Diffuse axonal injury
- Near hanging with concern for hypoxic-ischemic brain injury
- Neck soft tissue injury (seatbelt sign, hanging, or hematoma)

References:

1. Burlew CC, Biffi WL, Moore EE, et al. Blunt cerebrovascular injuries: Redefining screening criteria in the era of non-invasive diagnosis. *J Trauma Acute Care Surg.* 2012 Feb; 72(2):330-5.
2. Ciapetti M, Circelli A, Zagli G, et al. Diagnosis of carotid arterial injury in major trauma using a modification of Memphis criteria. *Scand J Trauma Resusc Emerg Med.* 2010; 18 (1): 61.
3. Bromberg WJ, Collier BC, Diebel LN, et al. Blunt cerebrovascular injury practice management guidelines: The eastern association for the surgery of Trauma. *J Trauma.* 2010 Feb;68(2):471-7