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Blunt Cerebrovascular Injury (BCVI)

Purpose: To define and treat blunt cerebrovascular injury (BCVI)

Goals: To reduce the risk for stroke and mortality by early recognition and management of extracranial blunt carotid injury, extracranial blunt vertebral artery injury, and intracranial vascular injury

Guidelines:

- A. Clinical signs of blunt cerebrovascular injury that should prompt emergent evaluation and interventions
 - a. Potential arterial hemorrhage from the neck, mouth, or ear
 - b. Expanding cervical hematoma
 - c. Cervical bruit in a patient younger than 50 years of age
 - d. Focal or lateralizing neurologic deficit
 - e. Neurologic deficit inconsistent with head CT
 - f. Stroke on CT or MRI

- B. Screen asymptomatic patients with the following risk factors
 - a. Injury mechanism compatible with cervical hyperextension/rotation/hyperflexion
 - b. Severe facial trauma
 - c. Basilar skull fracture involving carotid canal
 - d. Closed head injury consistent with diffuse axonal injury with GCS < 6
 - e. Cervical transverse foramen fracture, subluxation, or ligamentous injury at any level
 - f. Any cervical fracture at the level of C1 to C3
 - g. Clothes-line type of injury or seat belt abrasion associated with significant cervical pain, swelling, or altered mental status
 - h. Upper rib fractures 1 and/or 2
 - i. Near-hanging with anoxic brain injury

- C. Screening and diagnostic procedures for BCVI are
 - a. Diagnostic four vessel cerebral angiography (DFVCA) remains the gold standard
 - b. CT angiography (multi-slice multi-detector) has adequate sensitivity and specificity for diagnostic screening for BCVI
 - i. Has become the accepted procedure

- D. Cervical CTA should be performed on all patients that meet the risks and signs listed in A and B above
- E. All Cat I trauma patients who receive CT examinations with contrast and a cervical CT automatically receive CTA neck
- F. All Cat II trauma patients who are activated before going to CT and have orders for contrast CT examinations should receive a CTA neck
- G. Treatment for BCVI seen on screening
 - a. Consult Vascular Surgery
 - b. In adult patients with BCVI, recommend the use of anti-thrombotics to prevent stroke and mortality

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