Blunt Cerebrovascular Injury Evaluation and Management

CT Angiogram Neck if:

- Neurologic abnormality unexplained by CT Head findings
- Epistaxis from a suspected arterial source
- GCS ≤ 8
- Petrous temporal bone fracture
- DAI
- C-spine fracture
- Le Forte II or III facial fractures
- Basilar skull fracture involving the carotid canal
- Seatbelt abrasion of anterior neck causing swelling or AMS
- Focal neurologic deficit
- Ischemic CVA on secondary CT Head for trauma
- Near hanging

Grading Blunt Cerebrovascular Injuries:

Grade I: Intimal irregularity with < 25% narrowing
Grade II: Dissection or intramural hematoma with > 25% narrowing
Grade III: Pseudoaneurysm
Grade IV: Occlusion
Grade V: Transection with extravasation

(+) BCVI

Grade I or II

*Start ASA 81 mg daily or Heparin WITHOUT BOLUS (PTT Goal 40-50) unless contraindicated

Continue antiplatelet regimen upon discharge x 3 months
AND
Order CT Angiogram of Neck outpatient, to be completed prior to 3 mo appt with Vascular Surgery

Grade III, IV, V

Urgent Vascular Surgery consultation for possible open, endovascular, or catheter based intervention. Discuss need for and duration of antiplatelet/anticoagulant therapy

*When deciding ASA and Heparin, consider, presence of TBI, need for future surgery, administration route

**For Grades 1-3 consider repeat CT Angio Neck at 7 days to evaluate worsening/improvement of injury

Bromberg et al. J Trauma 2010
McNutt et al. Injury 2018