SUBJECT: Blunt Cerebrovascular Injury Screening and Treatment

REVIEWED: 12/5/2020

RECOMMENDATION(S): Dr. JR Taylor, Dr. J Margolick **APPROVAL:** 12/5/2020

CONCURRENCE(S): Trauma Faculty, Neuro IR Faculty **EFFECTIVE:** 12/5/2020

PURPOSE:
To provide guidelines on the management and treatment of blunt cerebrovascular injury.

GUIDELINE:
Diagnosing a blunt cerebrovascular injury (BCVI) requires a high index of suspicion. The objective is to identify trauma patients who are at risk for BCVI and make the diagnosis early. Screening high risk patients allows providers to treat these injuries accordingly when found and begin stroke prevention therapy before onset of potentially devastating cerebrovascular events.

The following patients should be screened with a CTA of Head and NECK for BCVI

- Unexplained neurologic abnormality
- Epistaxis from a suspected arterial source
- Cervical spine fracture of the body or lamina
- Basilar skull fractures
- Cervical bruit
- Diffuse Axonal Injury
- Ischemic stroke/infarct on CT Head
- Severe TBI (GCS < 8)
- Blunt force to the neck
- LeFort II or III facial fractures
- Fracture thorugh the foramen transversarium
- Seatbelt sign of the neck
- Attending trauma surgeon discretion

GRADING SCALE:

Grade I – Intimal irregularity < 25% narrowing
Grade II - Intimal irregularity, intramural hematoma or dissection with > 25% narrowing
Grade III – Pseudoaneurysm
Grade IV – Occlusion
Grade V – Transection

These guidelines were prepared by the UAMS Trauma Service. They are intended to serve only as a guideline based on current review of the medical literature and practice. They are neither policies nor protocols. Their use is at the discretion of the managing physician

TREATMENT:

Grade I – ASA 81 mg as soon as clinically possible. Repeat CTA Head and Neck in 1 week to evaluate for resolution or propagation

Grade II – ASA 81 mg as soon as clinically possible. Repeat CTA Head and Neck in 1 week to evaluate for resolution or propagation

Grade III to V – Emergent Neuro IR (NIR) consult

- Treatment will be a discussion between trauma team and NIR attending which may include:
    - 4 Vessel angiography
    - Heparin infusion to maintain PTT 40 - 60
    - Embolization
    - Stenting
    - Open surgical repair

FOLLOWUP:

Patients who have not undergone NIR intervention will follow up with trauma group

- The best evidence at this point suggests indefinite treatment with ASA is warranted
- No surveillance imaging required

Patients who have undergone a NIR intervention will follow up with NIR group.

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