INTERVENTIONAL RADIOLOGY CONSULTATION AND MANAGEMENT OF AORTIC INJURIES GUIDELINE

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PURPOSE: The Trauma Team will initially evaluate all trauma patients. When there are injuries that require complex imaging or interventional evaluation and management, the Trauma Attending will activate the Interventional Radiology (IR) team. The Interventional Radiology team is critical in the management of severely injured patients. Notification of the IR team will ensure that members have time to reach the IR suite with adequate time to prepare for patient arrival. These processes will be reviewed, monitored, and tracked through the Trauma Quality Patient Improvement and Patient Safety Processes (PIPS). Examples of need for this activation would include hepatic/splenic injuries, pelvic bleeding, and other cases where catheter-directed embolization may be required. This document does not apply to patients with major arterial vascular injuries requiring open or endovascular reconstruction.

DEFINITION:

A. **Interventional Radiology Activation Time:** the time that the Trauma Attending requests the Interventional Radiologist to evaluate the patient.

B. **Interventional Radiology Activation Response Time:** the time the Attending Interventional Radiologist or Fellow arrives to evaluates the patient.

C. **Emergent Response:** the patient condition requires emergent need for IR support for hemorrhage control. Emergent need is defined as a blood transfusion has been initiated and there is a confirmed blood pressure less than 90 mmHg at any time. Once decision for emergent intervention is required, the procedure will begin within 60 minutes. Emergent response will be for those situations when the patient has life threatening hemorrhage associated with a vascular injury not amendable to a surgical approach.

D. **Non-emergent Response:** the patient condition does not require an emergent response. The IR Attending or Fellow and team can respond as determined by the Trauma and IR Attending, taking into account multiple factors.

Process for the activation of Interventional Radiology for acute hemorrhage control

When there is an interventional radiology need, The Trauma Attending will contact the Interventional Radiology Attending or Fellow/resident.

The Trauma Attending will discuss the current case with the IR Attending or Fellow. They will work together to determine the care and needs of the patient.

For emergent patient needs, where acute hemorrhage control is required, the IR Attending will activate the IR team: IR Nurse, tech and other staff as needed.

- The timing of the decision for emergent intervention will be recorded in the patient chart.
- The IR team will respond and the procedure will be able to be started within 60 minutes.

For Non-emergent cases, the current process can be utilized but the time frame for intervention will be determined based on patient need.

The patient will be transported to the IR suite as mutually agreed upon by the Trauma and IR Attending or Fellow.

When the procedure is completed, IR will document in their procedure note, the consult time and the arrival time.

IR cases will be reviewed in the PIPS process for documentation and timing/delays. The timing of IR request to Arterial Puncture will be recorded and should be less than 60 minutes.

Process for the management of aortic injuries

- Page the Vascular Surgery Team to determine need for operative/endovascular intervention.
    - Aortic injuries not requiring operative/endovascular intervention, i.e. SVS/STS grade I-III injuries, see picture below)
        - Typically require admission to the ICU for advanced hemodynamic monitoring and impulse control (tight HR and SBP control).
        - Trauma and Vascular Surgery teams will collaborate on issues such as safety for other operative interventions, need for anticoagulation, and timing of repeat imaging.
    - Injuries require immediate operative/endovascular intervention (STS/SVS grade IV injuries) Vascular Attending will determine if IR Attending and the IR call team need to be notified.
        - In the setting of polytrauma, Trauma and Vascular Teams (along with other relevant consultants – Orthopedics, Neurosurgery etc…) will discuss issues such as timing of repair, safety of anticoagulation etc…
        - Patients with prehospital imaging (ie transfer from another institution) should prompt a page to vascular surgery prior to arrival to ensure the resources are in place for urgent repair.
    - Injuries requiring delayed intervention
        - The current process can be utilized but the time frame for intervention will be determined based on patient need.

The patient will be transported to the hybrid suite as mutually agreed upon by the Trauma and IR Attending or Fellow.

Measures of Compliance

Report of time interval between request and arterial puncture for patients undergoing interventions for hemorrhage control

Call schedules (IR and Vascular Surgery)

ASSOCIATED GUIDELINE: Extremity Vascular Injuries – Evaluation and Management

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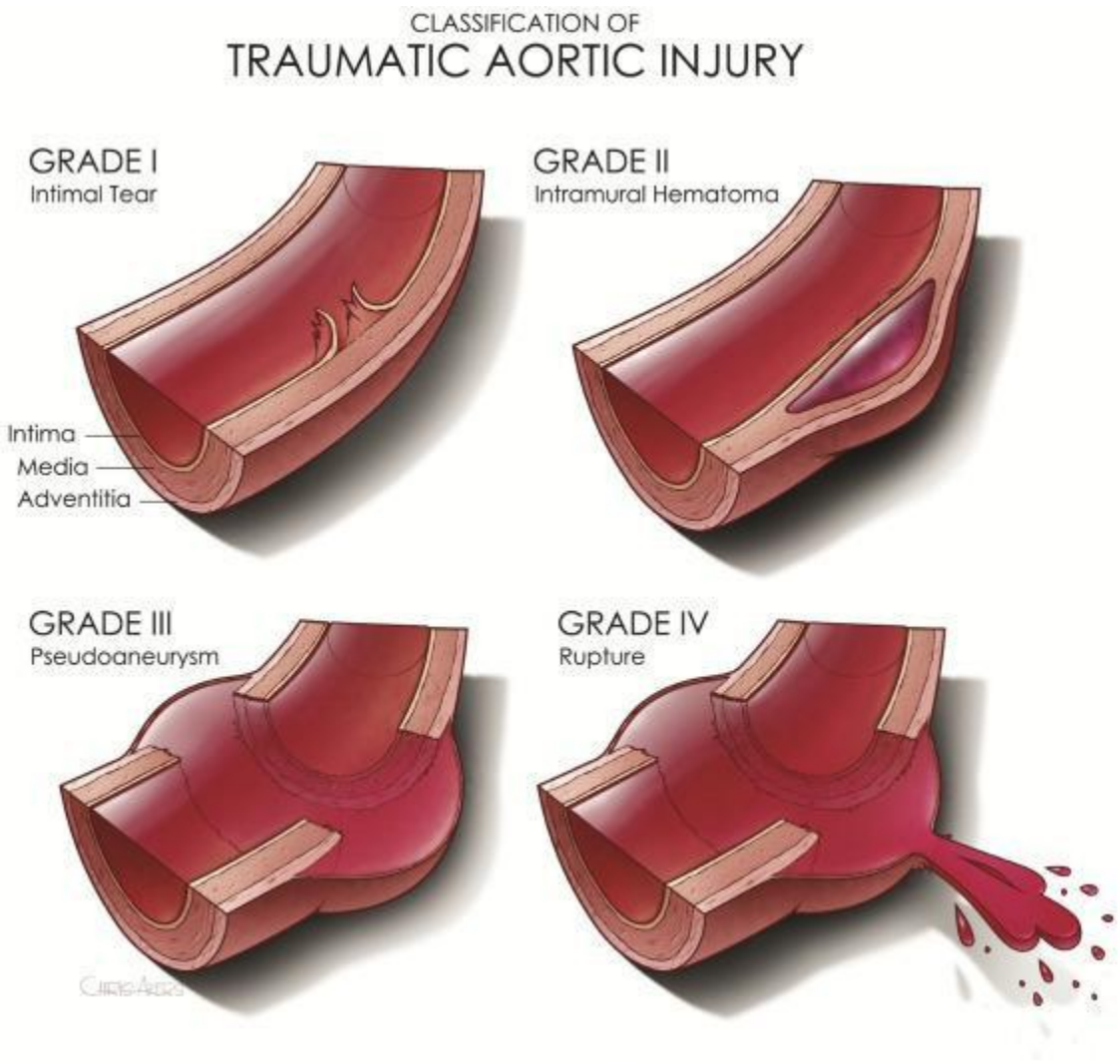

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