Important Note
The intent of the Albany Medical Center Best Practices Guidelines is to provide health care professionals with evidence-based recommendations regarding care of the trauma patient. The Best Practices Guidelines do not include all potential options for prevention, diagnosis, and treatment and are not intended as a substitute for the provider’s clinical judgment and experience. The responsible provider must make all treatment decisions based upon his or her independent judgment and the patient’s individual clinical presentation. Albany Medical Center and any entities endorsing the Guidelines shall not be liable for any damages, including without limitation any direct, indirect, special, incidental, consequential or punitive damages, related to any use of the information contained herein. Albany Medical Center may modify the Best Practices Guidelines at any time without notice.
AMC: Trauma Practice Management Guideline: Penetrating Zone II Neck Injuries

**Purpose:** Outline an evidence based, protocoted approach to treatment of zone 2 penetrating injury

**Definition:**
Zones of the neck:
- Zone 1: level of the thoracic inlet to the cricothyroid membrane
- Zone 2: from cricothyroid membrane to angle of mandible
- Zone 3: angle of mandible and above

**Policy Statements:**
1. Operative intervention is indicated in patients with hard signs of significant injury
   - active hemorrhage
   - expanding hematoma
   - bruit
   - pulse deficit
   - subcutaneous emphysema,
   - hoarseness,
   - stridor
   - respiratory distress
   - hemiparesis/neurologic deficit
2. Selective operative management with patient without hard signs is recommended in a patient with appropriate imaging studies completed

**Background:**
Penetrating wound of the neck are common in urban trauma. Significant injury can happen depending on the mechanism of injury. High velocity wounds have significantly higher rate of injury to the vascular and aerodigestive tracts than low velocity wounds. Mortality rates depend on the degree of injury to the structures in the neck. Due to the severe sequelae of missed injuries, high index of suspicion as well as thorough diagnostic examinations if not operative interventions are necessary.

Historically, all zone 2 injuries have undergone operative intervention, which resulted in many negative explorations. With the advances in technology (high resolution CT) has shifted the management of zone 2 penetrating injuries. Evidence suggests that selective operative management has equal results and outcomes.
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RECOMMENDATIONS

LEVEL 1
1. Selective operative management has equivalent diagnostic accuracy when compared to mandatory operative exploration in penetrating injuries to zone 2 of the neck.

LEVEL 2
1. High resolution CT angiography should be the initial study of choice.
2. CT Angiography or duplex ultrasound (vs. arteriography) can be used to examine for arterial injuries in the neck
3. Contrast esophagography, or esophagoscopy can be used to rule out esophageal perforation that require operative repair. (done within 24 hours)

LEVEL 3
1. Careful physical examination, serial examinations is >95% sensitive for detecting injuries that require repair.
2. CT neck with contrast can be used to rule out significant injury to neck.

References:


Penetrating injury to zone 2

Signs of Injury
1. Active hemorrhage
2. Expanding hematoma
3. Bruit
4. Pulse deficit
5. SQ emphysema
6. Hoarseness
7. Stridor
8. Respiratory distress
9. Hemiparesis

Diagnosed Injury or Physician Discretion

CTA of neck for vascular injury
Or CT contrast of neck + duplex
UGI for esophageal injury

No Injury

Observation