PRACTICE GUIDELINE

Effective Date: **7-16-04** Manual Reference: **Deaconess Trauma Services**

TITILE: MANAGEMENT OF PENETRATING NECK INJURY

PURPOSE: To provide guidelines for the management of a penetrating injury to the neck, specifically as it relates to the need for operative exploration and the ordering of diagnostic studies.

DEFINITIONS:

Penetrating Injury: Any inflicted injury that penetrates the skin. This could be a gunshot wound, stab wound or foreign body penetration of any nature. These guidelines do not apply to penetration of the oral or pharyngeal mucosa as might be seen with medical instrumentation, etc.

Neck: The circumferential region of the body bounded by the clavicles and the base of the skull.

GUIDELINES:

1. For all penetrating injuries of the neck, first apply all of the principals of ATLS. Pay particular attention to airway, since this will be the most life-threatening associated condition. Emergency cricothyrotomy should be avoided in the Emergency Department, if possible, since a contained hematoma can be released causing severe complications. Remember that neck injuries can be associated with chest injury, therefore chest assessment should be fully undertaken.

2. If the neck injury is associated with any of the following conditions, then the patient should be taken immediately to the operating room.
   a. Shock
   b. Active hemorrhage
   c. Expanding hematoma
   d. Need for surgical airway
   e. Obvious esophageal injury
   f. Obvious tracheal injury
   g. Use Massive Transfusion Protocol for blood
   h. If patient requires one unit of blood, use tranxemic acid if blood loss started within <3 hours

3. For other stable neck injuries, a determination should be made as to whether the platysma has been penetrated. Slash wounds can easily be examined to determine this. For puncture wounds that seem superficial, the wound can be anesthetized and enlarged for a direct visual observation to determine if the platysma is intact. DO NOT PROBE NECK WOUNDS!!!!! If the platysma is intact, then close the wound if possible.

4. If the platysma has been violated, then classify the wound as:
    a. Zone I - below cricoid cartilage
    b. Zone II- between cricoid and angle of the mandible
    c. Zone III- above the angle of the mandible
    d. An X-ray of the neck may be helpful if a bullet or foreign body is still in the neck and to assess for subcutaneous air

5. For Zone I injuries
    a. Obtain a chest X-ray to determine the presence of chest injury
    b. Obtain an angiogram, including the aortic arch and the great vessels
    c. Obtain an esophagram
    d. Obtain or perform bronchoscopy
    e. Treat on the basis of the findings

6. For a Zone II injury, use clinical findings to classify as low probability of vascular and aerodigestive injury or high probability of vascular and aerodigestive injury
    a. For high probability injuries (GWS, shotgun wounds, swelling, path crossing midline)
        i. If the injury is a gunshot wound or a shotgun injury, obtain an angiogram
        ii. Prophylaxis with antibiotics
        iii. Take to the operating room for neck exploration
    b. For low probability injuries (stab wounds, minimal swelling, lateral, posterior)
        i. Obtain angiogram
        ii. Obtain esophagram
        iii. Perform laryngoscopy and bronchoscopy if indicated (e.g., air in tissues or subcutaneous emphysema)
        iv. Treat based on the findings

7. For Zone III injuries
    a. Obtain angiogram
    b. Obtain or perform direct pharyngoscopy and laryngoscopy
    c. Treat based on findings

8. For all penetrating neck injuries that have violated oral mucosa, treat with antibiotics (usually penicillin or penicillin/aminoglycoside)

REFERENCES:

- Deaconess Trauma Guideline Manual, ENDOTRACHEAL INTUBATION AND AIRWAY MANAGEMENT.
- Deaconess Trauma Guideline Manual, EMERGENT THORACOTOMY.

REVIEWED DATE	REVISED DATE
Previous dates removed for space	JAN 08
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