A CASE PRESENTATION AND DISCUSSION ON HEAD AND NECK TRAUMA

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General Data:

B.R.

64 year old

Male

Tondo Manila

Chief Complaint:

Stab wound

History of Present Illness

- 30 minutes PTC → patient was involved in a brawl and was allegedly stabbed in the neck

↓

Consult

→ at the E.R.:
hematemesis

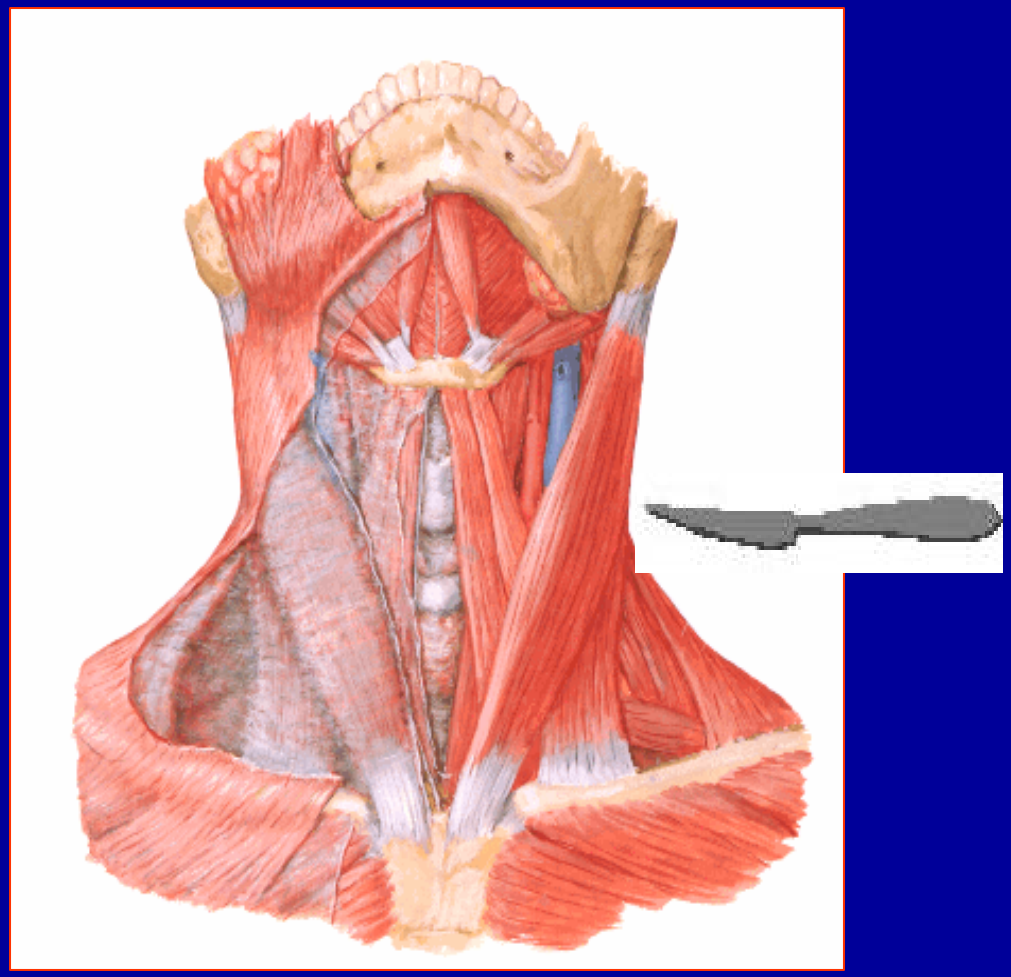
Physical Examination

- General Survey:
  - Conscious, coherent, in distress

- Vital Signs

  BP = 80/50 CR = 97 RR = 24

Physical Examination



- Stab wound
- Approx. 2 cms
- Lateral Neck, Left
- (+) air bubbling

Physical Examination

- Chest:
  - Symmetrical chest expansion, no retractions, clear breath sounds
- Cardiac:
  - Normal rate, regualr rhythm, murmur

Physical Examination

- Abdomen:
  - Flat, soft, nontender, no mass
- Extremities:
  - Full and equal pulses, no deformities

Salient Features

- **64 y/o**
- **Male**
- **Stabwound, neck**
- **Hypotension**
- **Air bubbling**
- **Hematemesis**

STAB WOUND, NECK

PENETRATING NECK INJURY

NON PENETRATING NECK INJURY

STAB WOUND, NECK

PENETRATING NECK INJURY

(+) AIR BUBBLING THROUGH WOUND

NON PENETRATING NECK INJURY

PENETRATING NECK INJURY

- VASCULAR
- TRACHEA
- ESOPHAGUS
- VERTEBRA
  SPINAL CORD
- THYROID

PENETRATING NECK INJURY

VASCULAR

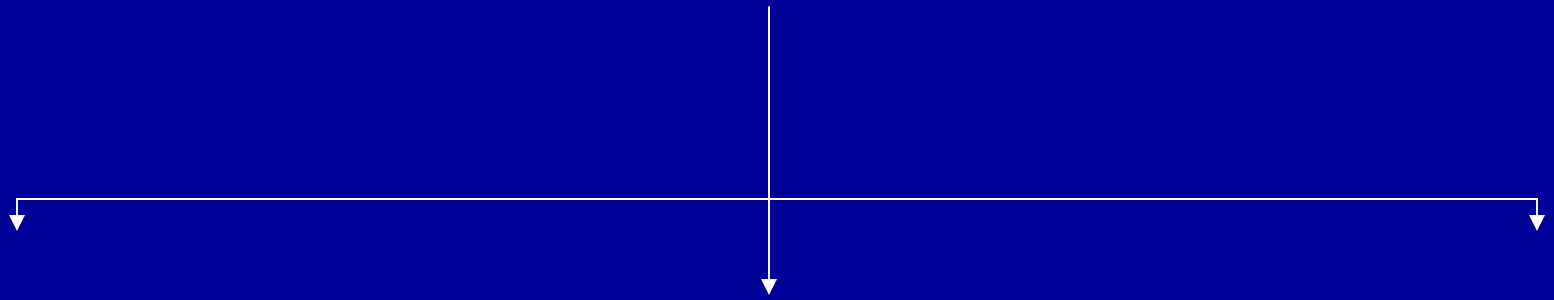
- (+) HYPOTENSION

PENETRATING NECK INJURY

TRACHEA

(+) AIR BUBBLING THROUGH THE WOUND

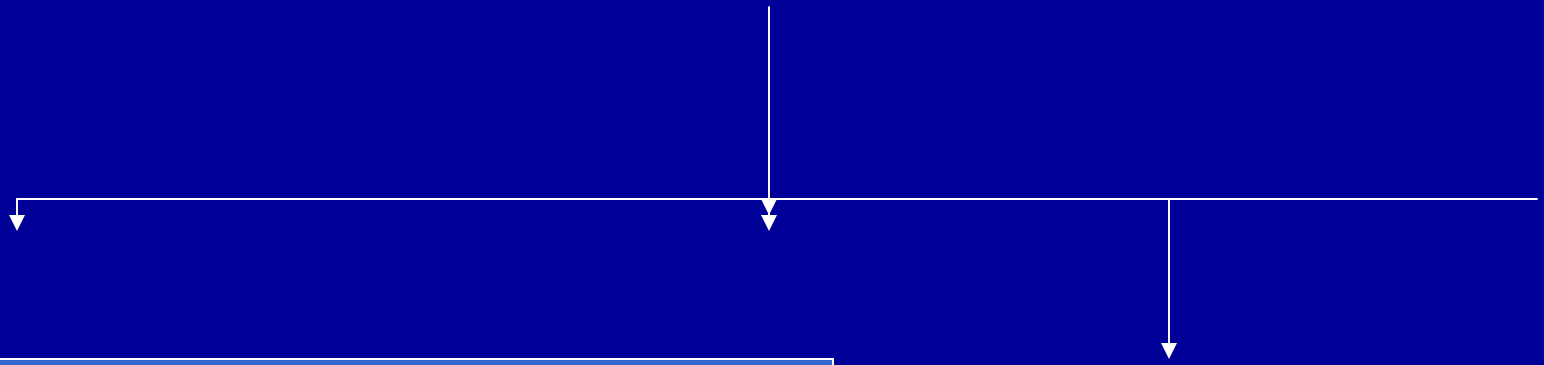
PENETRATING NECK INJURY



ESOPHAGUS

- (-) subcutaneous emphysema
- (-) pain on swallowing
- (+) hematemesis
- proximity to the trajectory of the wound

PENETRATING NECK INJURY

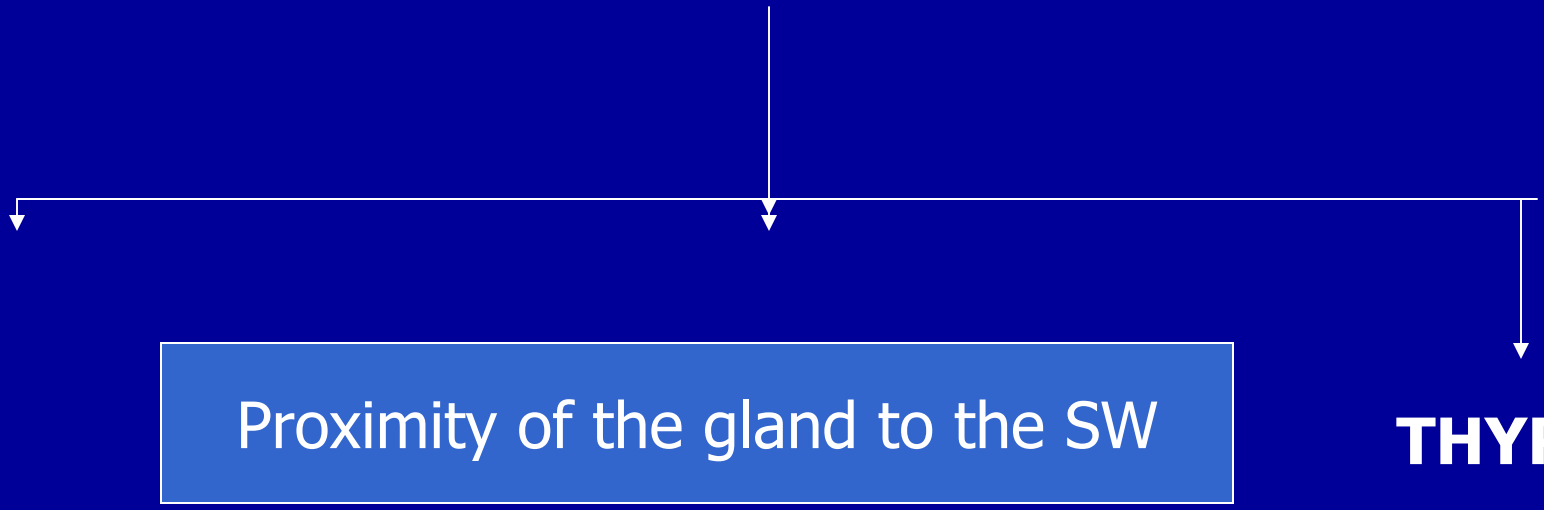


(-) sensory and motor deficit below the injury

VERTEBRA

SPINAL CORD

PENETRATING NECK INJURY



Pre Treatment Diagnosis

	Diagnosis	Certainty
Primary	PENETRATING NECK INJURY ZONE 2 SECONDARY TO STABWOUND WITH PROBABLE TRACHEAL INJURY and VASCULAR INJURY	**90%**
Secondary	PENETRATING NECK INJURY ZONE 2 SECONDARY TO STABWOUND WITH PROBABLE TRACHEAL INJURY without VASCULAR INJURY	**10%**

Paraclinical Diagnostic Procedure

- Do I need to perform a paraclinical diagnostic procedure?

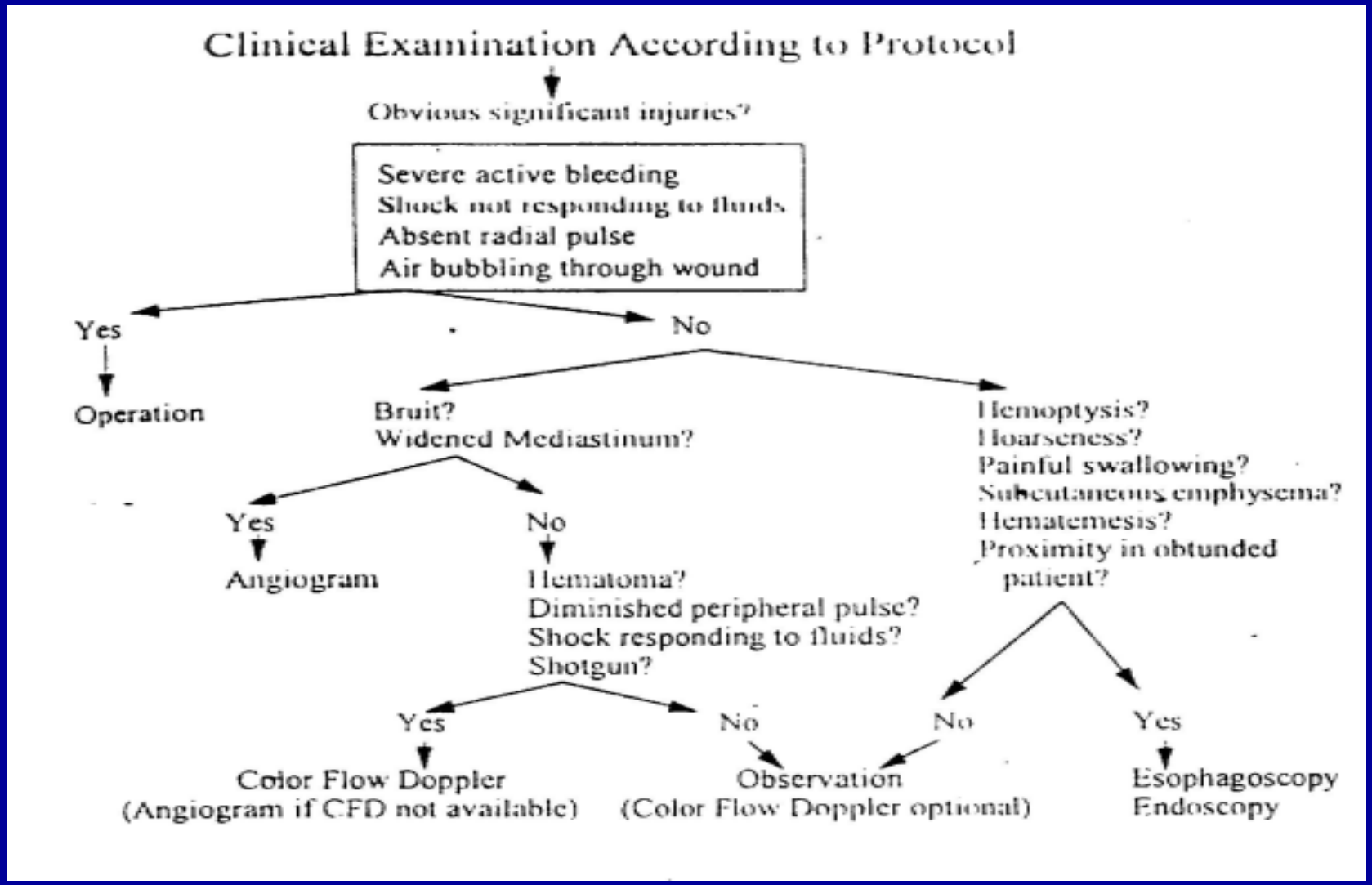
"NO"

- Certain of diagnosis
- Unstable patient

GOALS OF TREATMENT

- Resolve bleeding
- Resolve air leak

TREATMENT OPTIONS



PRE OPERATIVE PREPARATION

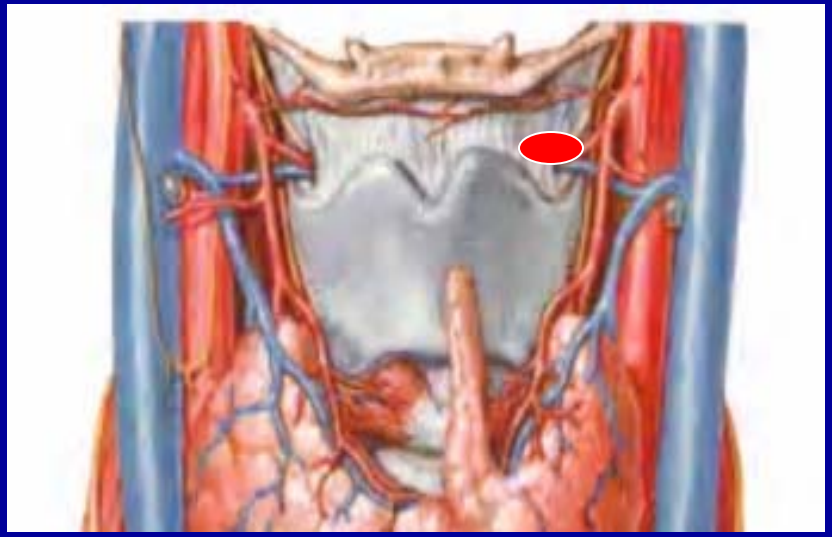
- Informed consent for immediate operation
- Psychosocial support
- Optimize patient's condition
- Screen for any condition that will interfere with treatment
- Prepare OR materials/blood
- Preoperative antibiotics started

INTRAOPERATIVE MANAGEMENT

- Patient supine under GETA
- Asepsis and antisepsis
- Sterile drapes placed
- Incision done over the anterior edge of the left sternoclaedomastoid muscle
- Skin flaps created
- SCM retracted laterally
- Strap muscles over stab wound transected

INTRAOPERATIVE MANAGEMENT

- Intra operative findings:
  - 2 cm perforation at the left laryngopharyngeal area just above the thyroid cartilage, near the epiglottis
  - venous bleeder 3mm beneath the strap muscles



INTRAOPERATIVE MANAGEMENT

	BENEFIT	RISK	COST	AVAILABILITY
Primary repair without Tracheostomy	Controls air leak with no stoma High success rate for non complicated injury	Anastomotic leak Airway obstruction	+	Available
Primary repair with Tracheostomy	Controls air leak Assures airway patency and good mucus clearance postoperatively	Risk associated with tracheostomy and tracheostomy care	+ * *Additional cost of the tracheostomy set*	Available

INTRAOPERATIVE MANAGEMENT

- Primary repair done
- Hemostasis
- Correct sponge and instrument count
- Layer by layer closure with placement of drain
- DSD

Operation Done

- Neck exploration
- Primary repair , laryngopharyngeal injury
- Ligation of bleeder

POST OPERATIVE MANAGEMENT

- **DAT when fully awake**
- **Adequate analgesia**
  - » Mefenamic Acid 500 mg/tab 1 tab every 8 hours for pain in full stomach
- **Adequate hydration**
- **Early ambulation**
- **Daily wound care**
- **1st POD- 2nd POD-**
- **Follow-up on out-patient basis after 1 week**
- **To come back any time if with problems regarding the operation**

FINAL DIAGNOSIS

- PENETRATING NECK INJURY ZONE 2 SECONDARY TO STABWOUND WITH LARYNGOPHARYNGEAL INJURY

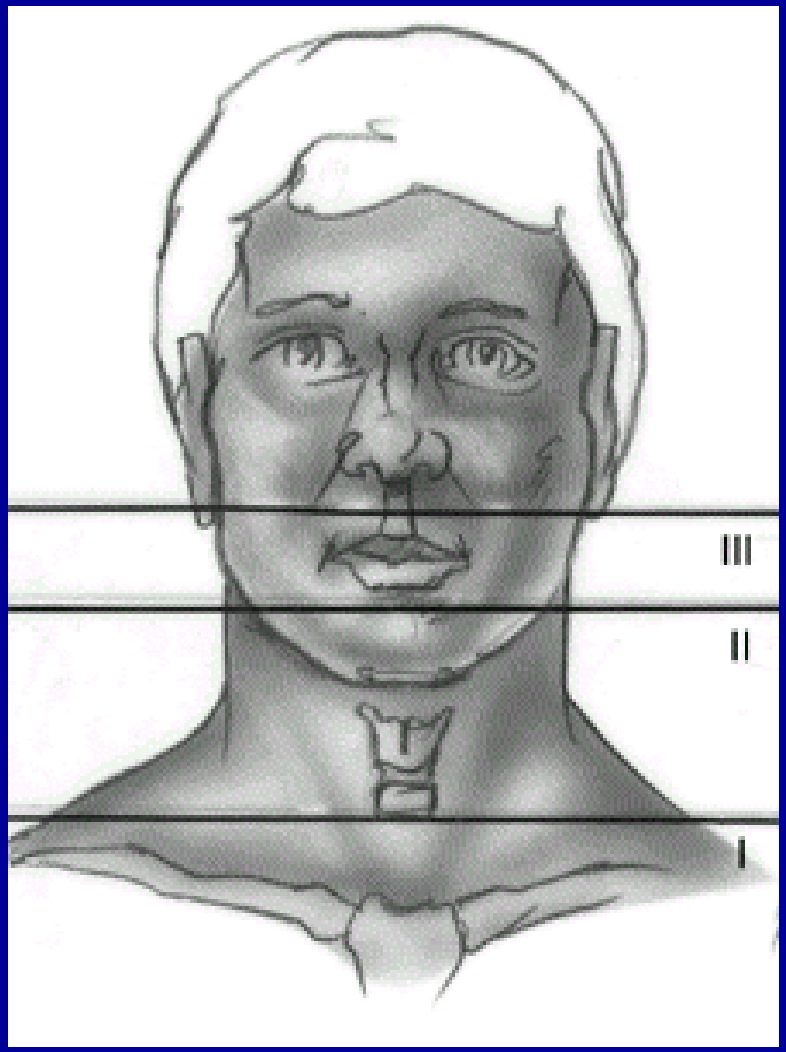
PREVENTION AND HEALTH PROMOTION

- Advise given to patient regarding
  - Possible complications
  - Proper wound care
  - OPD follow up

DISCUSSION

ETIOLOGY

- missile injuries from firearms
- stab injuries
- Blast injuries with penetrating bomb and mortar fragments (less common)
- Accidental (falls on sharp objects)
- Motor vehicle accidents



Zones of the Neck:

- ***ZONE I*** → from cricoid cartilage to the clavicle
- ***ZONE II*** → from angle of the mandible to the cricoid cartilage
- ***ZONE III*** → above the angle of the mandible to the base of the skull

- **Zone 1**
  - includes the thoracic inlet
  - subclavian artery and vein
  - jugular vein
  - common carotid artery
  - Esophagus
  - Thyroid
  - trachea.

- **Zone 2**
  - common carotid artery
  - internal and external carotid arteries
  - jugular vein
  - Larynx
  - Hypopharynx
  - cranial nerves X, XI, and XII.

- **Zone 3**
  - internal and external carotid arteries
  - jugular vein
  - lateral pharynx
  - cranial nerves VII, IX, X, XI, XII.

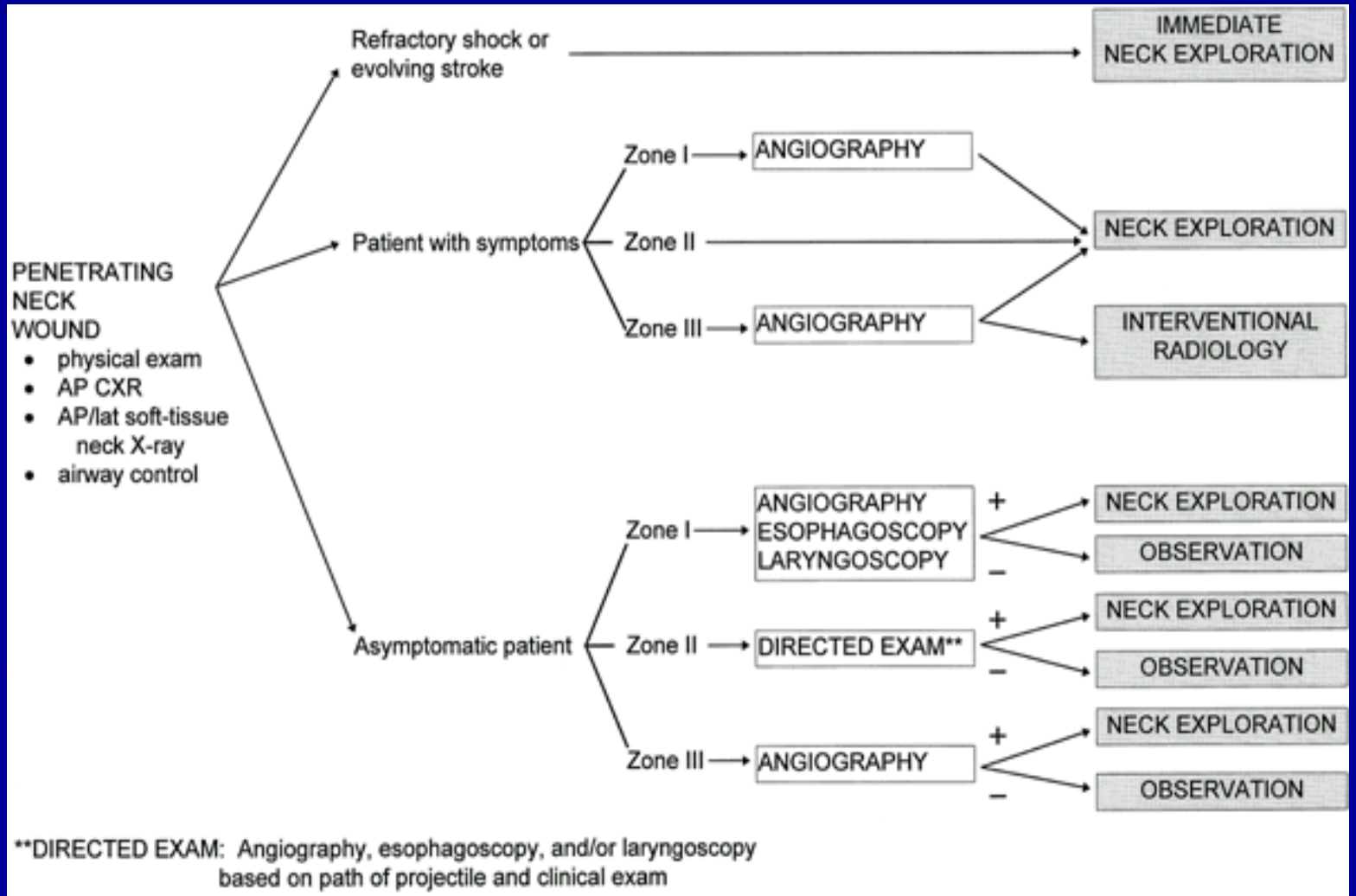


FIG. 73-9. Algorithm for the initial management of patients with penetrating injuries to the neck. (Modified from ref. 14, with permission.)

- Complications
  - Bleeding
  - Mediastinitis (most significant acute)
  - Infection
  - Nerve injury (may present late)
  - Formation of fistula

- current mortality rate for penetrating neck injury is 3-6%,
- 50% of deaths caused by vascular injuries
  - cause complications in 40% of cases
  - 10% of patients: injury to the carotid artery
- Aerodigestive tract injuries: 23-30%
- Esophageal injuries associated with mortality rates of 11-17%.

References

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- H.J.Hammawa, S.G. Marshall, E.Ghareeb and W. Holmes, Unusual Penetrating Metal Fragment Injury ti the Neck
- Hersam G, Barker P, Bowley DM, Boffard KD. The management of penetrating Neck injuries. Int Surg 2001 Apr-Jun;86(2).
- LeBoeuf H.J.; Penetrating Neck Trauma, Dept. of Otolaryngology, UTMB, Grand Rounds Presentation 1999

Questions

MCQ #1

The current mortality rate for penetrating neck injury is.

a. 1-2%
b. 3-6%
c. 7-10%
d. 11-15%

Questions

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Questions

MCQ #2

The most significant acute complication that the clinician should watch out for in cases of penetrating neck injuries is:

a. Mediastinitis
b. Bleeding
c. Infection
d. Wound dehiscence

Questions

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Questions

MCR #3

(a = 1,2,3; b = 1,3; c = 2,4; d = 4 only; e = all)

Zone 3 of the neck contains the following structures:

1. Internal and external carotid arteries
2. Jugular vein
3. Lateral pharynx
4. Cranial nerves VII, IX, X, XI, XII.

Questions

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Zone 3 of the neck contains the following structures:

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3. Lateral pharynx
4. Cranial nerves VII, IX, X, XI, XII.

Questions

MCR #4

(a = 1,2,3; b = 1,3; c = 2,4;d = 4 only; e = all)

The indications for exploration of a penetrating neck injury include:

1. Unstable patient
2. Zone 1, symptomatic patient
3. Zone 2, symptomatic patient
4. Zone 3, symptomatic patient

Questions

MCR #4

(a = 1,2,3; b = 1,3; c = 2,4;d = 4 only; e = all)

The indications for exploration of a penetrating neck injury include:

1. Unstable patient
2. Zone 1, symptomatic patient
3. Zone 2, symptomatic patient
4. Zone 3, symptomatic patient

Questions

MCR #5

(a = 1,2,3; b = 1,3; c = 2,4;d = 4 only; e = all)

The most common causes of penetrating neck injuries are:

1. **Firearms**
2. **Motor vehicle accidents**
3. **Stab**
4. **shrapnels**

Questions

MCR #5

(a = 1,2,3; b = 1,3; c = 2,4;d = 4 only; e = all)

The most common causes of penetrating neck injuries are:

1. **Firearms**
2. **Motor vehicle accidents**
3. **Stab**
4. **shrapnels**

Thank You