

# INITIAL ASSESSMENT OF THE TRAUMA PATIENT

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# The TRAUMA TEAM



# Concepts of Initial Assessment

- **Rapid Primary Survey**
- **Resuscitation**
- **Detailed Secondary Survey**
- **Re-evaluation**
- **Initiate Definitive Care**

# Concepts of Initial Assessment

## **Triage**

**Sorting of Patients According to  
ABCs and Available Resources**

# Concepts of Initial Assessment

## Primary Survey

### Adult / Pediatric priorities – Same

- **A - Airway with C-Spine Control**
- **B - Breathing**
- **C - Circulation With Hemorrhage Control**
- **D - Disability: Neurologic Status**
- **E - Exposure / Environment**

# Concepts of Initial Assessment

Primary Survey

Establish  
Airway

**Caution**

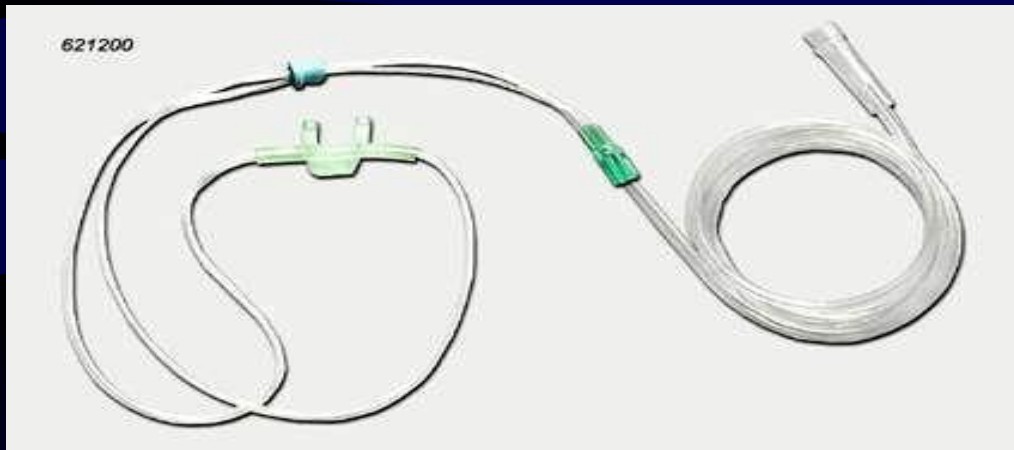
**Cervical Spine  
Injury**



**Adequate C-spine Film**

# Airway Management

# Nasal Cannula or Catheter



Flow O <sub>2</sub> (l/min)	%O <sub>2</sub>
2	28
3	32
4	36
5	40
6	44



# Oxygen Mask



Flow O <sub>2</sub>	%O <sub>2</sub>
5-6	40
6-7	50
7-8	60

# Mask with Reservoir Bag



Flow O2	%O2
6	60
7	70
8	80
9	80+
10	80+

# Venturi Mask

- FiO<sub>2</sub> from 0.24 to 0.40



# The Patient Condition

1. Conscious
  - A. Spontaneous respiration
2. Partially/ fully unconscious
  1. Occluded/ obstructed
  2. Inadequate
  - B. Apneic

# Signs and Symptoms of Airway Obstruction

- Noisy breathing
- Effort of breathing: tracheal tugging, intercostal recession, abdominal see-saw movement
- Increased use of respiratory muscles
  - Apnea (late)
  - Cyanosis (late)

# Basic Management of Airway Obstruction

1. Chin lift and head tilt.
2. Jaw thrust.
3. Both maneuvers.
4. Oro/nasopharyngeal airways.
5. Heimlich maneuver, suction etc.
6. Ventilation via mask and AMBU.

# Head Tilt/ Chin Lift



# Jaw Thrust

## Modified Jaw Thrust

- Used when possibility of C-spine injury exists
- Grasp the angles of the patient's lower jaw and lift with both hands, displacing the mandible forward
- If the lips close, retreat the lower lip with thumb





# Heimlich Maneuver



Cover your fist with your other hand and thrust up and in with sufficient force to lift the victim off his feet



# Modes of ventilation

- Mouth-to-mouth/ mouth-to-nose
- Mouth-to-mask
- Bag-valve device
- Transtracheal jet-ventilation
- Automatic transport ventilators

# Indications for securing an airway with an Endotracheal tube



# Definitive airway

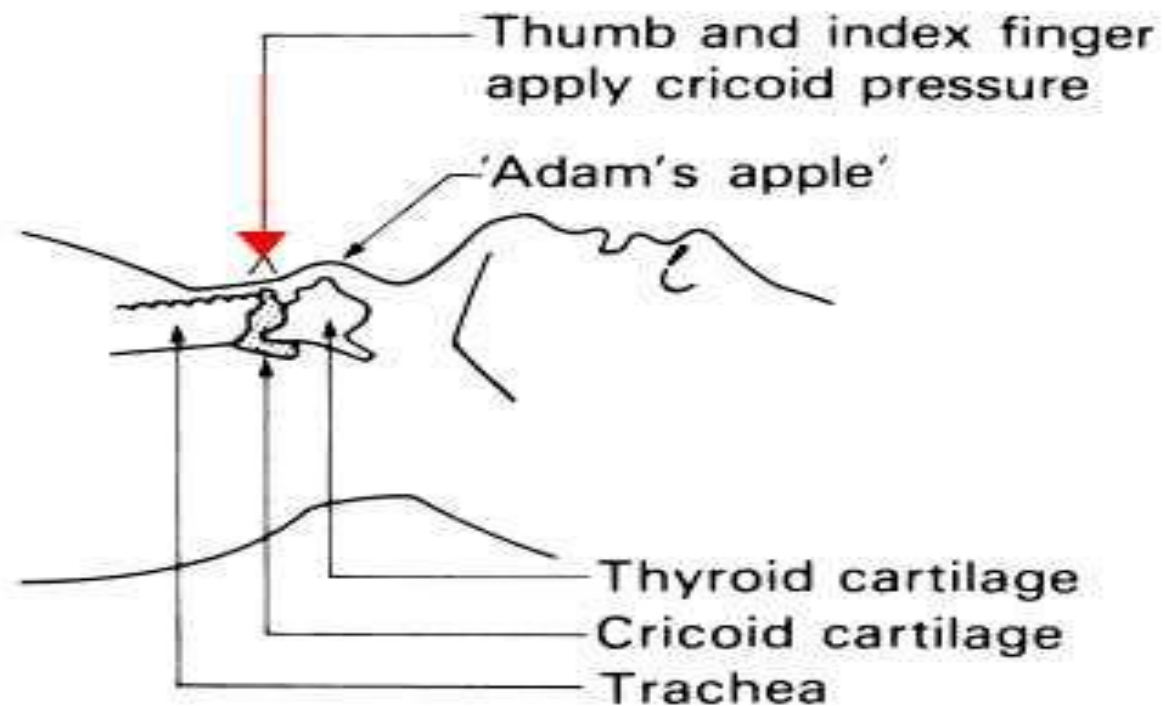


# The technique for rapid- sequence intubation is as follows:

1. Preoxygenate the patient with 100% oxygen
2. Apply pressure over the cricoid cartilage
3. Administer 1-2 mg/kg succinylcholine I.v.
4. After the patient relaxes, intubate the patient orotracheally
5. Inflate the cuff and confirm tube placement (auscultate the patient's chest and determine of CO<sub>2</sub> in exhaled air)
6. Release cricoid pressure
7. Ventilate the patient

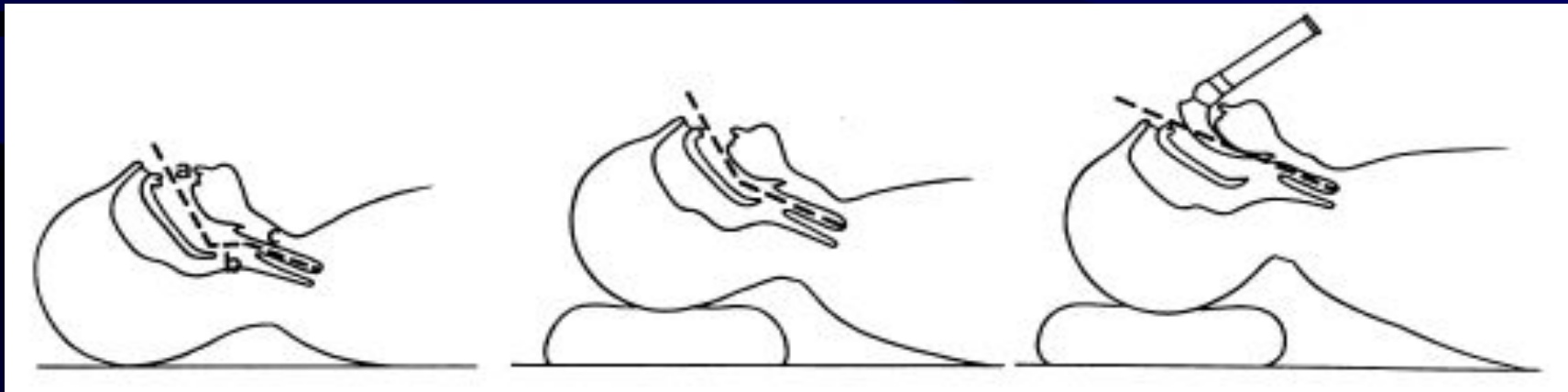
# Cricoid Pressure

Sellick's Manoeuvre, applying cricoid pressure

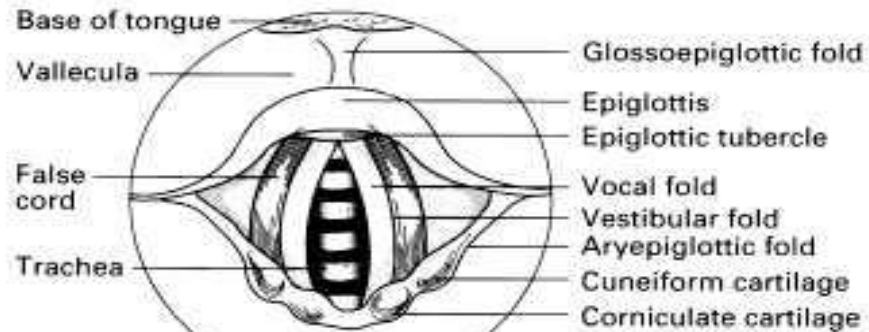


# “Sniffing Position”

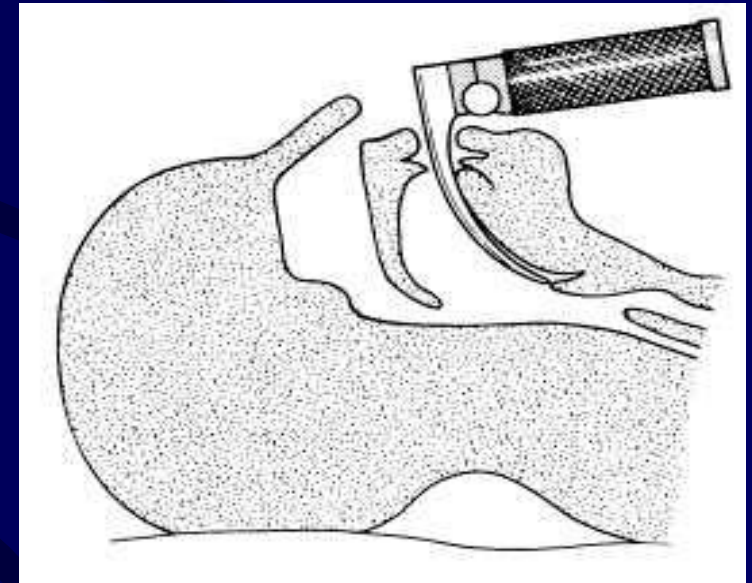
- *Remember about C-spine protection!!!*



# Endotracheal Intubation

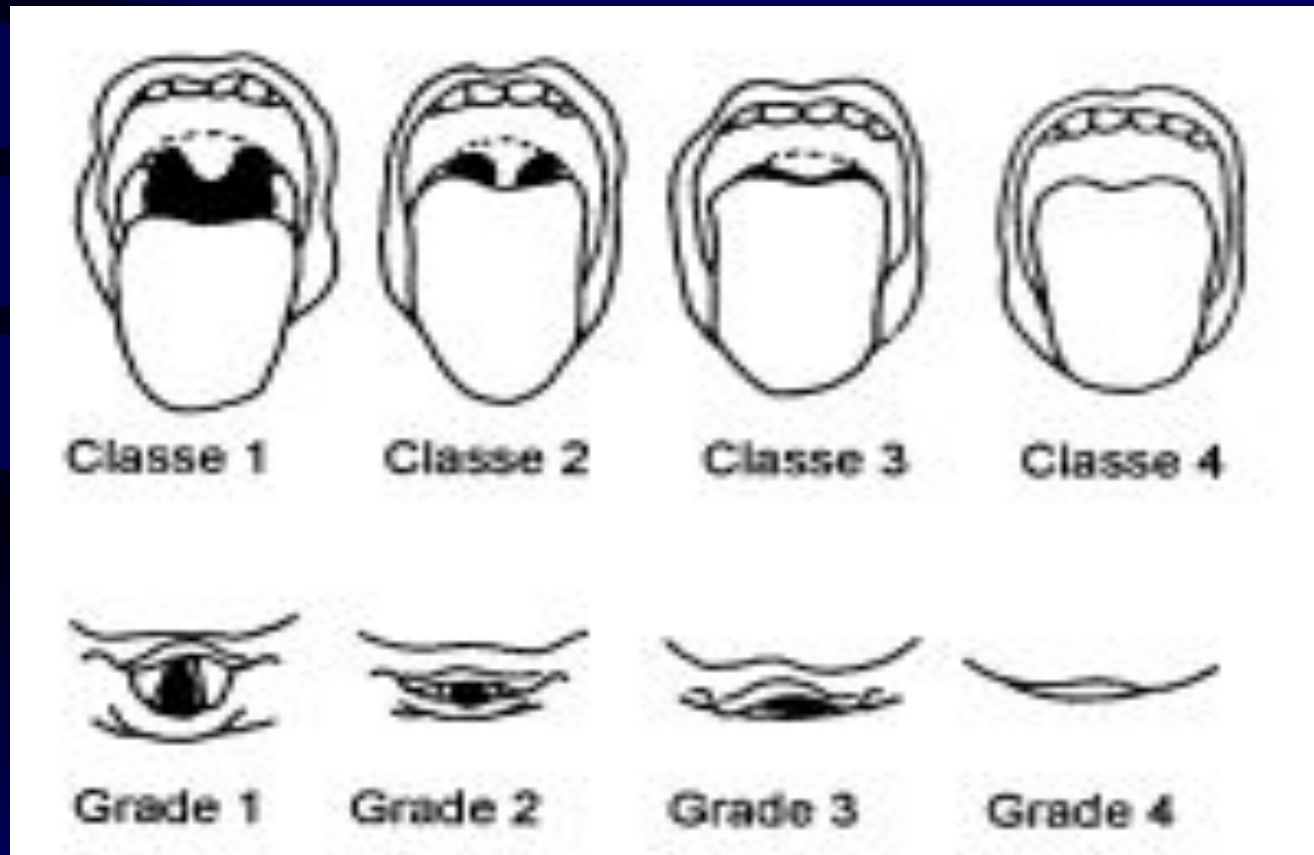


View of the larynx at laryngoscopy.

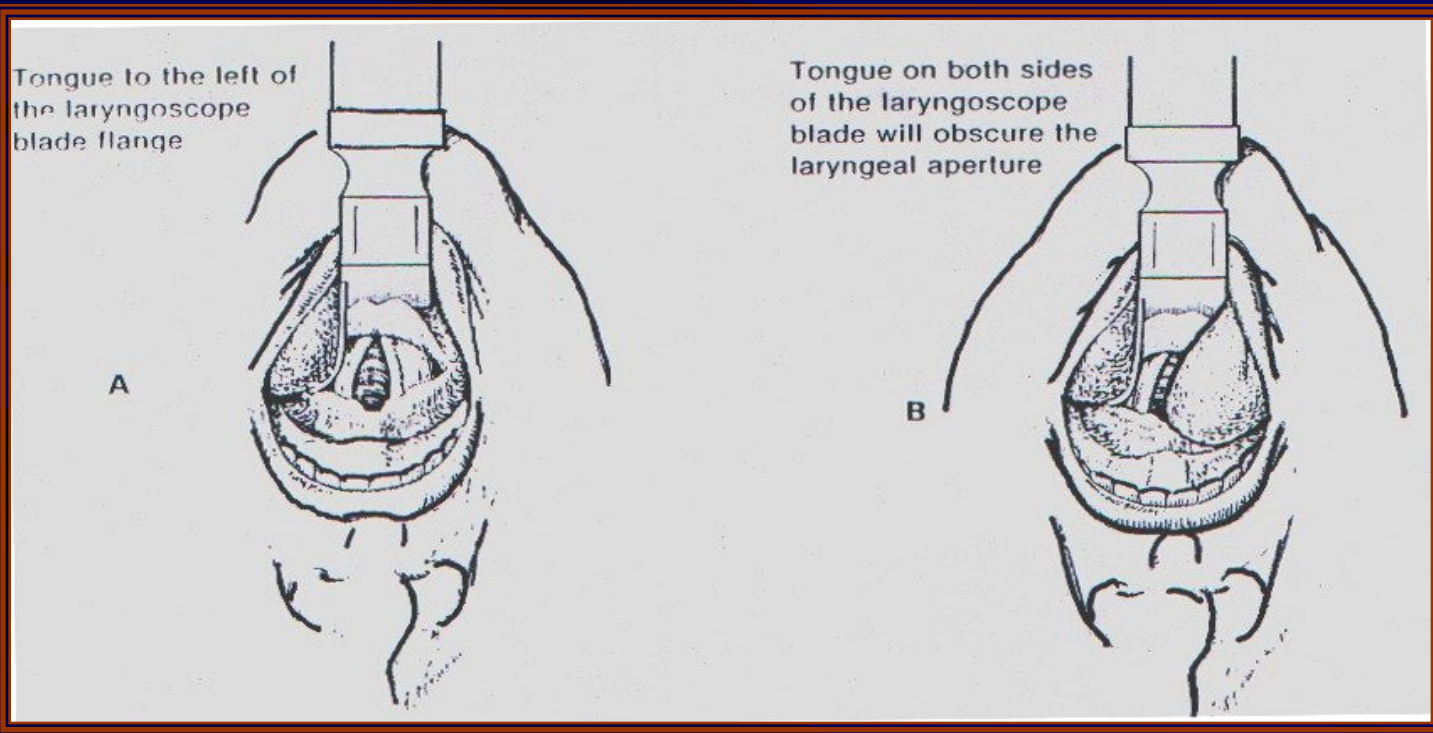




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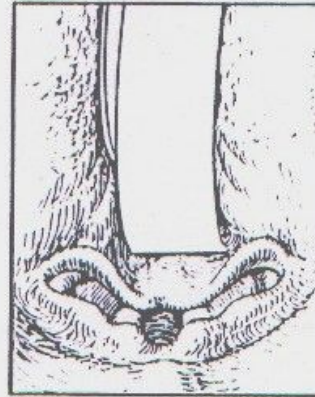
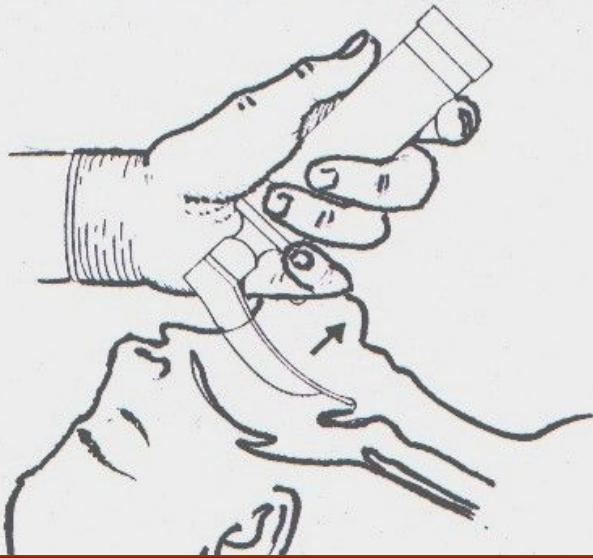


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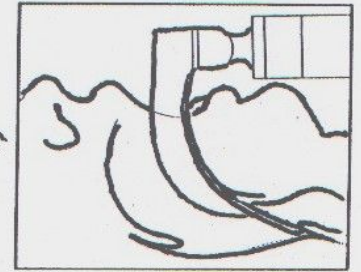
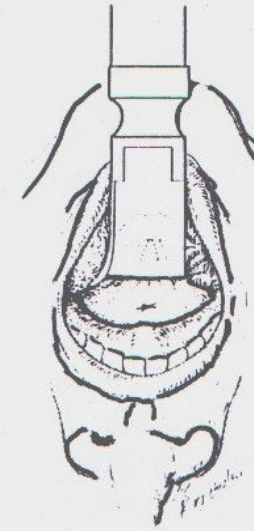


# Endotracheal Intubation

Insertion of the laryngoscope blade too deeply into the vallecula can push the epiglottis over the laryngeal aperture



Insertion of the Laryngoscope Blade Too Deeply into the Pharynx Elevates the Larynx and Exposes the Esophagus



# Endotracheal Intubation



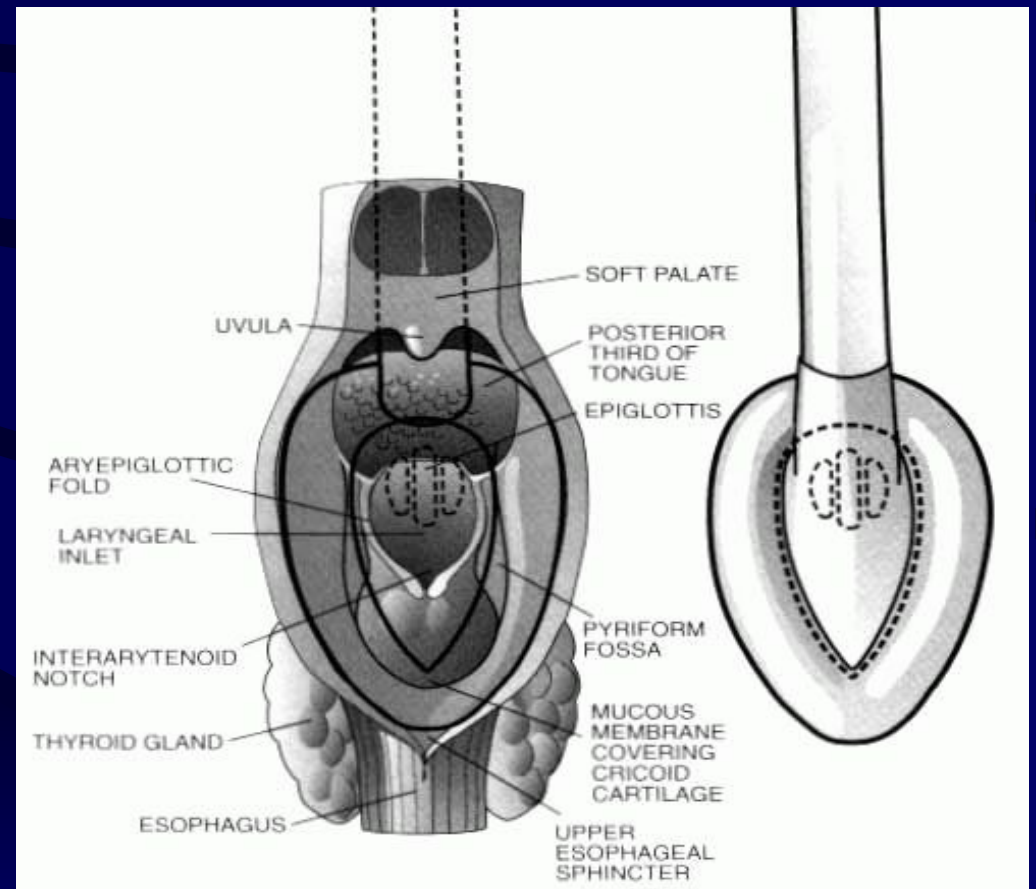
# Alternatives to Endotracheal Intubation



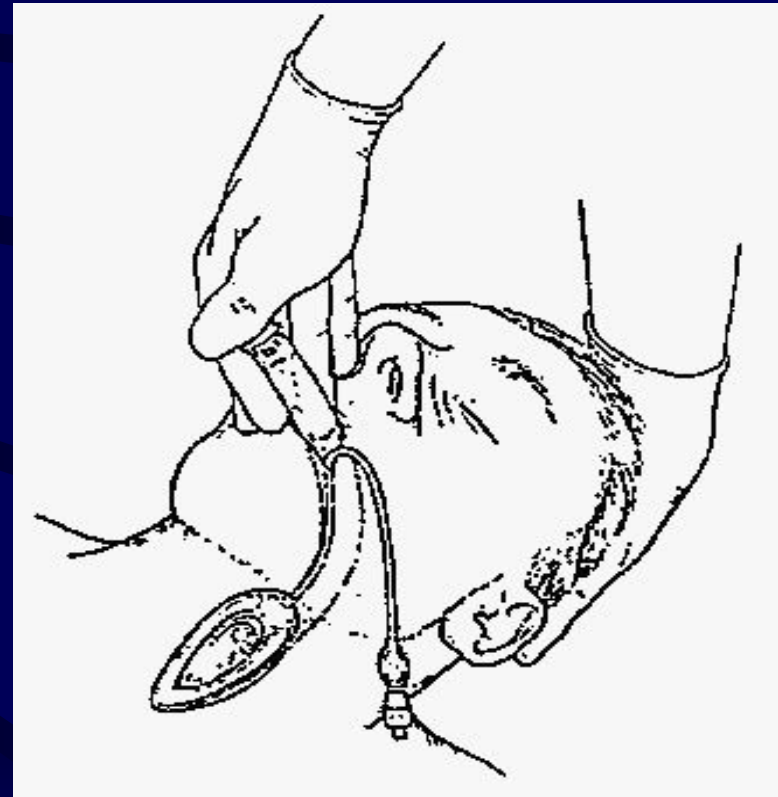
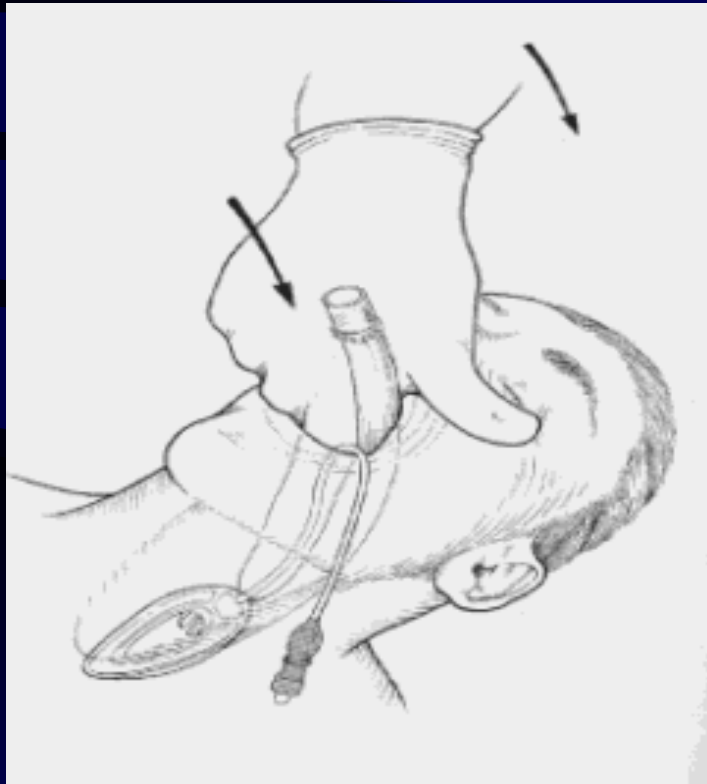
# Alternatives to Endotracheal Intubation

- Oropharyngeal airway
- Nasopharyngeal airway
- Laryngeal mask airway
- Esophageal-tracheal Combitube®
- Cryothyrotomy
- Tracheostomy

# Laryngeal Mask Airway



# LMA

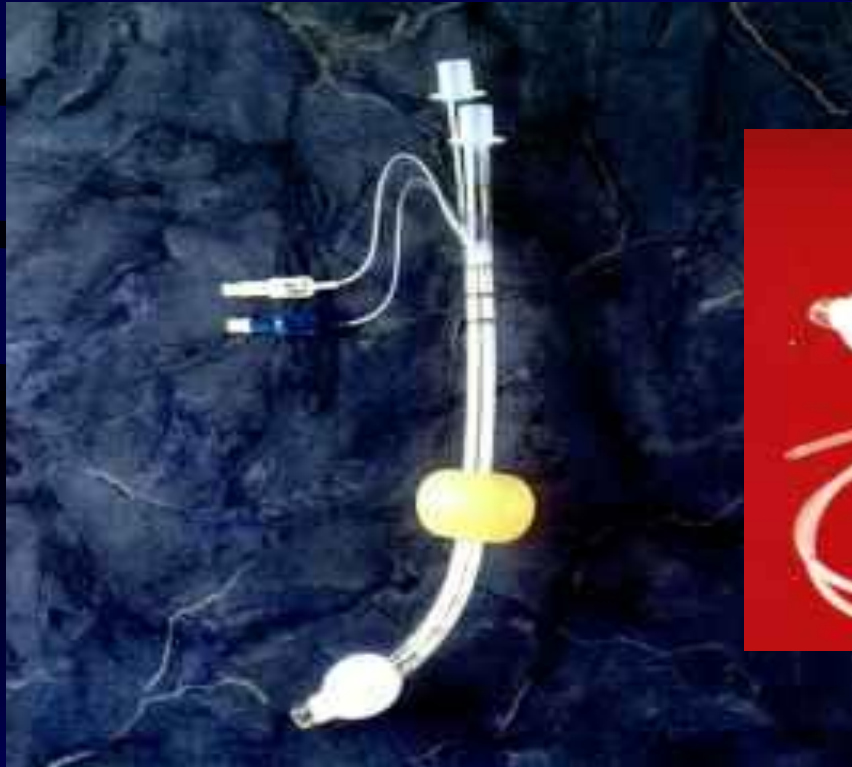




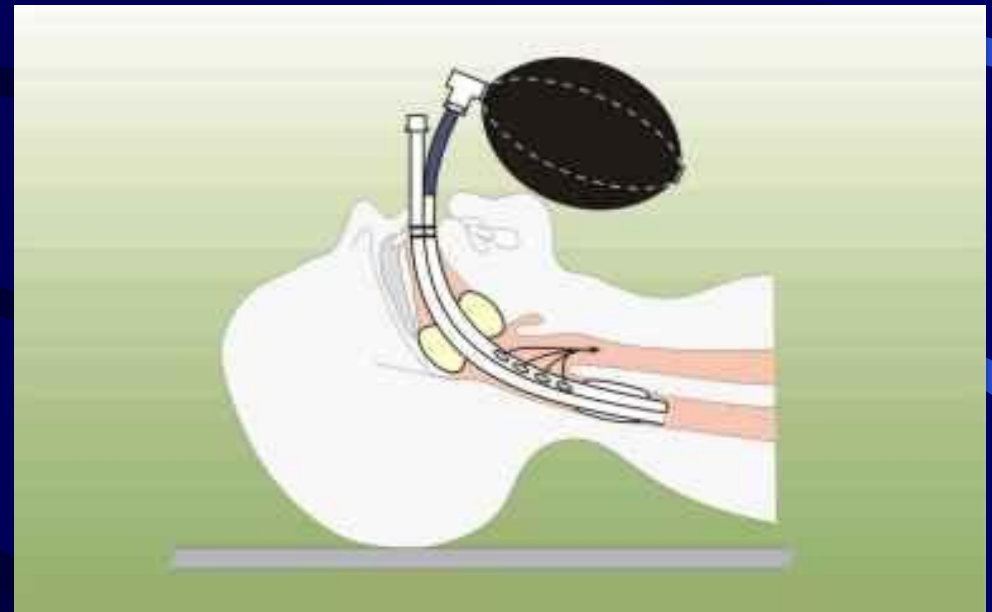
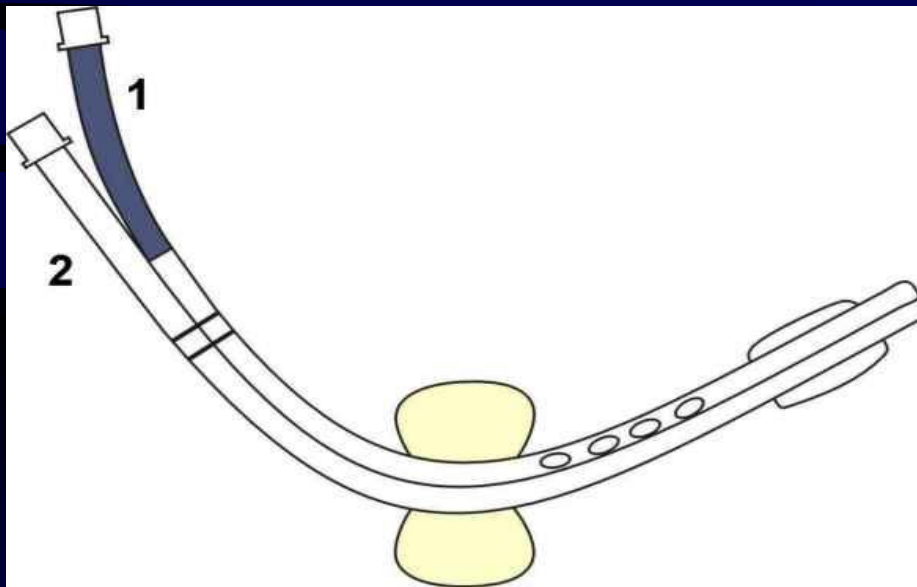
# Fast-track LMA®



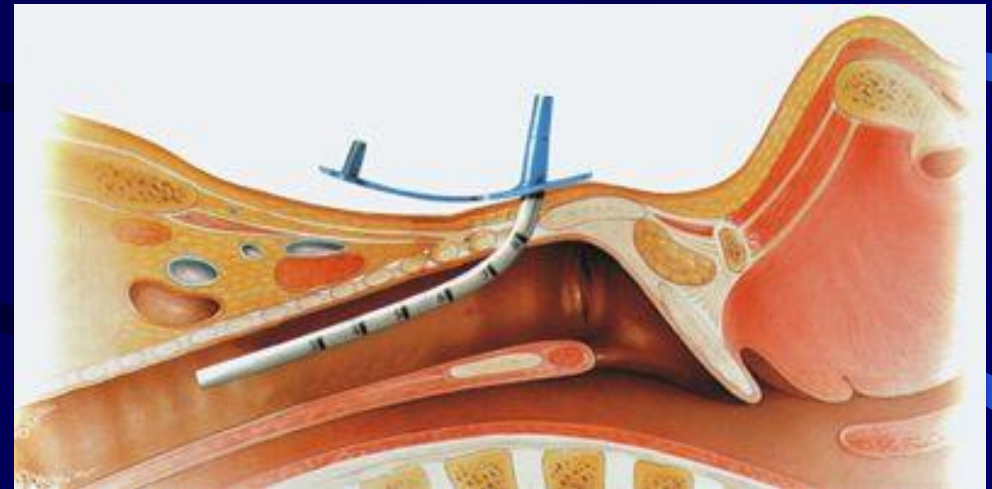
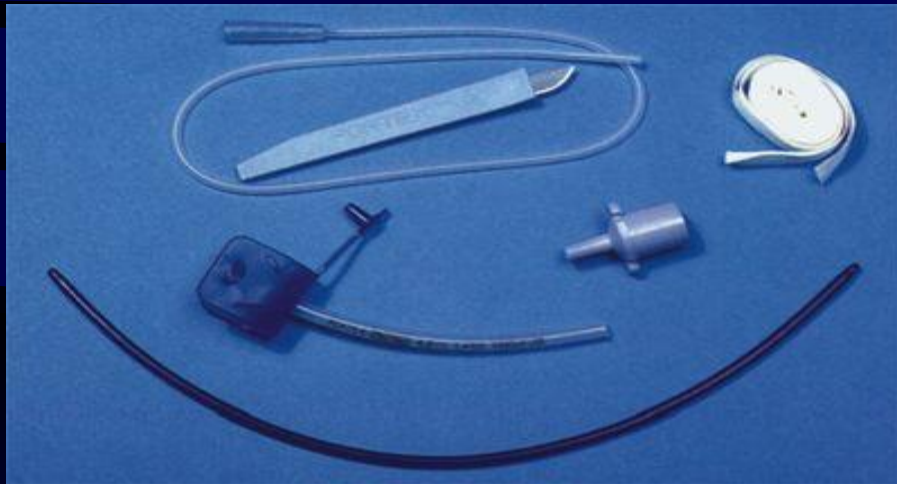
# Combitube®



# Combitube®



# Cryotherapy



# Tracheostomy



# Concepts of Initial Assessment

## Primary Survey

### Assume C-Spine Injury !!

- **Multi System Trauma**
- **Altered Level of Consciousness**
- **Blunt Injury Above Clavicles**

# Concepts of Initial Assessment

## Primary Survey

### Circulation

- Assess Blood Volume Loss and Cardiac Output
- Level of Consciousness
- Skin Color
- Pulse



Hemorrhage Control

# Concepts of Initial Assessment

## Primary Survey

### Disability:

#### Neurological Evaluation

- **Level of Consciousness**
  - **A** - Alert
  - **V** – Response To Voice
  - **P** - Response To Pain
  - **U** - Unresponsive
- **Pupils**



# Concepts of Initial Assessment

## Primary Survey

### Exposure / Environment

- Undress Pt Completely
- Protect from Hypothermia

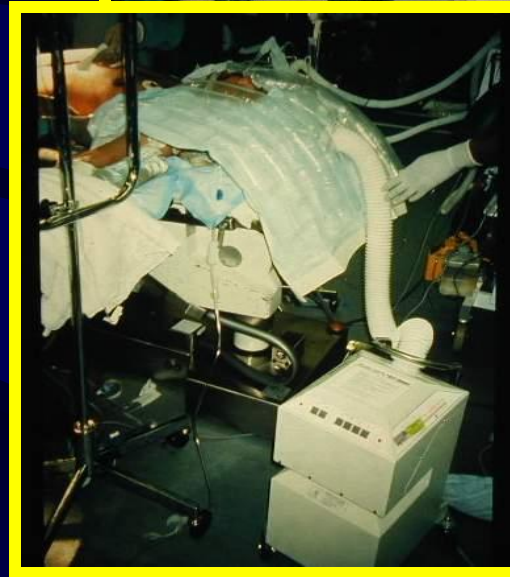
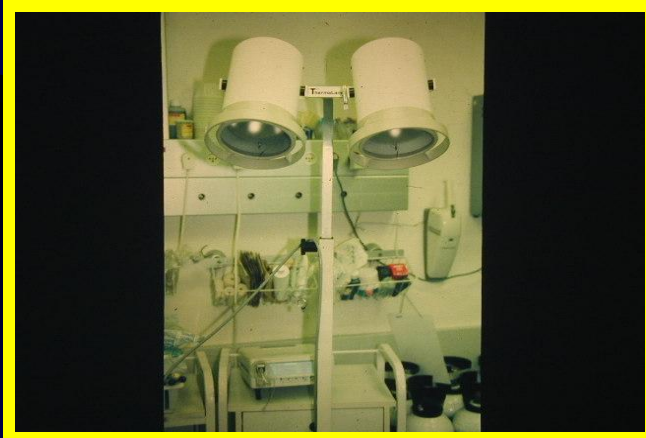
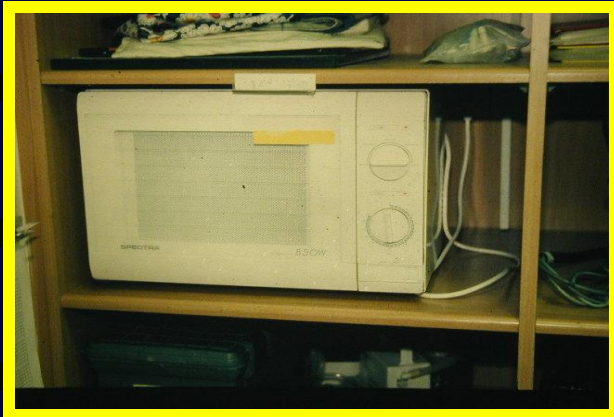
# Concepts of Initial Assessment

## Resuscitation

- **Protect / Secure Airway**
- **Ventilate / Oxygenate**
- **Fluid Therapy – New concept ???!**
- **Protect from Hypothermia**
- ***Caution:* Urinary / Gastric Catheters Unless Contraindicated**

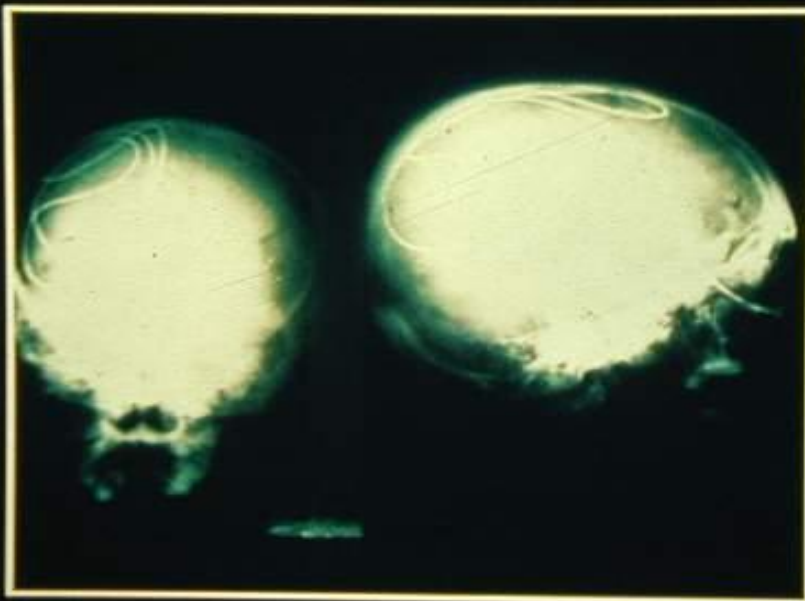
# Concepts of Initial Assessment

## Protect from Hypothermia



# Initial Assessment

## Catheter Contraindications



**Contraindication: Nasogastric  
Tube Insertion**

# Initial Assessment

## Monitor

- Vital Signs
- Urinary Output
- ABGs
- ECG, Temp, Pulse Oximetry
- Ent\ld Tidal CO<sub>2</sub>

# Initial Assessment

## Resuscitation

- **Manage Life-Threatening Injuries In Sequence and as Identified**
- **Consider Need For Transfer: MD to MD communication**

# Initial Assessment

## Before 2ry Survey

- Complete 1ry Survey
- Initiate Resuscitation
- Reassess ABGs

# Initial Assessment

## Secondary Survey

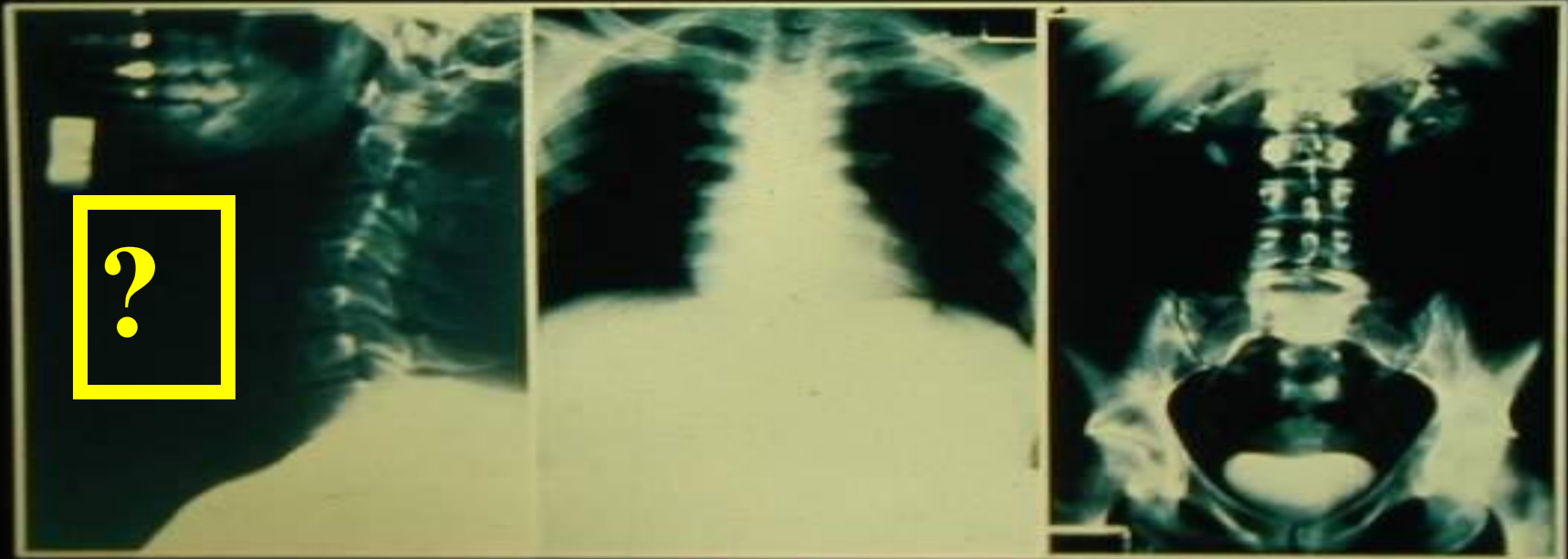
- Head-To-Toe Evaluation
- Complete Neurologic Evaluation
- X-Rays
- Special Procedures (Angio, MRI)
- “Tubes & Fingers in Every Orifice”
- **RE-EVALUATION**



# Initial Assessment

## “TRAUMA X-Rays”

### INITIAL ROENTGENOGRAMS



Do Not Delay Resuscitation!

# Initial Assessment

## Mobile X-Ray



INITIAL ASSESSMENT of THE  
TRAUMA PATIENT

# Initial Assessment

**A,B,C,D,E and U (ultra sound)**



INITIAL ASSESSMENT of THE  
TRAUMA PATIENT

# Initial Assessment

## Secondary Survey

- **Mechanism Of Injury: BLUNT**
  - **Direction of Impact Determines Injury Patterns**
  - **History / Description of Events**
  - **Age Factors**

# Initial Assessment

## Secondary Survey

- **Mechanism Of Injury: Penetrating**
  - **Anatomic Factors**
  - **Energy Transfer Factors**
    - **Velocity and Caliber of Bullet**
    - **Trajectory**
    - **Distance**

# Initial Assessment

## Spine X-Ray Issues



# Initial Assessment

## Secondary Survey

### Musculoskeletal

- **Extremities/Pelvis:**
  - Contusions, Deformity, Pain, Crepitation, Abnormal Movement
- **Vascular:**
  - Assess All Peripheral Pulses
- **Spine:**
  - Physical Finding
  - Mechanism of Injuries

# Initial Assessment

## Secondary Survey

### Neurologic

- Determine GCS Score
- Re-Evaluate Pupils
- Sensory / Motor Evaluation
- Maintain Immobilization
- Prevent 2ry CNS Injury
- Early Neurosurgical Consultation



# Initial Assessment

## Re-Evaluation

- **New Findings / Deterioration / Improvement**
- **High Index Of Suspicion**
- **Continuous Monitoring**
- **Pain Relief AFTER Surgical Consultation**

# Initial Assessment

## Definitive Care

- Trauma Center Vs
- Closest **Appropriate** Hospital

# Initial Assessment

## The Aftermath



INITIAL ASSESSMENT of THE  
TRAUMA PATIENT

# Initial Assessment

## Records & Legal Considerations

- **Concise, Chronologic Documentation**
- **Consent for Treatment**
- **Forensic Evidence**