Abstract
Prospective study of patients with direct external throat injuries (upper aerodigestive tract) injuries, received by emergency & surgical department of Hilla general teaching hospital in the last (4) years (from March 2001 to March 2005). 100 case recorded with following criteria of this type of injury as cervical surgical emphysema, dysphonia and/or stridor, dysphagia, neck pain or tenderness & haemoptysis. Those patients average age was 35 year. 75% were men. Mechanisms of injuries were gunshot wounds 47%, motor vehicle accident 33%.
Clinical picture 90% had neck Pain and/or tenderness, 75% had Hoarseness of voice and/or stridor. Priority of management depend on air way (stable or unstable) and type of injury.
Medical treatment control 50% of Patient, mostly those with stable air way. Early surgical intervention to deal with air way obstruction is needed in most of unstable type.
The failure of management mostly due to:
1. Absence of social education who to deal with this type of injuries at time and place of accident.
2. Absence of portable X-ray device & theater near emergency room
3. Shortage in respiratory care unit staff & equipments.

Introduction
Throat injury is rare. It has been estimated of 1 in every 14 – 42 thousand emergency room visits. 40% of blunt Trauma victims are estimated to be die at the sence of the accident.
Rapid recognition and security the air way are the keys in management.

The effectiveness of the initial management will determine the final air way and voice thus the otolaryngologist must be conversant with the diagnosis and treatment of this injury.

Mechanism of injury:
It's usually involved either blunt or penetrating Trauma.
larynx relatively protected by the mandible above, and the sternum below, but may be crushed between an blunt object and the cervical spine. Strangulation type of injuries result mainly in cartilage fracture while high speed injuries such as motor vehicle or sport related accident often have both cartilag injury as well as soft tissue injuries related to endolaryngeal shearing forces.

Cervical spine injury must always be suspected and excluded with this type of trauma. Penetrating injuries usually resulted from gunshot or knife wounds.

Gun shot injury result in massive injury and tissue loss not only in the path of the bullet but also in adjacent structures and that depend on the velocity of the bullet.

* Vascular injures, pharyngeal or esophageal injuries must be considered and evaluated.

**History and physical examination:**

The history of blunt or penetrating trauma to the anterior neck should always raise the question of throat injury while sever injuries usually have obvious finding. Stridor, hoarsness of voice, dysphagia, odynophaga and anterior neck pain (are the symptom of Laryngeal Trauma).

On examination subcut. Emphysema, Haemoptysis on examination. Laryngeal tenderness are common finding. Loss of thyroid cartilage prominence and ecchymosis of over lying skin may be noted.

In cases where air way is stable, flexible fiberoptic laryngoscope can provide important information. True vocal cord mobility, soft tissue injuries including oedna, lacerations and haematomas as well as the patency of the air way can be evaluated (also cervical spine and vascular injury must excluded in this initial evaluation).

**Diagnostic imaging:**

C.T used in Throat Trauma to see:
1. Integrity of the laryngeal skeleton.
2. Associated cervical spine injuries

The C.T not used in those with:
1. Obvious throat trauma need exploration.
2. Minimal Trauma without physical finding cervical spine X-ray, Angiography, Barium oesophagogogram may be indicated.

**Air way Management:**

Stable air way: evaluation of patient Trauma by fiberoptic endoscopy, C.T scanning.

Un Stable air way: Tracheostomy or cricothyrotomy, but in pediatric use small size endotracheal intubations after rigid endoscopy than tracheostomy done under general anaesthesia.

**Medical management:**

Select patients with stable air way, injury not involve free margen of vocal cord or anterior commissure, those with undisplaced fracture thyroid cartilage.

24 Hours Air way observation, voice rest, head elevation, Humidification of air, prophylactic steroid to decrease laryngeal oedema, H2 blockers to decrease Trauma from reflux of gastric acid.

**Surgical Management:**

1. Patients with sever injuries should be taken to the operation room as soon as possible for direct laryngoscope and (Bronchoscopy and Oesophageoscopy) Tracheostomy done if indicated.

Via direct Laryngoscopy when there is only, Laryngeal edema or minimal laceration, Haematomas with intact mucosal coverage, no further surgery is indicated, a part from tracheostomy if needed medical management is employed and the air way is maintained via Tracheostomy until patient tolerates prolonged plugging.
2. Those with intact endolarynx with displaced thyroid cartilage fracture. Treated by open reduction and internal fixations.

3. Those with large mucosal laceration or laceration involve anterior commissure or free margin of the cord, and those with exposed cartilage. All those need exploration of larynx plus internal fixation (done in first 24 hr, after injury), those patient need stenting tube from false cord to first tracheal ring (remove after 2 weeks).

* The goal's at this point is to return all remaining Tissure to its appropriate location and to cover all cartilage, primary closure is usually possible and debridment should be kept to minimum.

In sever laryngeal injuries the best final result may require partial or total laryngectomy.

Pediatric laryngeal injuries have special consideration due to:
1. Small larynx so less oedema lead to stridor.
2. High larynx lead to good protection.

3. The response to medical treatment is better then adult.

Complication of laryngeal injuries:
1. Granulation Tissure formation – is the most common complication prevented by:
   a. Primary closure and cartilage coverage.
   b. Limiting use of stents and early removal.
   c. Removal of developed GT by laser.

2. Laryngeal and tracheal stenosis treated by laser excision or segmental resection.

3. Vocal cords fixation either due to recurrent laryngeal nerve injury or fixation of cricoarytenoid joint, treatment depend on weather the airway is impaired or only the voice.

Patients and Methods
We reviewed the charts of 100 patient during the period from 2001 – 2005 (4 years), admitted to the hospital with the diagnosis of Direct external aerodigestive tract injuries.

Result

<table>
<thead>
<tr>
<th>Cause of Trauma</th>
<th>Total No</th>
<th>Hoarsness or Stridor</th>
<th>Neck Pain or Local Tenderness</th>
<th>Hemorrhage or Haemoptysis</th>
<th>dysphagia</th>
<th>Emphysema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gunshot</td>
<td>47</td>
<td>35</td>
<td>45</td>
<td>30</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Motor Vehicle</td>
<td>33</td>
<td>27</td>
<td>25</td>
<td>4</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Blunt neck Trauma</td>
<td>15</td>
<td>10</td>
<td>15</td>
<td>5</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Stabbing</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>
50% of patients were identified with cervical emphysema, cervical crepitance or both, thought to be caused by upper air way injury, the average patient age was 35 years, 75% were men. The mechanisms of injury were motor vehicle accident (33%), gunshot wound (47%), blunt neck trauma (15%), and stabbing (5%).

24% had dysphagia. 75% were hoarse or had stridor, 35% have haemoptysis, 90% have neck pain and or local tenderness, 9% have massive hemorrhage (mostly in those with cutting injury and gunshot injury).

Locations of injury was laryngeal and / or tracheal in 37%, hypopharyngeal injury with air way complication 27%, oropharyngeal injury with air way complication 15%. 21% of admitted patient not identified site of injury due to

1. Incorrect statistical data.
2. Bad management
3. unavailable of CT scan.

35% of admitted patient tolerate early examination by indirect laryngoscopy and fibreoptic endoscopy. But 65% need GA for evaluation of injury.

The site of injury determined in most of the cases. Those with cervical spinal injury excluded from the study.

Patient need tracheostomy in 83% of those reaching operating room, surgical exploration needed only is 30% of those cases.

Nasogastric tube put in 80% of those cases and failed in (5%) and not indicated in 15%.

50% of total Number of patients treated medically without surgical operation apart from tracheostomy, 15% of cases refered to other hospital. Because of large number of patient come at same time specially in massive accidents.

Complications accrue as sudden death in 5% of cases mostly due to sever hemorrhage, Brain steam injury, undiagnosed cerviccal spinal injury (# or dislocation of spine above C4), abdominal or chest injury.

**Discussion**

The Number of cases (100 case) reviewed in last 4 years 2001-2005 of clear direct arodigestive tract Trauma is very low number when compared with real number of persons effected by this type of injuries in Babylon city because of:
Defect in 1st aid air way management at time and place of accident and also failure in early & smooth transport of injured patients.

From this study show that theirs special criteria of patients with laryngeal Trauma as Hoarseness of voice and / or stridor neck emphysema, neck pain or local tenderness, dysphonia local neck ecchymosis. So when receive patient with one or more of those criteria put him in special priority in management of air way so put the patient in respiratory care unit if have real air way obstruction need to be tracheostomised or intubated to provide air way before doing any other surgery for the patient.

Medical treatment can save good number of patient so we must prepare respiratory care unit with its equipment & good trained staff to deal with this type of injury. Large number of those patient need tracheostomy so try to due this operation whenever we think about it. from this study show theirs good number, of patient exposed to surgical exploration of upper aerodigestive tract at day of Trauma with prefect results.

Most of patient which referred from other hospital presented with vary poor general conditions and not managed properly so we are facing vary big problem with those patient. The shortage in portable X-ray device and department, oximeter, operation theater near emergency room all these lead to loss number of patient due to delayed in clinical and radiological evaluation of injured patient with frequent manipulation from place to other.

**Conclusion**

The result show that suspected upper aerodigestive tract injury can be managed without surgery but that have high index of suspicion for air way compromise and associated facial injury must be considered.

So the protocol for evaluation and immediate treatment of air way injury is aggressive initial management high index of suspicion for injury and meticulous repair of the injured air way are equally important steps in the successful management of those patients.

**References**