

Review of Thoracic (Chest) Trauma 2002 AD at Shree Birendra Hospital

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Introduction

In this modern world Trauma (Injuries) ranks only after Cardio Vascular and Cancer as a cause of Death.

In England and America trauma is the leading cause of death in people under the age of 40 years.

Thoracic Traumas are the leading cause of death in 25 % of victims and contributory cause in another 50%

Patterns of Trauma patients differs with situation like in war and peace. So also their management is different.

At present our country Nepal is going through combat (war) like situation since last one year with lots of casualties coming for treatment at Shree Birendra Hospital Number of combat casualties beside regular trauma patients and admitted, treated and operated at our hospital was around 600 in this year period, 2002 A.D. which is almost double of the trauma patients admitted in year 1996 which was 360 (4)

Wound of the Thorax constitute 15 to 20 % of all combat injuries. Many patients die from cardiac or major Vascular injuries before reaching medical assistance. (ICRC)

In a forward hospital 7-10 % of all war wounds may be expected to be chest injuries. Establishment of adequate ventilation takes absolute precedence over all other therapeutic measures. Bleeding may also be critical. The treatment aims at reestablishing of normal physiological functions.

According to International Red Cross War Surgery Studies at front more than 90 % of all penetrating chest injuries can be managed initially by chest tube drainage. (ICRC)

Material

During this year Jan. to Dec. 2002 beside regular trauma patients. Combat casualties admitted in Shree Birendra Hospital was around 646. Out of 646 casualties patients 42 (6.6%) required Cardio-Thoracic Surgical consultation.

Most of these casualties were victims of armed conflict due to Fire Arm Injury and Bomb Blast injury.

Method:

In our hospital protocol once the trauma patient is received in Trauma Hall after the Assessment of patient and resuscitation, patients are referred accordingly to specialty. All the Chest Trauma Patients are routinely sent for x-ray chest.

If the patient's radiological report show Haemotliorax or Pneumothorax or HaemoPneLimothorax. Thoracostomy chest tube drainage is routinely inserted. Since last 3 years we are using Gambhir Thoracostomy forceps for insertion of chest tube Drainage.

If the patient has excessive Bleeding in chest tube more than 1000 ml. during insertion of chest tube or continue to bleed more than 300 ml. Blood in chest tube for consecutive 3 to 4 hourly or chest injury

patient has signs of severe intra thoracic injury we plan for Emergency Thoracotomy. Patients with chest wall injury with no obvious intra pleural injury were treated with Wound debridant and removed foreign bodies, of the total 41 patients. 15 patients (37%) had initial chest tube drainage. One patient required bilateral chest tube drainage.

- 3 patients required thoracotomy (20%) after
- Of 42 patients 15 patients (35%) required emergency thoracotomy due to major intra thoracic injury
- Out of 42 patients 8 patients (17.5%) had diaphragmatic tear. One (14%) had complete tear of the diaphragmatic tear following Blunt injury. 7 patients (85%) had diaphragmatic tear following penetrating injury. 4 patients had left diaphragmatic tear following penetrating injury and 3 patients had right diaphragmatic tear following penetrating Bullet injury chest.
- One patient had thoracic injury with left carotid Artery tear which was repaired
- 11 patients had chest wall and ribs fractured with no Haemothorax and no Pneumothorax.
- They were treated with wound debridant antibiotics and analgesic
- There was one (2.5%) death among 41 Chest Trauma patient The patient had bullet injury at head, neck, chest and abdomen by multiple bullets

Discussion

In comparison to our previous experience with trauma this year 2002 we had lots of combat injuries. According to ICRC War Surgery front line hospital receive 7 to 10% patients with chest injury. We received 42 patients (6.6%) chest injury patient Out of about 646 combat casualty patient in one year. Our Birendra Hospital works like front line hospital which receive and treat patients from all over the country. The comparative low mortality of Thoracic Trauma patient may be, due to early evacuation from the site of injury. The low mortality of trauma patients gives good moral boost to the combat casualty patients reaching hospital, and with feeling of confidence of Survival.

Contrary to Red Cross, War surgery Report, at front line hospital more than 90% of all penetrating chest injuries can be managed initially by chest tube drainage, in our series 50% of our patients required Emergency Thoracotomy. It was due to high number of open Haemopneumothorax & Diaphragmatic Injury.

Conclusion

With coming of peace and improvement in situation in our Country we expect to receive less number of combat casualty. As we have experienced once the casualties were reached in our hospital mortality has decreased.

So to increase the survival, we should increase our capability to bring casualty to hospital as soon as possible i.e. to shorten Evacuation time. (From Scene of combat to Hospital)

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Shree Birendra Hospital
Trauma Centre
Thoracic (Chest) Trauma

I. 1996 AD

<u>Total No of Patients Admitted-</u>	<u>360</u>
<u>Types of Injury</u>	
Limb Fracture	161
Abdomenal Injury	111
Head Injury	52
Chest Injury	26
Spine Injury	3
Burn Injury	7

II. 2002AD

<u>Total No of Patients Admitted with Caombat Casualty-646</u>	
<u>Types of Injury</u>	
Limb Injury & Fracture	432
Head Injury	81
Abdomenal Injury	53
Spine Injury	46
Chest (Thoracic) Injury	42
Facio Maxillary Injury	41
Eye Injury	27

Note: Due to Poly Trauma there were over lapping of figure

III. Chest (Thoracic) Trauma 2002

Total No of Patients Admitted	42
<u>Mechnism of Injury</u>	
Bullet Injury	21
Bomb Blast Injury	17
Blunt Injury	4

V. No of Emergency Operations	41
Thoracostomy (Chest Tube Drainage) 15	
Thoracotomy	15
Wound Debridement &	
Foreign Body Removal	12

IV. Types of Chest Injury

Penetrating Bullet Injury Chest	21
Haemothorax	10
Haemo Pneumpthorax	5
Open Pneumothorax	6

VI. No of Operations for Traumatic Diaphragmatic Tear- 8	
Penetrating injury	6
Rt.	4
Lt.	2
Blunt Diaphragmatic Lt. Tear	1

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***Poly - Trauma Patients Recovering after
Thoracic & Orthopedic Surgery
at Shree Birendra Hospital
Kathmandu Nepal***