Nature of Injuries in Recent Combat Scenario at Shree Birendra Hospital : A retrospective study

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For last one year, the total number of casualties received at Shree Birendra Hospital was 646. Many of them sustained Polytrauma with involvement of limbs in almost 70% of the cases. The number of high velocity missile injury has been greatly increased, and being the most commonest cause of high mortality and morbidity. Despite of having a very short chain of evacuation the time taken to reach the hospital is long in majority of cases.

This series consists study of casualties for last one year (from 2058/8/11 to 2059/8/25) received at Shree Birendra Hospital and managed with priority . The total number of casualties received at Shree Birendra Hospital till 2059/8/25 were altogether 464. majority of them were serving soldier (78.32%), civilians (12.5%) and others. (see table 1).

Serving soldier	**506**	**78.32%**
Civilians	**81**	**12.5%**
Police	**34**	**5.26%**
Maoists	**15**	**2.32%**
Ex. Army	**5**	**0.77%**
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Total	**646**	

(table 1)

The hallmark of modern war injury "multiple injury to different body part in a single casualty." Among the 646 casualties received at SBH, 407 sustained injuries at two or more than two body parts, i.e., almost 63% sustained Polytrauma.

The majority of casualties (almost 80%) fall in the age group of 18 years to 45 years. Although the number of casualties were only 646,the number of body parts involved due to Polytrauma were1052. The study of common injury pattern of the casualties, revealed that 72% of casualties sustained injury to the limbs (seetable 2). The lower limb was involved in 39.72% of the cases and upper limb was involved in32.41% of cases. The second place after the limb injury is occupied by the head injuries (8%) and third by abdominal injuries.

Common injurty pattern **Total No. of casualties = 646** **Total no of parts involved = 1012**		
Lower limb injuries	402	39.72%
Upper limb injuries	328	32.41%
Head injuries	81	8%
Abdominal injuries	53	5.23%
Spinal injuries	46	4.54%
Chest injuries	41	4.05%
Maxillo-facial injuries	41	4.05%
Injuries to the eyes	27	2.66%

Though the head injury and abdominal injuries are less in number but mortality of these injuries are very high.

It is already mentioned that majority of casualties sustained injury to the limbs. Among 730 limb injuries 478 sustained soft tissue injury, 45 had soft tissue injury with injury to the neurovascular bundles and 208 sustained injury to the bone (fracture of different severity). The total number of upper limb fracture were 98 and lower limb fracture in 110 cases. In upper limb fractures 38.29% had closed fracture and 61.70 had open fracture. Similarly in lower limb fracture, 54.48% had closed fracture and 45.51% had open fracture of the lower limb. There were 12 amputations, 4 in the upper lim and 8 in the lower limb at different level.

The total number of head injuries were 81, which is 8% of all injured body parts. According to the severity there were 42 cases of mild HI, 28 moderate HI and 11 cases of severe head injury.

The total number of abdominal injury was 53, among these 37 sustained splinter injurie not damaging any viscera and 16 had penetrating injuries.

27 patient sustained injury to the eyes of different severity. 8 patients underwent evisceration of eye.
46 patients sustained injury to the spine of different severity and 11 had fracture of spine. In majority of cases thoraco-lumbar spine was involved.

Significant number of maxillo-facial injury (41) was also noticed, most of them were due to splinter injury. 41 patients subtained chest injury due to bullet & splinter injury which required, 29 opcrations, 14 Emergency thoracotomy & 15 Chest Tube drainage & 12 wound defridement & foreingn body removal.

The total number of operations performed to the casualties were 178 and 11 of them died after operation with the postoperative mortality of 6.17%. Themajority of death were due to severe head injury and abdominal injuries. The mortality rate due to the limb injuries is very low (0.6%) but morbidity is very high requiring long term rehabilitation processes.

Types of operations performed	
Wound debridement	*91*
Internal/External fixation	*32*
Craniotomy	*21*
Laparotomy	*21*
Thoracostomy (Chest Tabe Drainge)	*13*
Thoracotomy	*14*
Amputation	*12*
Evisceration of eye	*8*

The study of injured revealed 3 major groups of injury affecting the most.

1. MISSILE INJURY (70.11%)
   a. Gun shot injury (40%)
   b. Splinter injury (60%)
2. BLAST INJURY (19.47%)
   a. Heat effect = 23
   b. Splinter effect = 75
   c. Sound effect = 109 had TM perforation.

Our hospital is practicing a very short chain of evacuation with only one stopage in between the site of injury and the hospital. But most of the time the casualties are evacuated directly to the hospital from site of injury.all the casualties are evacuated by the fastest means available, usually by air. Despite of having a very short chain of evacuation and use of fastest means, the time taken to reach hospital is very long. Only 11% of the casualties could reach the hospital with in the 6 hours, 29% reach between 6 to 12 hours and more than 60% reach the hospital after 12 hours.

CONCLUSION:

Since last one year, Shree Birendra hospital has been dealing with overwhelming number of casualties as a result of present combat scenario. This has resulted not only an extra work load apart from the regular surgical task but also has given a different dimension in the management of war wounds. The past experience of war in other countries and even the missile physics and its impact on human body has proved that the war wound is different than the civilian trauma or military trauma during the peace time. The high velocity missile injury and the resultant poly trauma (most of the time), the effect of shock waves, the situation of wounding and psychological aspect in a wounded patient is all important. The importance of life saving measures like maintenance of airway, breathing circulation and assessment of deformity by proper exposure of the body that have all been emphasized in the teachings, we have practically realized their tremendous role in practice. The definitive treatment provided to the injured personell by the hospital has been no doubt prompt and proper despite the fact that many cases arrive late. However, the the management of a wounded soldier is a long term project which includes the rehabilitation measures, provision of prosthesis, social support to the family etc., which of course have not been addressed so far.

REFERENCE:

1. SHREE BIRENDRA HOSPITAL MEDICAL RECORD SECTION.