

A Retrospective Analysis of Blunt Abdomen Injuries in Forensic Autopsies: An Institutional Based Study

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ABSTRACT

Background: Blunt abdominal trauma is seen with increasing frequency in emergency rooms and continues to be associated with significant morbidity and mortality in spite of its improved recognition, diagnosis, and management. Hence; the present retrospective study was undertaken for assessing the cases of blunt abdominal trauma from the records of forensic autopsies.

Materials & Methods: A total of 50 samples were included in the present study. Complete data was obtained from the data record files from the archives of the department. Mechanism of death and pattern of organ involvement was also recorded. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

Results: 58 percent of the patients of the present study were males while the remaining were females. Liver, intestine and spleen were the most common organs involved in the blunt abdominal trauma. The most common mechanism of death was haemorrhage followed by shock and infection.

Conclusion: Young males are most common victims of blunt abdominal trauma.


Key words: Blunt, Morbidity, Emergency.

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INTRODUCTION

Blunt abdominal trauma is seen with increasing frequency in emergency rooms and continues to be associated with significant morbidity and mortality in spite of its improved recognition, diagnosis, and management. Blunt abdominal trauma can cause damage to the internal organs, resulting in internal bleeding, cause contusions, or injuries to the bowel, spleen, liver, and intestines. Patients can also present with extra-abdominal injuries such as extremity injuries.¹⁻³

Clinical examination alone is inadequate because patients may have altered mental status and distracting injuries. Initial resuscitation along with focused assessment with sonography in trauma (FAST) and computed tomography (CT) abdomen are very beneficial to detect those patients with minimal and clinically undetectable signs of abdominal injury and are the part of recent management guidelines. Approach to trauma should be systemic and prioritized.⁴⁻⁶

Hence; the present retrospective study was undertaken for assessing the cases of blunt abdominal trauma from the records of forensic autopsies.

MATERIALS & METHODS

The present study was undertaken for assessing the cases of blunt abdominal trauma from the records of forensic autopsies at Department of Forensic Medicine, Gauhati Medical College and Hospital, Guwahati, Assam, India. Ethical approval was obtained from institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. A total of 50 samples were included in the present study. Complete data was obtained from the data record files from the archives of the department. Mechanism of death and pattern of organ involvement was also recorded. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

In the present study, a total of 50 patients were analysed. Mean age of the patients of the present study was 29.5 years. Majority of the patients belonged to the age group of less than 30 years. 38 percent of the patients belonged to the age group of 30 to 50 years. 58 percent of the patients of the present study were males

while the remaining were females. Liver, intestine and spleen were the most common organs involved in the blunt abdominal

trauma. In the present study, the most common mechanism of death was haemorrhage followed by shock and infection.

Table 1: Age and gender-wise distribution

Parameter		Number of patients	Percentage of patients
Age group (years)	Less than 30	19	38
	30 to 50	18	36
	More than 50	13	26
Gender	Males	29	58
	Females	21	42

Table 2: Organ involvement

Organ	Number of patients	Percentage of patients
Stomach	15	30
Omentum	13	26
Intestine	18	36
Liver	20	40
Spleen	16	32
Kidneys	8	16
Bladder	11	22
Pancreas	7	14

Table 3: Mechanism of death

Mechanism of death	Number of patients	Percentage of patients
Shock	19	38
Haemorrhage	21	42
Infection	10	20

DISCUSSION

The accuracy of abdominal physical examination is low and the level of consciousness produced by haemorrhages or by the association of abdominal trauma (AT) with traumatic brain injury and/or effects of central nervous system of previously consumed substances makes the adequate clinical examination even more difficult. Therefore, it is emphasized that the absence of abdominal pain or signs of peritoneal irritation on physical examination does not exclude the presence of abdominal organs injuries.⁷⁻⁹ Hence; the present retrospective study was undertaken for assessing the cases of blunt abdominal trauma from the records of forensic autopsies.

In the present study, a total of 50 patients were analysed. Mean age of the patients of the present study was 29.5 years. Majority of the patients belonged to the age group of less than 30 years. 38 percent of the patients belonged to the age group of 30 to 50 years. 58 percent of the patients of the present study were males while the remaining were females. Liver, intestine and spleen were the most common organs involved in the blunt abdominal trauma. Brown MA et al evaluated the accuracy of screening abdominal ultrasonography (US) in patients with blunt abdominal

trauma. Findings from 2,693 US examinations were evaluated and were positive in 145 of 172 patients with injuries (sensitivity, 84%) and 64 (89%) of 72 patients who ultimately underwent laparotomy with surgical repair of injuries. False-negative findings were retroperitoneal injury, bowel injury, and intraperitoneal solid organ injury without hemoperitoneum. No patient with false-negative findings died. Specificity of US was 96%, and overall accuracy was 96%. Positive predictive value was 61%, and negative predictive value was 99%. Abdominal US is useful in screening for injury in patients with blunt abdominal trauma, and its use represents a notable change in institutional practice.¹⁰

Trauma or injury has been defined as damage to the body caused by an exchange with environmental energy that is beyond the body's resilience. It is the most common cause of death for all individuals between the ages of 1 and 44 years. Globally, injury is the seventh leading cause of death, with 5.8 million deaths attributable to trauma. According to the World Health Organisation by the year 2020, trauma will become the first or second leading cause of death over all ages. Abdominal trauma has been traditionally classified as either blunt or penetrating.^{8,9}

In the present study, the most common mechanism of death was haemorrhage followed by shock and infection. Bordoni PHC et al evaluate the epidemiological profile of deaths due to abdominal trauma at the Forensic Medicine Institute of Belo Horizonte, MG - Brazil. They conducted a retrospective study of the reports of deaths due to abdominal trauma autopsied. They analysed 1.888 necropsy reports related to abdominal trauma. Penetrating trauma was more common than blunt one and gunshot wounds were more prevalent than stab wounds. Most of the individuals were male, brown-skinned, single and occupationally active. The median age was 34 years. The abdominal organs most injured in the penetrating trauma were the liver and the intestines, and in blunt trauma, the liver and the spleen. Homicide was the most prevalent circumstance of death, followed by traffic accidents, and almost half of the cases were referred to the Forensic Medicine Institute by a health unit. The blood alcohol test was positive in a third of the necropsies where it was performed. Cocaine and marijuana were the most commonly found substances in toxicology studies. In this sample, there was a predominance of penetrating abdominal trauma in young, brown and single men, the liver being the most injured organ.¹¹

CONCLUSION

From the above results, the authors conclude that young males are most common victims of blunt abdominal trauma.

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