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Dr. Pawan Kumar
Senior Resident, Department of
General Surgery Jawaharlal Nehru
Medical College and Hospital,
Bhagalpur, Bihar, India

Dr. Kumar Ratnesh
Associate Professor, Department of
General Surgery Jawaharlal Nehru
Medical College and Hospital,
Bhagalpur, Bihar, India

Dr. Pankaj Kumar
Assistant Professor, Department of
General Surgery Jawaharlal Nehru
Medical College and Hospital,
Bhagalpur, Bihar, India

To evaluate the incidence, cause and clinical presentation of the abdominal trauma patients in a trauma center

Dr. Pawan Kumar, Dr. Kumar Ratnesh and Dr. Pankaj Kumar

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Abstract

Background: With modernization, industrialization and motorization of the society there is a rapid increase in the incidence of abdominal trauma. Initial clinical assessment of the abdomen in trauma is accurate in less than 80 percent of cases. Hence; the present study was conducted with the aim of evaluating the incidence, cause and clinical presentation of the abdominal trauma patients in a trauma center.

Materials and methods: A total of 250 patients who were admitted to the emergency department were enrolled in the present study. Clinical examination of all the patients was carried out and findings were recorded. Demographic data was also recorded separately from record files.

Results: The incidence of patients with abdominal trauma was found to be 46 percent. Cause of abdominal trauma was fall from height in 33.04 percent of the cases, road traffic accident in 36.52 percent of the cases, violence in 20 percent of the cases and sports injury in 10.44 percent of the cases. In the present study, abdominal pain and abdominal distension were present in 80 percent and 51.3 percent of the cases, abdominal rigidity was present in 79 percent of the cases while shock and hematuria were found to be present in 36.65 and 10.43 percent of the cases.

Conclusion: Among young population, abdominal trauma is a frequent cause of morbidity and mortality.

Keywords: Abdominal trauma, Clinical presentation

Introduction

With modernization, industrialization and motorization of the society there is a rapid increase in the incidence of abdominal trauma. It is one of the most common injuries amongst those caused due to road traffic accidents. Injuries are reported to be amongst the top 10 killers around the world and abdominal injuries are amongst the top 3 of these overall cases. Majority of these abdominal injuries are of blunt character. Spleen and liver are found to be injured in majority of cases of abdominal trauma. Other injuries which may be seen include renal injuries, injuries to urinary bladder and urethra, pelvic fractures and vascular injuries^[1-3].

Initial clinical assessment of the abdomen in trauma is accurate in less than 80 percent of cases. Laparotomy should be done in a patient with multiple injuries where all clinical and other investigations have failed to exclude the abdomen as a source of shock syndrome. With the surge of advancing technology in the field of diagnostic modalities for abdominal trauma, conservative therapeutic approach has been increasing with decreased operative intervention especially for solid organ injuries^[4, 5]. Hence; the present study was conducted with the aim of evaluating the incidence, cause and clinical presentation of the abdominal trauma patients in a trauma center.

Materials & methods

The present study was conducted with the aim of evaluating the incidence, cause and clinical presentation of the abdominal trauma patients in a trauma center. Ethical approval was obtained from institutional ethical committee before the starting of the study. A total of 250 patients who were admitted to the emergency department were enrolled in the present study. Clinical examination of all the patients was carried out and findings were recorded. Demographic data was also recorded separately from record files. All the results were recorded in Microsoft excel sheet followed by analysis by SPSS software.

Corresponding Author:
Dr. Pawan Kumar
Senior Resident, Department of
General Surgery Jawaharlal Nehru
Medical College and Hospital,
Bhagalpur, Bihar, India

Results

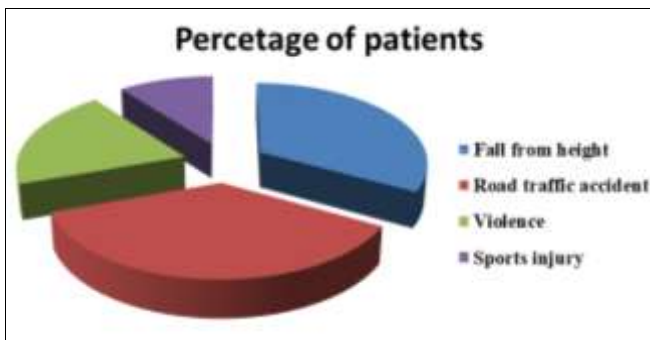
In the present study, 250 patients who reported to emergency department were analysed. Among these patients, the incidence of patients with abdominal trauma was found to be 46 percent. Mean age of the patients of the abdominal trauma was found to be 38.4 years. 68.7 percent of the patients were males while the remaining were females. Cause of abdominal trauma was fall from height in 33.04 percent of the cases, road traffic accident in 36.52 percent of the cases, violence in 20 percent of the cases and sports injury in 10.44 percent of the cases. In the present study, abdominal pain and abdominal distension were present in 80 percent and 51.3 percent of the cases, abdominal rigidity was present in 79 percent of the cases while shock and hematuria were found to be present in 36.65 and 10.43 percent of the cases. No associated injuries were detected in 53.91 percent of the cases while chest involvement occurred in 22.61 percent of the cases.

Table 1: Incidence of abdominal trauma

Parameter	Number of patients	Percentage of patients
Patients with abdominal trauma	115	46

Table 2: Demographic profile of patients with abdominal trauma

Parameter	Number of patients	Percentage of patients
Age group (years)	Less than 30	23
	30 to 40	38
	41 to 50	37
	More than 50	17
Gender	Males	79
	Females	36



Graph 1: Cause of abdominal trauma

Table 3: Clinical presentation

Clinical presentation	Number of patients	Percentage of patients
Abdominal pain	92	80
Abdominal distension	59	51.3
Hematuria	12	10.43
Abdominal rigidity	79	68.7
Shock	41	35.65

Table 4: Associated injuries

Associated injuries	Number of patients	Percentage of patients
Head	12	10.43
Chest	26	22.61
Extremities	10	8.70
Pelvis	12	10.43
No associated injuries	62	53.91

Discussion

The abdomen is the third most commonly injured body region, with injuries requiring operation in about 20% of civilian trauma victims. Abdominal injuries can be particularly challenging because it is often difficult to assess the intra-abdominal pathology in the multiple injured victim. There is also masking of abdominal injuries by associated conditions like head injuries, fractures, alcoholism, drug abuse, shock etc. The factors like altered mental status of the patients makes it necessary that the management should not be based entirely on the basis of clinical examination and rather should be assisted by imaging like FAST (Focused assessment of sonography in trauma) and computed tomography (CT). The management needs multidisciplinary approach. In spite of the best techniques and advances in diagnostic and supportive care, the morbidity and mortality remains at large^[6-10]. Hence; the present study was conducted with the aim of evaluating the incidence, cause and clinical presentation of the abdominal trauma patients in a trauma center. In the present study, the incidence of patients with abdominal trauma was found to be 46 percent. Mean age of the patients of the abdominal trauma was found to be 38.4 years. 68.7 percent of the patients were males while the remaining were females. Cause of abdominal trauma was fall from height in 33.04 percent of the cases, road traffic accident in 36.52 percent of the cases, violence in 20 percent of the cases and sports injury in 10.44 percent of the cases. Mehta N *et al.* evaluated 71 cases of blunt abdominal trauma (BAT) with stress on early diagnosis and management, increase use of non-operative management, and time of presentation of patients. A retrospective analysis of 71 patients of BAT was done. Motor vehicle accident (53%) was the most common mechanism of injury. Spleen (53%) was the commonest organ injured and the most common surgery performed was splenectomy (30%). Most common extra abdominal injury was rib fracture in 20%. Mortality rate was 4%. Wound sepsis (13%) was the commonest complication. Initial resuscitation measures, thorough clinical examination and correct diagnosis forms the most vital part of management. 70% of splenic, liver and renal injuries can be managed conservatively whereas hollow organs need laparotomy in most of the cases^[11].

In the present study, abdominal pain and abdominal distension were present in 80 percent and 51.3 percent of the cases, abdominal rigidity was present in 79 percent of the cases while shock and hematuria were found to be present in 36.65 and 10.43 percent of the cases. No associated injuries were detected in 53.91 percent of the cases while chest involvement occurred in 22.61 percent of the cases. Arumugam S *et al.* evaluated the incidence, causes, clinical presentation, and outcome of the abdominal trauma patients in a newly established trauma center. Liver (36%), spleen (32%) and kidney (18%) were most common injured organs. The common associated extra-abdominal injuries included chest (35%), musculoskeletal (32%), and head injury (24%). Wound infection (3.8%), pneumonia (3%), and urinary tract infection (1.4%) were the frequently observed complications. The overall mortality was 8.3% and late mortality was observed in 2.3% cases mainly due to severe head injury and sepsis. The predictors of mortality were head injury, ISS, need for blood transfusion, and serum lactate. Abdominal trauma is a frequent diagnosis in multiple trauma and the presence of extra-abdominal injuries and sepsis has a significant impact on the outcome.¹² Mareedu AK assessed the incidence of blunt & penetrating abdominal injuries, incidence of injury to different intra-abdominal organs and its aetiology, the importance of the various investigations, the mode

of treatment offered, to study the postoperative complications. Pain abdomen was the commonest symptom while generalized tenderness was the commonest physical sign. Accuracy rate of plain X- ray erect abdomen was 88.9% and ultrasound abdomen was 96.15%. Commonest organ involved was spleen (40.9%) followed by liver (22.7%), small intestine (18.2%), mesentery (13.6%) of total intra-abdominal injuries in blunt abdominal trauma and colon and rectum (20%) was the most common organ involved in penetrating trauma. 7.5% had associated chest injury with fracture ribs. Wound infection was the commonest complication^[13].

Conclusion

From the above results, the authors concluded that among young population, abdominal trauma is a frequent cause of morbidity and mortality. Hence; initial resuscitation measures and correct diagnosis forms the most vital part of blunt abdominal trauma management.

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