



ORIGINAL RESEARCH

Patterns of Abdominal Injuries in Trauma Patients: An observational study

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ABSTRACT

Background: Assessment of Incidence and Patterns of Abdominal Injuries in Trauma Patients.

Materials & methods: A total of 50 patients were enrolled. Initial assessment of ABCDE (airway and cervical spine control; breathing; circulation; dysfunction of the central nervous system; and exposure), followed by regional examination of head and neck; chest; abdomen; extremities; and back. All data were entered and coded using Microsoft Excel and analysed with Statistical Package for SPSS software.

Results: Mean age of the patients was 43.5 years. Out of 50 patients, 31 patients were males while the remaining 19 were females. Out of 50 patients, 39 patients had blunt trauma while 11 patients had penetrating trauma. Mortality was seen in 8 patients (16 percent). Morality was seen in 6 patients with blunt trauma while 2 patients with blunt trauma.

Conclusion: The challenge among patients with abdominal trauma will be to refine the diagnosis of intra abdominal trauma to allow for swift recognition of those injuries that require surgical intervention.

Key words: Abdominal, Trauma, Injuries

INTRODUCTION

Trauma is the leading cause of death in those younger than 45 years in the United States. Intra-abdominal injuries (any injury to intraperitoneal and retroperitoneal organs including the presence of hemoperitoneum) following blunt (80%) or penetrating (20%) trauma cause a substantial proportion of traumatic deaths. Motor vehicle collisions and falls are the most common causes of blunt trauma, whereas gunshot and stab wounds are the most common causes of penetrating trauma.¹⁻³

Penetrating abdominal trauma has a relatively straightforward diagnostic evaluation, but blunt abdominal trauma often presents a substantial diagnostic challenge. Patients with severe injuries and ongoing hemorrhage require immediate recognition and treatment (laparotomy or angiographic embolization). Patients with seemingly less severe trauma or no apparent injury on initial examination may still have clinically significant intra-abdominal injuries, and delayed diagnosis of such injuries is an important cause of preventable morbidity and mortality.^{4,5}

Abdominal trauma, especially those caused by blunt force is a leading cause of morbidity and mortality in all age groups, but it is one of the most challenging conditions emergency department physicians encounter because of varied presentations. The

difference in severity between presenting symptoms and actual injuries in a significant number of cases makes the rapid diagnosis and management for such patients more complex.⁶ Hence; the present study was conducted for assessing the Incidence and Patterns of Abdominal Injuries in Trauma Patients

MATERIALS & METHODS

The present study was conducted for assessing the Incidence and Patterns of Abdominal Injuries in Trauma Patients. A total of 50 patients were enrolled. Initial assessment of ABCDE (airway and cervical spine control; breathing; circulation; dysfunction of the central nervous system; and exposure), followed by regional examination of head and neck; chest; abdomen; extremities; and back. An initial determination of abdominal trauma type was made by thorough physical examination. Patient condition was next classified as either stable or unstable. Finally, a plan was developed for additional evaluation and management. Laboratory investigations: These included complete blood count, blood typing, and cross matching and coagulation profile. Radiographic investigations: Plain chest X-ray, pelviabdominal ultrasound, and, in some stable cases, computed tomography. All data were entered and coded using Microsoft Excel and analysed with Statistical Package for SPSS software.

RESULTS

Mean age of the patients was 43.5 years. Out of 50 patients, 31 patients were males while the remaining 19 were females. Out of 50 patients, 39 patients had blunt trauma while 11 patients had penetrating trauma. Mortality was seen in 8 patients (16 percent). Morality was seen in 6 patients with blunt trauma while 2 patients with blunt trauma.

Table 1: Variables

Variables	Value
Mean age (years)	43.5
Males (n)	31
Females (n)	19
Blunt abdominal trauma (n)	39
Penetrating trauma (n)	11

DISCUSSION

The management of the patient with blunt abdominal trauma remains in continuous flux. The emergency physician cannot place undue reliance on physical examination, and plain radiography of the abdomen rarely adds to patient care. Laboratory tests, particularly elevated liver function tests or a large base deficit, may increase our suspicion for intraabdominal trauma. However, normal blood tests should never prevent further investigation as warranted by mechanism of injury or clinical picture. Ultrasound and laparoscopy are two diagnostic interventions that have been more extensively studied abroad.⁶⁻⁹

Mean age of the patients was 43.5 years. Out of 50 patients, 31 patients were males while the remaining 19 were females. Out of 50 patients, 39 patients had blunt trauma while 11 patients had penetrating trauma. Mortality was seen in 8 patients (16 percent). Morality was seen in 6 patients with blunt trauma while 2 patients with blunt trauma. Karamercan MA et al determined the relationships between microscopic hematuria and extrarenal intra-abdominal organ injury. After verifying their model, lethal and maximal sublethal intensity of impact energy determined in the rats. Animals allocated into six sublethal impact energy groups. BAT was induced by dropping a standard mass from variable heights. After 2 hours of examining period, macroscopic laparotomy findings, histopathological liver, spleen and renal injury grades, and microscopic hematuria levels were recorded in these six groups. While the trauma intensity increase severity of the histopathological injury increases for all organs. Although there was a significant correlation between microscopic hematuria and trauma intensity, they could not show same relationship between microscopic hematuria and histopathological organ injury. On the other hand, microscopic hematuria was correlated with the macroscopic laparotomy findings. Microscopic hematuria could serve as a predictor of the severity of trauma and intra-abdominal organ injury.¹⁰

Davis, J. J et al analysed the records of 437 patients with blunt abdominal trauma. There was an 80% increase in the incidence of blunt abdominal trauma when compared with the preceding 15-year experience. Forty-three per cent of all the patients presented with no specific complaint or sign of injury. Blunt abdominal injury was usually diagnosed preoperatively using conventional methods including history, physical examination, and routine laboratory tests and x-rays. Abdominal paracentesis via a Potter needle had an 86% accuracy. The incidence and management of specific organ injuries with associated morbidity and mortality have been discussed. Mortality and morbidity continue to be significant in blunt abdominal trauma. Isolated abdominal injuries rarely (5%) resulted in death, even though abdominal injuries accounted for 41% of all deaths. A high index of suspicion and an adequate observation period therefore are mandatory for proper care of patients subjected to blunt trauma.¹¹ Gad MA et al determined the incidence and patterns of abdominal injuries in trauma patients. They classified and identified the incidence and subtype of abdominal injuries and associated trauma, and identified variables related to morbidity and mortality. Abdominal trauma was present in 248 of 300 cases; 172 patients with blunt abdominal trauma and 76 with penetrating. The most frequent type of abdominal trauma was blunt trauma; its most common cause was motor vehicle accident. Among patients with penetrating abdominal trauma, the most common cause was stabbing. Most abdominal trauma patients presented with other injuries, especially patients with blunt abdominal trauma. Mortality was higher among penetrating abdominal trauma patients. Type of abdominal trauma, associated injuries, and Revised Trauma Score are independent risk factors for mortality in abdominal trauma patients.¹²

CONCLUSION

The challenge among patients with abdominal trauma will be to refine the diagnosis of intraabdominal trauma to allow for swift recognition of those injuries that require surgical intervention.

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