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Reserach Article

ASSESSMENT OF BLUNT TRAUMA ABDOMEN IN A TERTIARY HOSPITAL: A CROSS SECTIONAL STUDY

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A R T I C L E I N F O

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Blunt abdominal trauma, road traffic accident, abdominal injuries, hemorrhage.

A B S T R A C T

Introduction: With modernization, industrialization and motorization of the society there is a rapid increase in the incidence of Blunt Abdominal trauma (BAT). It is one of the most common injuries amongst those caused due to road traffic accidents. The present study was conducted to assess factors associated with blunt abdominal injuries, their diagnosis and management.

Materials and methods: The present study was conducted among 70 cases of blunt abdominal trauma admitted under Department of Surgery or emergency department, during the period of February 2018 to July 2018.

Results: After assessment, we observed that majority of the cases presented with Road traffic accidents (RTA) (45.71%), followed by fall from height (FFH) (28.57%), Physical Assault (PA) (17.14%) and Hit by blunt objects (HBO) (8.57%). We assessed nature of injury among study subjects.

Conclusions: Road traffic accidents forms the most common mode of injury, hence measures should be taken to prevent these accidents and care of the victims at the accident site. A thorough and repeated clinical examination and appropriate diagnostic investigations lead to successful treatment in these patients.

INTRODUCTION

The incidence of abdominal trauma makes trauma as one of the leading causes of acute abdomen in the day to day surgical practice. It accounts for the majority (80%) of abdominal injuries seen in emergency department1, and is responsible for substantial morbidity and mortality. Motor vehicle accidents and urban violence respectively, are the leading causes of blunt and penetrating trauma to this area of the body.

With modernization, industrialization and motorization of the society there is a rapid increase in the incidence of Blunt Abdominal trauma (BAT). It is one of the most common injuries amongst those caused due to road traffic accidents1. 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 (> 80%) are of blunt character. Spleen and liver are found to be injured in majority of cases of BAT. Other injuries which may be seen include renal injuries, injuries to urinary bladder and urethra, pelvic fractures and vascular injuries. Blunt abdominal trauma generally leads to high mortality, according to various series reported. Rapid resuscitation is necessary to save the unstable but salvageable patient with abdominal trauma. Accurate diagnosis and avoidance of needless surgery is all important.

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Accidents account for 75 to 80% of blunt abdominal trauma2. Blunt injury of abdomen can also occur as a result of fall from height, assault with blunt objects, industrial mishaps, sport injuries, bomb blast and fall from riding bicycle3. Blunt abdominal trauma is usually not obvious hence, often missed, unless, repeatedly looked for. Delay in diagnosis and inadequate treatment of the abdominal injuries may prove fatal. The status and co-existing injuries which may distract the attending surgeon from properly assessing difficulty in diagnosis arises from the factors like delay in reaching hospital, altered mental status of the patient and co-existing injuries making the diagnosis difficult

The present study was conducted to assess factors associated with blunt abdominal injuries, their diagnosis and management.

METHODS

The present study was conducted among 70 cases of blunt abdominal trauma admitted under Department of Surgery or emergency department, during the period of February 2018 to July 2018. All patients were immediately attended and history, emergency medical care was given. Subsequent management either operative or non-operative was done according to clinic-radiological findings.

Inclusion criteria: Patients of age group 18 to 80 years and all patients of polytrauma/abdominal trauma were included in the present study

Exclusion criteria: Patients who are < 18 years and > 80 years of age and patients with associated head injury with altered level of consciousness, with associated infections were excluded from the present study.

The data was recorded in pre-designed, pre-tested and semi-structured questionnaire. Then it was entered in Microsoft Excel Worksheet and analyzed using proportions.

RESULTS

The present study was conducted among 70 cases presented to emergency department with abdominal injuries. After provision of emergency medical care, the cases were evaluated. Their demographic history, clinical findings were noted.

Majority of the study subjects were males (70%), and females represented 30% of the study sample. (Figure 1). Majority of the study subjects belonged to 26-35 years (40%), followed by 36-45 years (31.42%), 18-25 years (12.85%). (Figure 2)

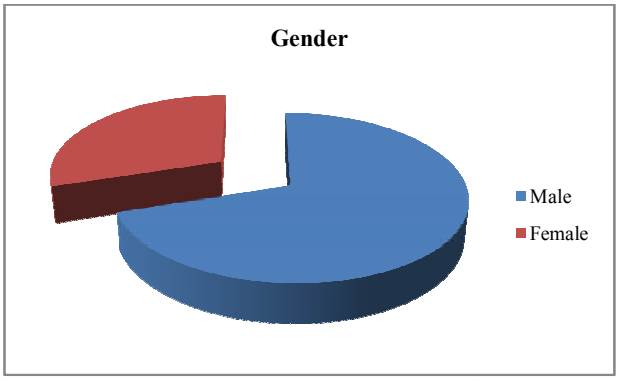

Figure 1 Distribution of study subjects according to their gender

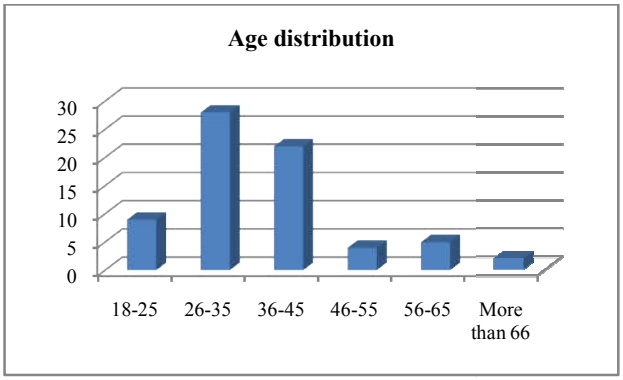

Figure 2 Distribution of study subjects according to their age group

After assessment, we observed that majority of the cases presented with Road traffic accidents (RTA) (45.71%), followed by fall from height (FFH) (28.57%), Physical Assault (PA) (17.14%) and Hit by blunt objects (HBO) (8.57%). (Table 1). We assessed nature of injury among study subjects. We observed that Blunt trauma represented 70%, followed by Penetrating trauma among 30% cases. (Table 2)

Table 1 Distribution of study subjects according to nature of trauma

Age group	Number of patients	Percentage
Blunt trauma	49	70%
Penetrating trauma	21	30%
Total	70	100%

Table 2 Distribution of study subjects according to nature of injury

Nature of injury	No. of cases	Percentage
Road traffic accidents (RTA)	32	45.71%
Fall from height (FFH)	20	28.57%
Physical Assault (PA)	12	17.14%
Hit by blunt objects (HBO)	6	8.57%
Total	70	100%

In the present study we assessed organ involved. Spleen was involved in 37.14% cases, Liver was involved in 20% cases, Ileum was involved in 14.28%, Jejunum was involved in 11.42% cases, Stomach was involved in 2.85% cases, Mesentery was involved in 1.42% cases and IVC was involved in 1.42% cases.(Table 3)

Table 3 Distribution of study subjects according to nature of injury

Organ injured	Number of patients	Percentage
Spleen	26	37.14%
Liver	14	20%
Ileum	10	14.28%
Jejunum	8	11.42%
Stomach	2	2.85%
Mesentery	1	1.42%
IVC	1	1.42%

In the present study, various surgical procedures were used in management of cases with blunt abdominal trauma. Splenectomy was done in 31.42%, Splenorrhaphy was done in 5.71%, Packing for hemostasis with gel foam(liver) was done in 2.85%, Hepatorrhaphy was done in 17.14%, Primary repair (Ileum) was done in 5.71% cases, Primary repair (Jejunum) was done in 4.28% cases, Primary repair (Stomach) was done in 2.85% cases, Resection and Anastomosis (Jejunum) was done in 7.14% cases, Resection and Anastomosis (Ileum) was done in 8.57% cases, Hollow viscous perforation closure was done in 25.71% cases, IVC repair was done in 1.42% cases.(Table 4)

Table 4 Distribution of study subjects according to management

Management	Number of patients	Percentage
Splenectomy	22	31.42%
Splenorrhaphy	4	5.71%
Packing for hemostasis with gel foam(liver)	2	2.85%
Hepatorrhaphy	12	17.14%
Primary repair (Ileum)	4	5.71%
Primary repair (Jejunum)	3	4.28%
Primary repair (Stomach)	2	2.85%
Resection and Anastomosis (Jejunum)	5	7.14%
Resection and Anastomosis (Ileum)	6	8.57%
Hollow viscous perforation closure	18	25.71%
IVC repair	1	1.42%

DISCUSSION

The present study was conducted among 70 cases presented to emergency department with abdominal injuries. After provision of emergency medical care, the cases were evaluated. Their demographic history, clinical findings were noted.

Demographic features

Majority of the study subjects were males (70%), and females represented 30% of the study sample. Majority of the study subjects belonged to 26-35 years (40%), followed by 36-45 years (31.42%), 18-25 years (12.85%). The age incidence was relatively similar with the results found by Singh RP *et al* where average age involved were 25.1 year. According to the study by Dhaded and Malra where 38.3% cases were in the age group of 21-30 years and study by Singh M *et al* concluded the peak incidence was observed in the age group of 20-29 years comprising 38.18% of cases.

Assessment

After assessment, we observed that majority of the cases presented with Road traffic accidents (RTA) (45.71%), followed by fall from height (FFH) (28.57%), Physical Assault (PA) (17.14%) and Hit by blunt objects (HBO) (8.57%).

Dhaded and Malra in their study observed the most common cause was road traffic accidents accounting (66.6%). The results were almost similar to the study by Singh S *et al* where most common cause of blunt trauma abdomen was road traffic accident (60%), fall from height accounting (25%), hit by blunt object (8%) and physical assault (7%).

We assessed nature of injury among study subjects. We observed that Blunt trauma represented 70%, followed by Penetrating trauma among 30% cases. In the present study we assessed organ involved. Spleen was involved in 37.14% cases, Liver was involved in 20% cases, Ileum was involved in 14.28%, Jejunum was involved in 11.42% cases, Stomach was involved in 2.85% cases, Mesentery was involved in 1.42% cases and IVC was involved in 1.42% cases. This study results are almost similar to the study of Yogish *et al* where, spleen was involved in 46.6 % cases, liver was involved in 28.3% cases and also, study of Dhaded and Malra where spleen was involved in 26.6% cases and liver was involved in 23.3 % cases.

In the present study, various surgical procedures were used in management of cases with blunt abdominal trauma. Splenectomy was done in 31.42%, Splenorrhaphy was done in 5.71%, Packing for hemostasis with gel foam(liver) was done in 2.85%, Hepatorrhaphy was done in 17.14%, Primary repair (Ileum) was done in 5.71% cases, Primary repair (Jejunum) was done in 4.28% cases, Primary repair (Stomach) was done in 2.85% cases, Resection and Anastomosis (Jejunum) was done in 7.14% cases, Resection and Anastomosis (Ileum) was done in 8.57% cases, Hollow viscous perforation closure was done in 25.71% cases, IVC repair was done in 1.42% cases.

In the study conducted by Rahman S *et al*, 23 cases had hollow viscus perforation out of which all were detected by erect x-ray abdomen, so decision to operate was taken immediately. Hollow viscous perforation closure (36.67% of operative management) was the most common procedure performed followed by splenectomy (23.33% of operative management). Small bowel was the third most common organ injured 22 (22%). A study conducted by Dhaded and Malra also had similar findings for small bowel injury (30%).

CONCLUSION

Road traffic accidents forms the most common mode of injury, hence measures should be taken to prevent these accidents and care of the victims at the accident site. A thorough and repeated clinical examination and appropriate diagnostic investigations lead to successful treatment in these patients.

Early transportation, rigorous measures of resuscitation, early diagnosis and decision for surgery, good trauma centers, good radiological and blood bank facilities, careful exploration and perfect technique of surgery and meticulous post operative follow up will all aid in reducing the mortality.

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