



## A CLINICAL STUDY OF BLUNT INJURY ABDOMEN AND MANAGEMENT

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**ABSTRACT**

**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 department<sup>1</sup>, and is responsible for substantial morbidity and mortality.

Road traffic accidents and urban violence respectively, are the leading causes of blunt and penetrating trauma to this area of the body.

**AIM:** This study was designed to determine the incidence and pattern of abdominal injury in trauma patients.

**MATERIALS AND METHODS:** This clinical study was carried out on patients admitted in trauma care unit Santhiram Medical College & general hospital, Nandyal

**Inclusion criteria:** Patients admitted with history of blunt trauma abdomen due to Road traffic accidents, accidental falls, trauma by blunt objects and assault.

**RESULTS:** In our study, road traffic accident were the most common cause of blunt injury abdomen. Predominately males. Most common cause of death is septicemia

**CONCLUSION:** Blunt trauma to abdomen is on rise due to excessive use of motor vehicles.

It poses a therapeutic and diagnostic dilemma for the attending surgeon due to wide range of clinical manifestations ranging from no early physical findings to progression to shock.

**KEYWORDS :** Blunt Injury Abdomen, road Traffic Accident, mortality

**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 department<sup>1</sup>, and is responsible for substantial morbidity and mortality.

Road traffic accidents and urban violence respectively, are the leading causes of blunt and penetrating trauma to this area of the body.

Rapid resuscitation is necessary to save the unstable but salvageable patient with abdominal trauma. Accurate diagnosis and avoidance of needless surgery is all important.

As the surgeon directs these activities he must seek the answers to two questions. First, does the patient need an abdominal operation? Second, will the patient tolerate the time required for diagnostic manoeuvres before surgery is performed? However, most avoidable deaths result from failure to resuscitate and operate on surgically correctable injuries.

The diagnosis and decision for surgery depends mainly on careful and repeated clinical examination with the basic investigations. The management must be individualized. A systemic approach to preoperative diagnosis and preparation. Intra operative inspection, decision, post operative care and observation for complications is essential for the successful management of individual cases.

**AIMS**

- This study was designed to determine the incidence and pattern of abdominal injury in trauma patients.
- To study nature of blunt abdominal trauma
- To study clinical presentation of different organ injuries
- To study management : non-operative and operative
- To study organs affected in blunt abdominal trauma and management of different organ injuries on laparotomy
- To study post operative complications

- To study morbidity & mortality

**METHODOLOGY****Source of Data:**

This clinical study was carried out on patients admitted in trauma care unit Santhiram Medical College & general hospital, Nandyal. 50 consecutive cases were taken.

**Inclusion criteria**

Patients admitted with history of blunt trauma abdomen due to Road traffic accidents, accidental falls, trauma by blunt objects and assault.

**Exclusion criteria**

- Associated Orthopaedic Injuries
- Associated With Severe Head Injury
- Associated With Severe Chest Injury
- pregnancy

**RESULTS**

In the present study, maximum of cases were in 21-30 age group (30%) followed by 31-40 (24%). Average age was 25.1 years. Range was from 5 to 60 years. (figure 2)

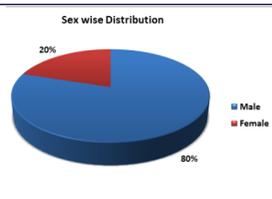
In the present studies, 40 (80%) patients were male 10 (20%) were female. Male to female ratio was 4:1. (figure 1)

In this study, most common cause of blunt trauma to abdomen was road traffic accidents 34 (68%), second common cause was fall from height (16%). Other causes were hit by blunt objects and assaults.

In the present study, the most common symptom was pain abdomen (98%). Next symptom was followed by distension of abdomen (50%).

In the present study 42 (84%) patients had tenderness of abdomen at time of admission.

Another common sign was guarding and rigidity was present in 40% cases. Bowel sounds absent in 30% cases.



**Figure 1;sex wise distribution**

In present study, ultra sound abdomen was done in 48 cases. Only in 7 cases negative findings were found on ultrasound. X-ray erect abdomen was done in 40 cases. In that, 17 cases had pneumoperitoneum suggestive of hollow viscus injury.

In this study, maximum number of patients (20) were brought to the hospital between 5-10 hours after the accident, only 6% were brought within 5 hrs. 34% were between 10-24hrs and another 20% were brought after 24hrs.

In the present study, 34 out of 50 cases were managed surgically. 2 cases were operated within 3 hours of admission. 1 case was operated within 3-6 hours after admission. 2 cases were operated within 12-24 hour after admission. 2 cases were operated more than 24 hours after admission. Majority of cases (27) were operated within 6-12 hours.

In the present study, duration of the stay ranged from 6-34 days. maximum number of cases (25) 50% stayed for below 10 days. 14 cases stayed for 11-20days. 4 cases stayed for >20 days.

In this study, liver was the most common organ involved in 12 of cases, Spleen was the second most common organ injured in 8 of cases. Small bowel was injured in 7 cases. Mesentery was injured in 6 cases. Combined injuries in 9 cases.

Out of 50 cases 36 (72%) were managed surgically and 14 (28%) managed conservatively.

In the present study, wound infection was the most common complication after surgery seen in 10 (20%) cases. Pneumonia developed in 8 (16%).

In this study, septicaemia was the most common cause of death (5 cases). Remaining 2 patients died of ARDS and sudden cardiac arrest.(figure 3)

**DISCUSSION**

Blunt abdominal trauma is the leading cause of morbidity and mortality in all age groups. Identification of serious intra abdominal pathology is often challenging.

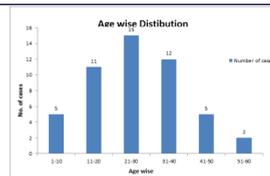
Young males, most of those aged 20-30 years have been reported to be the most frequent victims.

In the present study, 80 (80%) were males and 20 (20%) were females.

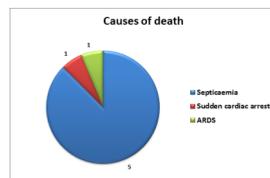
In this study male to female ratio was 4:1. Male to female ratio was same compared to other studies like Mohammed et al, Lone et al and Tripathi et al (1991) reported a ratio of 4.4:1. and Davis at al reported 70% males are affected.

The most common cause of blunt injury abdomen is road traffic accidents (68%) which are comparable to most other studies. Mohammed et al study showed 62.8% of motor vehicle accidents were the cause of blunt trauma abdomen. Mousami et al study showed 70,9% of RTAs and 5% fall from height. Mohapatra et al also reported 62% cases of blunt injury abdomen were due to RTA. Another study by Curie et al also reported 58.6% cases of blunt injury to abdomen were due to RTAs. Fall from height was found to be the second most common cause (16.6%) Other important causes were hit by blunt objects in 11% and assault 3.3%. Amuthan et al reported 68% RTAs ,22% fall from height, 6% hit by blunt objects, 4% assault.

In the present study the most common symptom was pain abdomen (98%). Abdominal distension was the second most common symptom (50%) followed by vomiting and Haematuria. Another study by Tripathi et al also reported pain abdomen in 91% of their patients. Amuthan et al reported pain abdomen in 94% of patients.(figure 4)



**Figure 2:age wise distribution**



**Figure 3:cause of death**



**Figure 4:Pain abdomen**

Mean duration of hospital stay in present study was little higher as compared to other studies (Mohapatra et al) which reported mean hospital stay of 7.8% days for non operated group and 10.4 days for operative group. Maximum duration of hospital stay in his study was 34 days for a patient who had anastomotic leak

Present study is comparable to study of MOUSAMI ET AL showed liver was the commonest organ involved (62.27%) and spleen 30.91% ,small intestine 18.8% and kidney 18.8% cases. Another study Davis et al which showed 16.47% of liver injuries, out of which 14% underwent laparotomy and suturing was done in all cases.

Out of 50 cases in present study 68% were managed surgically and 32% were managed conservatively. This study is comparable to Mohapatra et al who reported 39% laparotomy rates in their series.

Present study is comparable to a study by Jolly et al<sup>55</sup> which showed wound infection in 14% of the cases. Another study by Davis et al showed wound infection as a complication in 15% of the cases. Amuthan et al showed 50% of wound infection

This study was compared to another study by Jolly et al<sup>55</sup> which showed 10% mortality in their study with septicaemic shock the most common cause of death. Another study by Davis et al showed 15% mortality with septicaemia the most common cause of death. Amuthan et al showed 10% mortality with septicaemia 5%.

**CONCLUSION**

- Blunt trauma to abdomen is on rise due to excessive use of motor vehicles.
- It poses a therapeutic and diagnostic dilemma for the attending surgeon due to wide range of clinical manifestations ranging from no early physical findings to progression to shock.
- Hence, the trauma surgeon should rely on his physical findings in association with the use of modalities such as X-ray abdomen, USG abdomen, and abdominal paracentesis. Hollow viscus perforations are relatively easy to pick on X-ray.
- However, solid organ injuries are sometimes difficult to diagnose due to restricted use of modern amenities such as CT scan in India.
- In Present Study We Concluded That Operative Procedure Was The Best Method Of Treatment Option If Patient Is Unstable And Early Laparotomy Decreases The Mortality In Blunt Trauma Patients.

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