



## Study of Blunt Abdominal Trauma-200 Cases

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### Abstract

*Clinical presentation & management was evaluated in prospective randomized trial in 200 cases. Males were (84%) and females were (16%), among study group, age group (21-40) years, were commonly involved, the (88%) patients presented with abdominal pain and (72%) presented with rigidity. X ray chest and abdomen and sonography forms important initial investigations Most common injured organ were Spleen (38%), liver (30%), bowel (18%), kidney (6%), mesentery (4%) gall bladder (2%). In this study clinical presentation and its conservative versus operative management was also studied.*

### INTRODUCTION

Blunt abdominal trauma is one of the most common injuries among various injuries caused due to road traffic accidents<sup>i</sup>.

The rapid increase in number of motor vehicles and its aftermath has caused rapid increase in number of victims of blunt abdominal trauma<sup>ii</sup>. Motor vehicles accidents account for 75 to 80% of blunt abdominal trauma. Blunt injury of abdomen is also a result of fall from height, assault with blunt Objects, industrial mishaps, sport injuries, bomb blast and fall from riding bicycle. Blunt abdominal trauma is usually not obvious.

Hence, often missed, unless, repeatedly looked for. Due to the delay in diagnosis and inadequate treatment of the abdominal injuries, most of the cases are fatal. The knowledge in the management of blunt abdominal trauma has progressively increasing. In spite of the best techniques and advances in diagnostics and supportive care, the morbidity and mortality remains at large. The reason for this could be due to the interval between trauma and hospitalization, delay in diagnosis, postoperative complications and associated trauma especially head and thorax.

In view of increasing number of vehicles and consequently road traffic accidents this dissertations has been chosen to study in the cases of blunt abdominal trauma with reference to Patients presenting to our medical college and hospital.

### AIMS AND OBJECTIVE

1. To correlate various epidemiological factors associated with blunt abdominal trauma 200cases
2. To study clinical profile of blunt abdominal trauma
3. To study management of blunt abdomen trauma

### Inclusion Criteria

1. Blunt abdominal trauma
2. Patient willing to participate in study

### Exclusion Criteria

1. Pregnant woman
2. Patient not willing to participate in study

### RESULTS AND DISCUSSION

Total 200 patients were observed in study period JAN2012 TO SEP 2013 who were admitted in our medical college.

In 200 cases 168 were males accounting for 84%study populations and 32 were females accounting for 16% of population which clearly indicate that males outnumbered females

In abdominal trauma (Table 1).In this study majority belongs to 21-40yrs of age accounting for total 52% cases so concluding this more than

50% cases of abdominal trauma are of productive age group And it is also observed incidence of blunt abdominal trauma is least in age group of 51-60yrs ie.2%.(Table 2).This is compared to Davis et al<sup>11</sup>.as young people's involved in both studies in road traffic accidents.

When we look for mode of injury it is not surprising to know that total 104 cases observed were due to road traffic accidents that accounts for 52% of study of populations.(Table3).

It also means that more than 50% of cases are preventable with proper traffic rules and regulations and safe driving norms. A part from this, Fall from height and assault are also major contributor in mode of injury These observation in our study are comparable with the study Khanna et al<sup>35</sup>.which shows 57% of the study population had road traffic accidents and in our study it was 52%.

Among all these cases 176 patients presented with abdominal pain and 144 patients presented with abdominal guarding and rigidity that contribute 88% and 72% of study population respectively as a presenting sign and symptoms. The sign and symptoms are misleading in blunt trauma abdomen and masked by concomitant head injury chest injury and alcohol consumption. Retroperitoneal injuries were missed in ultrasound of<sup>1</sup>abdomen.

In our study it is also observed that only 4% Patients presented with hematuria which is least common presenting symptom. (Table4)

Abdominal distension and shock were observed rather commonly. Davis et al study 43% pt had no specific complaints, no signs and symptoms of intraabdominal injury when they first presented to emergency .But 44% of those patient eventually required laparotomy .and 34% of patient had intrabdominal injuriesso this emphaiszes the importance of careful and continuing observation and repeated clinical examination of individuals with blunt abdominal trauma .Road traffic accidents being commonest mode off injury in abdominal trauma ,it is also associated with injuries over head, chest extremities and pelvis

Surprisingly in our study exclusive abdominal cases were 54%, that is , it is not associated with any other injury .Amongst remaining 46% patients,22% patient had chest injury being commonest associated injury. followed by head injury extremity fracture in descending order.Thoracic injury was in form of fracture ribs and heamothorax commonly.

X ray erect abdomen and ultrasound abdomen are amongst commonly used investigations for evaluation of abdominal trauma in our set up. We have done x ray abdomen erect in all patients out of which 32 patients showed gas under diaphragm .out of 36 perforations detected at laparotomy .so the sensitivity of plane xray abdomen in detecting pneumoperitoneum is 98% in present study compared to Davis et al study in which abdominal x ray was abnormal in 21% cases and in our study it was 16% .Along with x ray abdomen ultrasound evaluation of patient has been done .on ultrasound it is found that 74% that is 148 patient had organ

injury and spleen was most commonly injured organ injured in 38% of cases followed by liver 30% followed by kidney in 6% of patients, as compared to international series .

Ultrasound can be performed repeatedly and its excellent adjunct to physical examination imaging is essential in early decision making.

There is increase in trend toward conservative management if patient is heamodynamically stable. The grade of injury assessed by ultrasound and CECT. And most of the times manged conservatively in our study 58% patients that is 166 patient out of 200 patient manged conservatively, that includes minor lacerations and capsular tear which are difficult to diagnose clinically, but can be easily demonstrated in uktra sound and CECT and select for non operative management .However disadvantage of non operative management is missed injuries resulting in increased morbidity and mortality. In our study we need to underwent emergency laparotomy in 84 patient because of pneumoperitoneum and heamodynamicallyun stability amounting to 42% of study population,as our study proves spleen is commonest organ to be injured but obvious splenectomy is being commonly performed surgery in abdominal trauma,24patient underwent spenectomy amounting 28.57%.primary closure of perforation being second common surgery amounting to 23.80%, resection anastomosis mesenteric,tear suturing, hepatorrhapy, cholecystectomy, in descending order of their occurrence.

**Table 1.Age Incidence**

| AGE GROUP | NO OF CASES | PERCENTAGE |
|-----------|-------------|------------|
| 0-10      | 16          | 8          |
| 11-20     | 48          | 24         |
| 21-30     | 52          | 26         |
| 31-40     | 52          | 26         |
| 41-50     | 16          | 8          |
| 51-60     | 4           | 2          |
| 61-70     | 12          | 6          |

**Table 2 –Clinical Presentation**

| Presentation                   | No Of Cases | Percentage |
|--------------------------------|-------------|------------|
| Abdominal Pain                 | 176         | 88         |
| Abdominal Distension           | 104         | 52         |
| Hematuria                      | 8           | 4          |
| Abdominalguarding And Rigidity | 144         | 72         |
| Shock                          | 64          | 32         |

**Table 3.Associated Injuries**

| Associated Injury    | No. Of Cases | Percentage |
|----------------------|--------------|------------|
| Head                 | 20           | 10         |
| Chest                | 44           | 22         |
| Extremities          | 16           | 8          |
| Pelvis               | 16           | 8          |
| No Associated Injury | 108          | 54         |

**Table No 4. Organ Wise Injur**

| Organ           | Noof Cases Inour Study | Percentage | Cusheri | Davis | Cox | Khana |
|-----------------|------------------------|------------|---------|-------|-----|-------|
| Spleen          | 76                     | 38         | 25      | 25    | 46  | 26    |
| Liver           | 60                     | 30         | 15      | 16    | 33  | 37    |
| Kidney          | 12                     | 6          | -       | -     | -   | -     |
| Small Bowel     | 36                     | 18         | 9       | 8     | 8   | 57    |
| Mesentry        | 8                      | 04         | 5       | 4     | 10  | 47    |
| Retroperitoneum | 4                      | 02         | -       | -     | -   | -     |
| Gall Bladder    | 4                      | 02         | -       | -     | -   | -     |

**Table5. Operative Procedure**

| Procedure                      | No.Of Cases |
|--------------------------------|-------------|
| Splenectomy                    | 24          |
| Primary Closure Of Perforation | 20          |
| Resection And Anastomsis       | 16          |
| Mesenteric Tear Suturing       | 8           |
| Hepatorrhapy                   | 8           |
| Cholecystectomy                | 4           |

## CONCLUSIONS

Following conclusions drawn from our studies, f Blunt injury abdomen forms considerable load in our society. Most common age group is 21-40 yrs. Predominantly males are affected in large proportions.

Road traffic accidents form the most common mode of injury. so efforts should be made to bring road traffic regulations into strict action and traffic norms regulated .Well established trauma care centers should be established at every Taluka hospital. Measure for early transport of the patients from the accidents site to the trauma centres should be undertaken.

A thorough and repeated clinical examination and appropriate diagnostics investigations lead to successful treatment in these patients. Blunt injury abdomen is usually less obvious. Clinnical presentation is varied, something confusing.

Plain erect x ray abdomen is a valuable investigation taken for gastrointestinal injuries .Ultrasound examination gives a clear picture of solid organ injury and free fluid.

Significant number of cases will have associated injuries with blunt injury abdomen like head injury, thoracicinjury, extremity fractures.

Early diagnosis and repeated clinical examination and use of appropriate investigation forms the key in management of blunt abdominal trauma .Associated extra abdominal injuries like head, thoracic and orthopaedic injuries influenced the morbidity and mortality of the patients.

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