

STUDY OF INTESTINAL INJURIES FROM BLUNT ABDOMINAL TRAUMA IN TELANGANAChaitanya Kumar Jilla ¹, Bhargavi P ², Achi Venkata Sai Abhijit³

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ABSTRACT

Background: Blunt abdominal trauma usually is not obvious. Delay in proper diagnosis and inadequate treatment can be fatal. In spite of the availability of the latest techniques, the skepticism of physicians and surgeons results in morbidity and mortality in blunt abdominal trauma. **Materials and Methods:** 40 (forty) adult patients having blunt abdominal emergencies were treated in surgical emergencies with required radiological, biochemical, and surgical procedures. **Results:** 23 (57.5%) RTA was the highest mode of injury, followed by 7 (17.5%) falls from height, 32 (80%) perforations, and 12 (30%) serosal injuries. The associated organ injuries were 13 (32.5%) intra-abdominal and 4 (10%) extra-abdominal. In the major complicated patients, 12 (30%) survived and 3 (7%) died. **Conclusion:** It is proved that bowel and mesenteric injuries are significant and require immediate surgery. Proper, early diagnosis, efficient and skillful surgery can reduce the morbidity and mortality.

INTRODUCTION

Abdominal trauma is one of the commonly encountered injuries in surgical emergencies, and most of them are blunt in nature. Blunt abdominal trauma is mainly due to motor vehicle accidents and can also be because of assault, falls, sports injuries, or any kind of mishap.^[1]

Blunt abdominal trauma (BTA) is usually not obvious and can be often missed. Delay in diagnosis and inadequate treatment of the abdominal injuries can be fatal.^[2] In spite of progressively increasing the latest techniques and supportive care, the morbidity and mortality still remain at large due to a still suspicious surgical approach to abdominal blunt injuries, delayed recognition of significant intra-abdominal bleeding, and associated mismanagement of the patient.^[3] It is appropriate for physicians and surgeons to have healthy skepticism of new techniques that may end in mortality of patients.^[4] Hence, an attempt is made to evaluate the intestinal injuries from blunt abdominal trauma in both sexes of adult patients.

MATERIALS AND METHODS

40 (forty) adult patients aged between 20 years to 55 years admitted at the General Surgery department of

Mallareddy Medical College for Women, Mallareddy Vishwavidyapeeth, Suraram X Road, Quthbullapur Municipality, Jeedimetla, Hyderabad, Telangana-500055 were studied.

Inclusion Criteria: Adult patients of both sexes with abdominal trauma who had clinically stable parameters and gave their consent in writing for the study were selected for the study.

Exclusion Criteria: Patients with penetrating injury and patients with incomplete records who had a companion or relative did not give consent for study in writing were excluded.

Method: Patients having intestinal injury from blunt abdominal trauma, perforation or transection of bowel, or mesenteric injury resulting in ischemic bowel that required resection. Seromuscular injuries of the bowel wall requiring resection were admitted. Clinical features were examined in detail, paying particular attention to any concomitant injuries such as fractures of limbs, chest injuries, and head injuries. Complete blood examination (CBC, RBS, LFT, and RFT) were carried out; blood group was carried out; USG if necessary; MRI was also studied. A chest x-ray was also taken of every patient to rule out any adjacent injuries. ECG was also carried out before taking to laparotomy or abdominal drainage or secondary closure.

The Glasgow coma scale (GCS) is used to categorize patients' head trauma. There were three categories: mild (13-15), moderate (9-12), and severe (3 to 8). Every patient who had undergone surgery had received follow-up care for 30 days or until mortality. The duration of the study was from April 2024 to December 2025.

Statistical Analysis: Various study parameters, viz., mechanism of injuries, anatomical locations of injuries, associated organ injuries, and major complications, were classified with percentages. The statistical analysis was carried out using SPSS software. The ratio of male and female patients was 3:1.

RESULTS

Table 1: Study of mechanism of injury: 23 (57.5%) RTA, 7 (17.5%) Fall from height, 3 (7.5%) hit by blunt object, 5 (12.5%) Heavy object fell on abdomen, 2 (5%) other

Table 2: Anatomical locations of injuries: Duodenum 1 perforation, Duodenojejunal 4

perforations, 7 serosal injuries, 11 (Total). Jejunoleal 21 perforations, 2 serosal injuries, 23 (Total)

➤ Close Ileo-cecal junction, 3 perforations, 2 serosal injuries, 5 (Total).

➤ Scattered: 3 perforations, 1 serosal injury, 4 total, (Total = 32 perforations and 12 serosal injuries, 44 total)

Table 3: Study of associated organ injuries Intra abdominal

➤ 4 (10%) liver, 8 (20%) spleen, 1 (2.5%) others

➤ Extra abdominal: 3 (7.5%) skeletal system, 1 (2.5%) Facio-maxillary

Table 4: Study of major complication

➤ Anastomotic leakage: 3 (7.5%) procedure was laparotomy + exteriorization-2 survived, 1 dead

➤ Intra-abdominal collections Ascites: 7 (17.5%) procedure was laparotomy + abdominal drainage.

➤ Brust abdomen / wound dehiscence: 3 (7.5%) procedure was secondary closure.

➤ Pelvic abscess: 2 (5%) procedure followed laparotomy + abdominal drainage, 2 survived

➤ Out of 15 (37.5%), 12 (30%) survived, 3 (7%) dead.

Table 1: Study of Mechanism of injury

Mode of injury	No. of patients	Percentage (%)
Road Traffic Accident (RTA)	23	57.5
Fall from height	7	17.5
Hit by blunt object	3	7.5
Heavy object fell on abdomen	5	12.5
Others	2	5

Table 2: Anatomical locations of injuries

Anatomical sites	Perforation	Serosal injury	Total (including both)
Duodenum	1	0	1
Duodenojejunal	4	7	11
Jejuno-Ileum	21	2	23
Close Ileo-cecal junction	3	2	5
Scattered	3	1	4
Total	32 (80%)	12 (30%)	44 (both)

Table 3: Study of Associated organ injuries

Associated injuries	Number of patients	Percentage (%)
a) Intra-abdominal		
liver	4	10
Spleen	8	20
Other	1	2.5
b) Extra abdominal		
Skeletal system	3	7.5
Facio-maxillary	1	2.5

13 (32.5%) Intra-abdominal and 4 (10%) Extra-abdominal

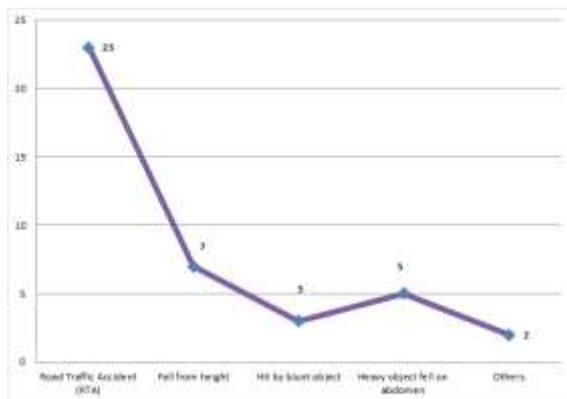


Figure 1: Study of Mechanism of injury

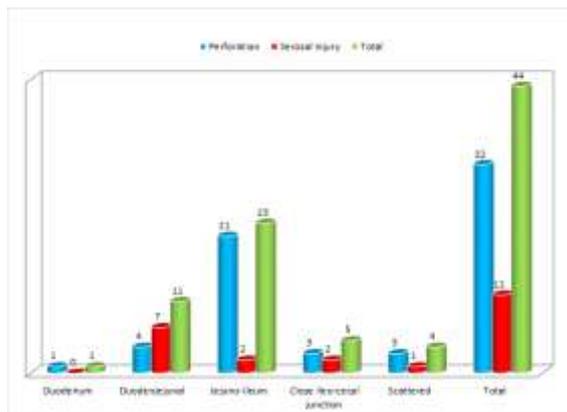


Figure 2: Anatomical locations of injuries

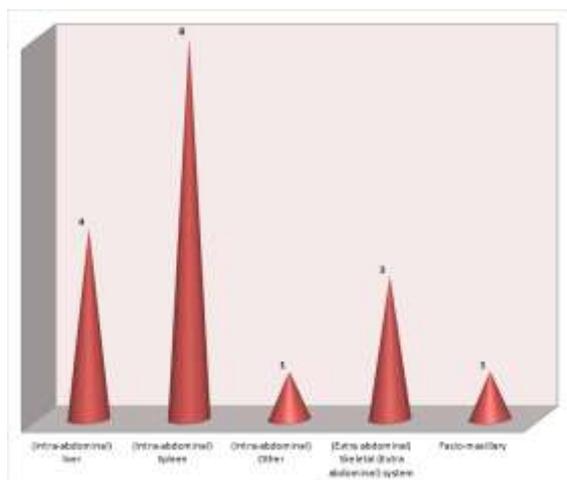


Figure 3: Study of Associated organ injuries

DISCUSSION

Present study of intestinal injuries from blunt abdominal trauma in the Telangana population. The modes of injuries had 23 (57.5%) RTA, which was the highest, followed by 7 (17.5%) falls from height, 5 (12.5%) heavy objects falling on the abdomen, and 3 (7.5%) hits by blunt objects (Table 1). The anatomical sites of injuries: 32 (80%) had perforation, and 12 (30%) had serosal injury (Table 2). The associated injuries of organs were 13 (32.5%) intra-abdominal and 4 (10%) extra-abdominal (Table 3). In major complicated injuries, 12 (30%) had

survived and 3 (7%) were dead (Table 4). These findings are more or less in agreement with previous studies.^[5,6,7]

It is rightly said that the abdomen is a “magic box” because it contains organs of various systems, like the exocrine, endocrine, and largest metabolic center and the lymphatic organ. Hence any blunt injury with no obvious external signs may cause severe bleeding, and sudden death may occur. The forceful blunt abdominal trauma may deform hollow organs and transiently increase intraluminal pressure, resulting in rupture. Declaration forces cause stretching and linear shearing between relatively fixed and free objects. As bowel loops travel from their mesenteric attachments. Thrombosis and mesenteric tears, with resultant splanchnic vessel injuries, can result.^[8]

It is reported that laparoscopy improved perioperative outcomes and reduced the risk of complications among the hemodynamically stable patients with abdominal trauma. The laparoscopic surgery is widely accepted as a treatment for non-traumatic disease, and the controversy surrounding its technical issues has reduced. There have been considerable improvements in laparoscopic skill and laparoscopic equipment over the past few decades due to the involvement of high-resolution cameras, suturing devices, staplers, and energy devices that allow for effective hemostasis and resection.^[9] It is reported that lateral trunk muscle injuries are often linked to sportsmen that require trunk rotation, such as tennis and cricket, and oblique muscle trauma even during regular exercise, especially in patients with predisposing factors such as anticoagulant therapy or coagulopathy, while rectal sheath hematoma is more common after a direct blunt force trauma.^[10]

During the blunt abdominal trauma, the first option is immediate surgical repair. Though there was a substantial lack of reliable data, surgery was performed in the acute phase without any specific imaging to prevent a significant functional impairment of visceral and muscular trunk dynamics.^[11] If stable patients require laparotomy, it is performed, but contaminated injuries are excluded. Minor defects can be followed up early by identifying symptoms deserving specific delayed treatment according to the patient's quality of life.^[12]

CONCLUSION

An immediate surgical approach is needed in significant bowel and mesenteric injuries, and insignificant trauma can be treated with non-surgical treatment. Although early diagnosis of intestinal injuries from blunt abdominal trauma using USG, CT/MRI, and laparoscopic techniques can minimize the morbidity and mortality. Moreover, skillful and efficient surgery plays a vital role.

Limitation of study: Owing to remote location of research Centre, small number of patients lack of latest techniques we have limited findings and results.

- This research work was approved by the ethical committee of Mallareddy Medical College for women Mallareddy Vishwavidyapeeth Suraram X Road, Quthbullapur, Jeedimetla, Hyderabad, Telangana-500055.
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