

An Experience with Blunt Abdominal Trauma: Evaluation and Management

Dr. Mahendra Kumar¹, Dr. Sanvar Mal Kantva²

¹Assistant Professor, ²Senior Resident

¹Department of General Surgery, Government Medical College Churu

²Department of General Surgery, S M S Medical College & Attached Group of Hospital, Jaipur

Corresponding Author: Dr. Sanvar Mal Kantva, Senior Resident, Department of General Surgery, S M S Medical College & Attached Group of Hospital, Jaipur

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Abstract

Background: 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.

Methods: Hospital based prospective study conducted on 200 patients admitted with history of blunt trauma abdomen due to road traffic accidents, accidental falls, trauma by blunt objects and assault attending to Dept. of gen. Surgery.

Results: Case distribution according to organ involved consisted of 58 cases of liver injury 54 of these cases were managed conservatively, and only 4 cases were operated. 42 cases were of Splenic injury 40 of which were managed conservatively and two underwent surgery. 25 patients had ilial injury all of which were operated.

Conclusions: Road traffic accident was the most common cause of injury. Though conservative management is successful in carefully selected patients, operative management remains the main stay of treatment.

Keywords: Blunt Abdominal Trauma, Liver Injury, Splenic Injury

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 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. Motor vehicle accidents account for 75 to 80% of blunt abdominal trauma.²

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 bicycle.³

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.⁴

The factors like altered mental status of the patients makes it necessary that the management should not be based entirely on the basis of clinical examination and rather should be assisted by imaging like FAST (Focused assessment of sonography in trauma) and computed tomography (CT).⁵

The management needs multidisciplinary approach. In spite of the best techniques and advances in diagnostic and supportive care, the morbidity and mortality remains at large.⁶ The usual complication arising out of BAT includes hemorrhagic shock due to blood loss. Fluid resuscitation and non operative management is all that is needed in hemodynamically stable patients with BAT. But in some cases refractory shock not responding to aggressive fluid resuscitation may be seen. In such patients one of the main concerns from the point of view of a treating surgeon is control of bleeding.⁷

Materials & Method

Study design: Hospital based prospective study.

Sample size: All patients reporting to the gen.Surgery dept. within study duration and eligible as per inclusion criteria was included in the study.

Inclusion Criteria: Patients admitted with history of blunt trauma abdomen due to road traffic accidents, accidental falls, trauma by blunt objects and assault attending to Dept. of gen. Surgery

Exclusion criteria

- Associated Orthopedic Injuries
- Associated With Severe Head Injury
- Associated With Severe Chest Injury

- Pregnancy

Results

Table 1. Distribution on The Basis of Type of Injury

Type of Injury	No of cases	Percentage
RTA	167	83.5
Fall from height	13	6.5
Assault	7	3.5
Others	13	6.5

Distribution according to type of injury consisted of maximum cases, 167 (83.5%) of road traffic accidents, 13 cases (6.5%) were of fall from height, assault cases were 3.5% of total.

Table 2. Distribution according to condition of patient at admission

Condition	No of cases	Percentage
Stable	135	67.5
Unstable	65	32.5
Total	200	100.00

Table 3. Distribution according to organ involved in injury

Organ Involved	Non Operated	Operated	Total
Liver	54	4	58
Spleen	40	2	42
Intestine	0	25	25
Pancreas	1	0	1
Kidney	2	0	2
Urinary Bladder	0	2	2
Mesentery	0	3	3
Diaphragm	0	1	1

Case distribution according to organ involved consisted of 58 cases of liver injury 54 of these cases were managed conservatively , and only 4 cases were operated.42cases were of Splenic injury 40 of which were managed conservatively and two underwent surgery. 25 patients had ilial injury all of which were operated. Table3. Distribution according to management done

Management	No of cases	Percentage
Conservative	167	81.5
Operative	37	18.5

Based on the type of management done cases were divided as operative and conservative. Operative management was done in 37 patients. 167 patients were managed conservatively.

Discussion

Distribution according to type of injury consisted of maximum cases, 167 (83.5%) of road traffic accidents, 13 cases (6.5%) were of fall from height, assault cases were 3.5% of total in our study.

Madhumita Mukhopadhyay et al in their study of 47 patients who underwent laparotomy following intestinal injuries from blunt abdominal trauma over a period of 4 years found that the M:F ratio in this study was 8.4:1⁸ Similarly John L Kendall et al in a retrospective cohort study of 1169 cases of BAT reported that 66% of the affected individuals were Males⁹

Similar Findings were reported by Khanna et al who found that the most common mode of injury in cases of BAT was Road Traffic accidents (57%). In contrast to our study Khanna et al in their study found assault (33%) to be more common than fall from height (15%)¹⁰

Case distribution according to organ involved consisted of 58 cases of liver injury 54 of these cases were managed conservatively, and only 4 cases were operated. 42 cases were of Splenic injury 40 of which were managed conservatively and two underwent surgery. 25 patients had ilial injury all of which were operated in our study. Similar study by Cox et al showed Splenic and hepatic injuries in 46% and 33% patients respectively¹¹

There is an increase in trend towards conservative management if the patient is hemodynamically stable. The grade of injury was assessed by USG and CECT and was most of the time managed conservatively. Minor lacerations and capsular tears which are difficult to diagnose clinically can be easily demonstrated in USG

and CECT scan and were selected for non-operative management. However the disadvantage of non-operative management is missed injuries resulting in increased morbidity and mortality. Operative intervention is needed in hemodynamically unstable patients who are not responding to aggressive fluid resuscitation and those with significant organ injuries. The common surgeries performed in our patients included splenectomy, primary closure of perforation and resection and anastomosis. Similar surgeries were required in patients of BAT as reported by Wu CL et al¹²

Conclusion

Blunt Abdominal Trauma is one of the important causes of morbidity and mortality in relatively young individuals. Most common mode of injury is road traffic accidents.

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