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SPECTRUM OF BLUNT ABDOMINAL TRAUMA

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Abstract
Background: Blunt abdominal trauma is a leading cause of morbidity and mortality among all age groups. Many injuries may not manifest during the initial assessment and treatment period.
Methods: Hospital based cross-sectional study conducted at Trauma center and P.B.M Hospital, Bikaner
Results: Distribution according to type of injury consisted of maximum cases, 86% of road traffic accidents 74 of which were male and 12 female. 10% cases were of fall from height, 6 were male and 4 female .Assault cases were 4%. Case distribution according to organ involved consisted of 54.00% cases of liver injury,18.00% cases were of splenic injury, 23.00% patients had ilial injury, Pancreatic injury occurred in 2patient.
Conclusions: Males were pre-dominantly affected. 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, Perforation, Splenic injury

Introduction

Blunt injury of abdomen is also a result of fall from height, assault with blunt objects, sport injuries, industrial mishaps, bomb blast and fall from riding bicycle[1]. Blunt abdominal trauma is usually not obvious. Hence, often missed, unless, repeatedly looked for. Due to the inadequate treatment of the abdominal injuries, most of the cases are fatal. The knowledge in the management of blunt abdominal trauma has progressively increasing due to the in-patient data gathered from different parts of the world. In spite of the best techniques and advances in diagnostic and supportive care, the morbidity and mortality remains high. The reason for this could be due to the interval between trauma and hospitalization, delay in diagnosis, inadequate and lack of appropriate surgical treatment, postoperative complications and associated trauma especially to head, thorax and extremities.[2]

The relatively fixed position of the liver and its large size makes it more prone for injury in blunt trauma of the abdomen. Liver and spleen together, account for 75% of injuries in blunt abdominal trauma[2]. Though liver is the second most commonly injured organ in abdominal trauma, it is the most common cause of death following abdominal injury. Compared to splenic injuries, management of liver trauma still remains a challenge in the best of trauma centers.

Materials & Method

Study design: Hospital based cross-sectional study.

Study place: Dept. of Trauma center and P.B.M Hospital, Bikaner

Inclusion Criteria: Patients admitted with history of blunt trauma abdomen due to road traffic accidents, accidental falls, and trauma by blunt objects and assault attending to P.B.M Hospital, Bikaner

Exclusion criteria:

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

Data analysis:

Data was recorded on a Performa. The data analysis was computer based; SPSS-22 was used for analysis. For categoric variables chi-square test will be used. For continuous variables independent samples's *t*-test was used. *p*-value <0.05 was considered as significanit.

Results

Table 1: Type of Injury

Type of Injury	Male	Female	Total
RTA	74	12	86
FFH	6	4	10
Assault	3	1	4
Others	0	0	0

Distribution according to type of injury consisted of maximum cases, 86% of road traffic accidents 74 of which were male and 12 female. 10% cases were of fall from height, 6 were male and 4 female .Assault cases were 4%. There were no cases of other injuries causing blunt trauma abdomen such as bomb blast injuries, cyclist injuries, sports injuries etc.

Table 2: Organ Involved in Injury

Organ Involved	Total
Liver	54
Spleen	36
Intestine	23
Pancreas	2
Kidney	4
Urinanry Bladder	2
Mesentry	5
Diaphragm	1

Case distribution according to organ involved consisted of 54.00% cases of liver injury,18.00% cases were of splenic injury, 23.00% patients had ilial injury, Pancreatic injury occurred in 2patient.

Table 3: Management

Management	Total
Conservative	**76**
Operative	**24**

Based on the type of management done cases were divided as operative and conservative. Operative management was done in 24 patients and 76 patients were managed conservatively

Discussion

Distribution according to type of injury consisted of maximum cases, 86% of road traffic accidents 74 of which were male and 12 female. 10% cases were of fall from height, 6 were male and 4 female .Assault cases were 4%. There were no cases of other injuries causing blunt trauma abdomen such as bomb blast injuries, cyclist injuries, sports injuries etc.

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 8.4:1[3] Similarly John L Kendall et al in a retrospective cohort study of 1169 cases of BAT reported that 66% of the affected individuals were Males[4]

Similar Findings were reported by Khanna et al who found that t 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%) [5]

Case distribution according to organ involved consisted of 54.00% cases of liver injury, 18.00% cases were of splenic injury, 23.00% patients had ilial injury, Pancreatic injury occurred in 2patient.Similar study by Cox et al showed splenic and hepatic injuries in 46% and 33% patients respectively [6]

There is an increase in trend towards conservative management if the patient is haemodynamically 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 al AB[7]

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 and men are affected predominantly

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