



SPECTRUM AND OUTCOME OF BLUNT ABDOMINAL TRAUMA IN A TEACHING HOSPITAL, BIKANER, RAJASTHAN

Surendra Saini¹, Mahesh Joshi²

^{1,2} Senior Resident, Department of General Surgery, S.P. Medical College & Associated Group of Hospitals, Bikaner (Rajasthan)

Article Info: Received 09 June 2019; Accepted 04 July. 2019

DOI: <https://doi.org/10.32553/ijmbs.v3i7.366>

Address for Correspondence: Mahesh Joshi

Conflict of interest: No conflict of interest.

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 prospective study conducted at Dept. of General Surgery, S.P. Medical College and P.B.M Hospital, Bikaner

Results: Case distribution according to organ involved consisted of 27 cases of liver injury 25 of these cases were managed conservatively, and only two were operated. 18 cases were of splenic injury 16 of which were managed conservatively and two underwent surgery.

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:

Abdominal trauma is one of the most common causes among injuries caused mainly due to road traffic accidents. The rapid increase in motor vehicles and its aftermath has caused rapid increase in number of victims to blunt abdominal trauma. Motor vehicle accidents account for 75 to 80 % of blunt abdominal trauma¹.

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 bicycle². 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.

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 trauma². 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 prospective study.

Study place: Dept. of General Surgery, S.P. Medical College and P.B.M Hospital, Bikaner

Study population: All patients of blunt trauma abdomen attending to Dept. of gen. Surgery, S.P. Medical College and P.B.M Hospital, Bikaner

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, S.P.Medical College and 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 significant.

RESULTS

Table 1: DITRIBUTION ON THE BASIS OF TYPE OF INJURY

TYPE OF INJURY	MALE	FEMALE	TOTAL
RTA	47	5	52
FFH	3	3	6
ASSAULT	2	0	2
OTHERS	0	0	0

Distribution according to type of injury consisted of maximum cases, 52 (87%) of road traffic accidents 47 of which were male and 5 female. 10% cases (6cases) were of fall from height, half of which were male and half female .Assault cases were 3% of total i.e.,2 cases both of which were male. There were no cases of other injuries causing blunt trauma abdomen such as bomb blast injuries, cyclist injuries, sports injuries etc.

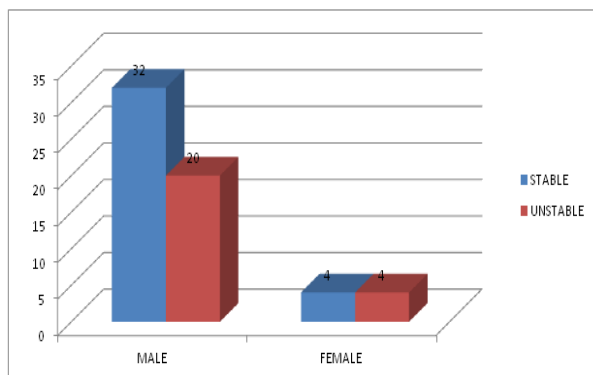


Figure 1: DISTRIBUTION ACCORDING TO CONDITON OF PATIENT AT ADMISSION

Table 2: DISTRIBUTION ACCORDING TO ORGAN INVOLVED IN INJURY

ORGAN INVOLVED	NON OPERATED	OPERATED	TOTAL
LIVER	25	2	27
SPLEEN	16	2	18
INTESTINE	0	11	11
PANCREAS	1	0	1
KIDNEY	2	0	2
URINANRY BLADDER	0	1	1
MESENTRY	0	3	3
DIAPHRAGM	0	1	1

Case distribution according to organ involved consisted of 27 cases of liver injury 25 of these cases were managed conservatively , and only two were operated.18 cases were of splenic injury 16 of which were managed conservatively and two underwent surgery. 11 patients had ilial injury all of which were operated. Pancreatic injury occurred in 1 patient who was managed non operatively. There were 2 cases of kidney injury both of which were not operated and managed conservatively. One of the patient suffered urinary bladder injury wand underwent surgery. Mesenteric injury was present in 3 cases all of which were operated. Diaphragmatic injury occurred in one patient and he was operated.

Table 3: DISTRIBUTION ACCORDING TO MANAGEMENT DONE

MANAGEMENT	MALE	FEMALE	TOTAL
CONSERVATIVE	39	5	44
OPERATIVE	15	1	16

Based on the type of management done cases were divided as operative and conservative. Operative management was done in 16 patients 15 of which were male and 1 female.44 patients were managed conservatively which included 39 male cases and 5 female cases.

DISCUSSION

Distribution according to type of injury consisted of maximum cases, 52 (87%) of road traffic accidents 47 of which were male and 5 female. 10% cases (6cases) were of fall from height, half of which were male and half female .Assault cases were 3% of total i.e.,2 cases both of which were male. There were no cases of other injuries causing blunt trauma abdomen such as bomb blast injuries, cyclist injuries, sports injuries etc 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 8.4:1³ Similarly John L Kendall et al in a retrospective cohort study of 1169 cases of BAT reported that 66% of the affected individuals were Males⁴

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%)⁵

Case distribution according to organ involved consisted of 27 cases of liver injury 25 of these cases were managed conservatively, and only two were operated. 18 cases were of splenic injury 16 of which were managed conservatively and two underwent surgery. 11 patients had ilial injury all of which were operated. Pancreatic injury occurred in 1 patient who was managed non operatively. There were 2 cases of kidney injury both of which were not operated and managed conservatively. One of the patient suffered urinary bladder injury and underwent surgery. Mesenteric injury was present in 3 cases all of which were operated. Diaphragmatic injury occurred in one patient and he was operated in our study. Similar study by Cox et al showed splenic and hepatic injuries in 46% and 33% patients respectively⁶

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 al⁷

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

REFERENCES

1. Sabiston's Textbook of surgery: 18th edition: vol 1: 2008: p501-519.
2. Starling SV, Drumond DAF. Tratamento não operatório de 1.768 pacientes portadores de lesões das vísceras maciças abdominais por trauma contuso atendidos no Hospital João XXIII. Rev Med Minas Gerais. 2014;24(4):432-40.
3. Kendall JL, Kestler AM, Whitaker KT, Adkisson M-M, Haukoos JS. Blunt Abdominal Trauma Patients Are at Very Low Risk for Intra-Abdominal Injury after Emergency Department Observation. Western Journal of Emergency Medicine. 2011;12:496-504.
4. Joe Jack Davis, Isidore Cohn, Francis C. Nance; Diagnosis and management of Blunt abdominal trauma. Ann, Surg, 1976 183: 672-678.
5. R. Khanna, S Khanna, P Singh, Puneet and A K Khanna; Spectrum of blunt abdominal trauma in Varanasi; Quart J; 1999;35;25-28
6. Cox, Everard F. Blunt abdominal trauma: A 5 year Analysis of 870 patients requiring Celiotomy; Ann, Surg 1984;199:467-474.
7. Wu CL, Chou MC. Surgical management of blunt abdominal trauma. Gaoxiong Yi Xue Ke Xue Za Zhi. 1993;9:540-52