

THE STUDY OF BLUNT TRAUMA ABDOMEN: CONSERVATIVE MANAGEMENT AND OUTCOME

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ABSTRACT

Background: The changing era of industrialization is coupled with an increase in the number of road traffic accidents because of the increase in automobile number and increased vehicular accidents which results in the very high incidence of blunt trauma abdomen. The present study was conducted to assess the effectiveness of conservative management in blunt trauma abdomen patients at our tertiary care center. The present study was conducted to evaluate the nature and cause of injury, its management and outcome due to blunt trauma abdomen. **Methods:** A series of 45 patients admitted with BTA over a period of one year (January 2018 - December 2018) in JMCH Jhalawar, Rajasthan, India were enrolled in the study. The most common age group affected was 15 - 30 year and the male to female ratio was 2.7:1. **Results:** The most common mode of injury was motor vehicle accident (75%). The most common organ injured was liver (44.44%) followed by spleen (22.2%). Conservative management was done in 40 (88.88%) patients and was successful in 32 (71.11%) patients and 8 (17.77%) patients later required surgery. **Conclusions:** Operative treatment was done in 5 (11.11%) patients because of hemodynamic instability. Mortality was 13.33%. In our study conservative management of BTA was found highly successful.

Keywords: Blunt trauma abdomen, Non-operative managements

INTRODUCTION

Trauma is rapidly becoming a modern epidemic. Blunt trauma continues to be the most common mechanism of injury to the abdomen. This is a part related to the consequences of an accident due to automobiles, although falls, assaults and industrial accidents contribute significantly. Incidence of BTA 5% is variable from time to time depending on circumstances, mode of injury. Abdomen injuries are seen in 2-5% of all accidents and are leading injury in 51.6% of fatal accidents. (1) Trauma is the leading cause of death in person under 45 of age. 85% of abdominal trauma is of blunt character. (2) The detection of an intra-abdominal injury is a frequent diagnostic problem in the polytrauma patient. Diagnosis requires intelligent interpretation of history, the physical finding, and results of the available radiological procedure. Initial resuscitation along with USG and CT scan are very beneficial to

detect these patients. NOM is a standard protocol for hemodynamically stable solid organ injuries. Non-operative management is reported beneficial among various studies as it does not includes non-therapeutic laparotomy and lesser associated cost of morbidity, few chances of intraabdominal complications as compared to operative repair. Hemodynamic instability is associate with high morbidity and mortality in BTA patients.

METHODS

All the BTA cases admitted in JMCH Jhalawar during the period of January 2018 to December 2018 were included in the study. After initial resuscitation, detailed history and clinical examination were done. A laboratory test, X-ray, USG was one to arrive at the diagnosis. CT scan was done in a hemodynamically stable patient. Patients were

evaluated in terms of mortality, morbidity and conversion ratio into surgical intervention. Inferences were made for age, sex, mode of injury, organ injured, hospital stay, complication, and mortality.

RESULTS

Age and sex distribution

The study included 45 patients of BTA. 77.77% victims were in reproductive age group i.e. 15-45 years. And male to female ratio was 2.7:1.

Table 1: Age and sex distribution.

Age group (years)	Male	Female	Total	Percentage
0-15	1	2	3	6.66%
15-30	17	4	21	46.66%
31-45	10	4	14	31.11%
>45	5	2	7	15.55%
Total	33 (73.3%)	12 (26.6%)	45 (100%)	100%

Mode of injury

Motor vehicle accident was most common mode of injury accounts for 75% case.

Organ involved

Liver was the most common organ injured in 20 (44.44%) cases followed by spleen 10 (22.22%) cases. 10 (22.22%) cases had no organ involvement.

Table 2: Involved organ in study.

Organ involved	No. of cases	Percentage
Liver	20	44.44%
Spleen	10	22.22%
Kidney	1	2.22%
Pancreas	-	-
Hollow viscous organ	4	8.88%
No organ involved	10	22.22%

Line of management an outcome

In our study conservative management was done in 40 (88.88%) patients and was successful in 32 (71.11%) patients and 8 (17.77%) patients later required surgery. Operative treatment was done in 5 (11.11%) patients because of hemodynamic instability.

Table 3: Line of management an outcome.

	Male	Female	Total
Non operating management(NOM)	24	8	32 (71.11%)
Operated	3	2	5 (11.11%)
Conversion NOM to operated	6	2	8 (17.77%)
Total	33	12	45 (100%)

Complications and mortality

In this study 5 patients developed septicemia and 1 patient developed ARF. Mortality rate was 13.3% because of multiple organ injury and hemodynamic instability.

Average hospital stay

Hospital stay was less in NOM group. The average stay in the hospital in NOM group patient was about 7 days and in operative group patient was 15 days.

DISCUSSION

One of the leading causes of morbidity and mortality is trauma. Blunt trauma abdomen is the third most common injury reported after the injuries to the head and extremities. Approximate 25% of the patients of BTA require urgent surgical resuscitation to save the life. Blunt abdominal trauma is often very difficult to detect and diagnose because of no visible signs and also not assessable of clinical signs. Hence, we require an accurate method of diagnostic modality to screen the patients of blunt trauma abdomen to early detect and prevent the morbidity and mortality to happen. Now days USG and CT scans are being used widely and replaced by all previous methods of diagnosis. The main advantage of ultrasonography is that it can be performed bedside of the patient and immediately assess the extent of injury and also it can detect free peritoneal fluid with high sensitivity

Present study was aimed to study course of illness during conservative management of BTA and to evaluate the outcome of conservative management in terms of mortality, morbidity and conversion rate into operative management. In our study 77.77% of cases are in age group between 15-45 years. Most of the studies show that young previously healthy and economically productive population was usually victim of BTA.

In one study by Davis et al, 75% patient were <45 years old. Male (72%) outnumbered female (28%) as BTA victims. Male to female ratio was 2.7:1. This is

comparable to study by Fakhry et al 2000 with male to female ratio 3:1.(4,5) most common mode of injury was motor vehicle accident accounting for 75% of cases is comparable to other studies. In our study most common organ injured was liver (44.44%) followed by spleen (22.22%) which is comparable to study by Cox EF.(6) The management of BTA with were successfully managed by NOM. 17.77% cases of BTA ended up in surgical procedure after initial conservative approach due to deterioration of their condition. Our study is comparable to many other available literatures.(7)

In our study mean stay in hospital was 7 days in NOM group as compared to 15 days in surgical group. Gopalswamy S who reported medium length of hospital stay in conservative cases as 6.5 days. (6) Overall mortality in our study was 13.33%.

CONCLUSION

Peak incidence of BTA is in young and productive age population. All solid organ injuries can be managed conservatively. Liver and spleen have favorable outcome when managed conservatively. Delayed hospitalization, multiple organ injuries and associated injuries were major cause of mortality. Conservatively managed patient with BTA should have early and accurate diagnosis, prompt and thoughtful management to improve overall prognosis.

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