Original Research Article

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Conservative management and outcome of blunt trauma abdomen

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ABSTRACT

Background: The rapid phase of industrialization coupled with an increase in number of automobiles and vehicular accidents is giving us an increased incidence of blunt trauma abdomen (BTA). This study assesses the feasibility of conservative management in blunt trauma abdomen patients at tertiary care centre. The study was undertaken to know the cause of injury, management and outcome of BTA.

Methods: A series of 90 patients admitted with BTA over period of one year (January 2015 - December 2015) in JMCH Jhalawar, Rajasthan, India were enrolled in study. Most common age group affected was 15 - 30 year and male to female ratio was 2.6:1.

Results: Most common mode of injury was motor vehicle accident (65.5%). Most common organ injured was liver (44.5%) followed by spleen (25.5%). Conservative management was done in 80 (89.5%) patients and was successful in 67 (74.5%) patients and 13 (14.4%) patient later required surgery.

Conclusions: Operative treatment was done in 10 (11.1%) patients because of hemodynamic instability. Mortality was 7.7%. 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 abdomen. This is a part related to consequences of accident due to automobiles, although fall, 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 leading cause of death in person under 45 of age. 85% of abdominal trauma are of blunt character.2 The detection of an intraabdominal injury is frequent diagnostic problem in polytrauma patient. Diagnosis requires intelligent interpretation of history, the physical finding and results of available radiological procedure. Initial resuscitation along with USG and CT scan are very beneficial to detect these patients. NOM is standard protocol for hemodynamically stable solid organ injuries. NOM is beneficial as it includes avoidance of non-therapeutic laparotomy and the associated cost of morbidity, fewer intraabdominal complications compared to operative-repair. Hemodynamic instability is associate with high morbidity and mortality in BTA patient.

METHODS

All the BTA cases admitted in JMCH Jhalawar during period of January 2015 to December 2015 were included in study. After initial resuscitation, detailed history and clinical examination were done. Laboratory test, X-ray, USG was one to arrive at the diagnosis. CT scan was done in hemodynamically stable patient. Patients were evaluated in term 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

Study included 90 patients of BTA. 81% victims were in reproductive age group i.e. 15-45 years. And male to female ratio was 2.6:1.

Table 1: Age and sex distribution.

Age group (years)	Male	Female	Total	Percentage
0-15	2	3	5	5.5%
15-30	36	9	45	50%
31-45	19	9	28	31.1%
>45	8	4	12	13.4%
Total	65 (72%)	25 (28%)	90 (100%)	100%

Mode of injury

Motor vehicle accident was most common mode of injury accounts for 65.5% case.

Organ involved

Liver was the most common organ injured in 40 (44.5%) cases followed by spleen 23 (25.5%) cases. 26 (28.9%) cases had no organ involvement.

Table 2: Involved organ in study.

Organ involved	No. of cases	Percentage
Liver	40	44.5%
Spleen	23	25.5%
Kidney	6	6.7%
Pancreas	2	2.2%
Hollow viscous organ	10	11%
No organ involved	26	28.9%

Line of management an outcome

In our study conservative management was done in 80 (89.5%) patients and was successful in 67 (74.5%) patients and 13 (14.4%) patient later required surgery. Operative treatment was done in 10 (11.1%) patients because of hemodynamic instability.

Table 3: Line of management an outcome.

	Male	Female	Total
NOM	50	17	67 (74.5%)
Operated	6	4	10 (11.1%)
Conversion NOM to operated	9	4	13 (14.4%)
Total	65	25	90 (100%)

Complications and mortality

In this study 5 patients developed septicemia and 2 patients developed ARF. Mortality rate was 7.7% because of multiple organ injury and hemodynamic instability.

Average hospital stay

Hospital stay was less in NOM group. The average stay in hospital in NOM group patient was about 6 days and in operative group patient was 16 days.

DISCUSSION

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 81.1% 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 year old. Male (72%) outnumbered female (28%) as BTA victims. Male to female ratio was 2.6:1. 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 59% of cases is comparable to other studies. In our study most common organ injured was liver (44.5%) followed by spleen (25.5%) which is comparable to study by Cox EF.6 The management of BTA with were successfully managed by NOM. 14.5% 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 6 days in NOM group as compared to 16 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 7.7%. Patient with multiple organ involvement had higher mortality (38.5%) than single organ involvement (3.9%). Early admission and diagnosis can decrease mortality by 50%.

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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