

ORIGINAL ARTICLE

Surgical Management of Blunt Abdominal Trauma Study of 50cases

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ABSTRACT

BACKGROUND: Due industrial and automobile growth, incidents of accidental injuries are increasing with time and blunt abdominal injury is one of the common modes of injury in such accidents. It is also a common mode of injury during assault. In these cases, like tip of iceberg, internal injury may be more severe than it appears externally. So timely and rapid detection and management becomes important. Here we have studied patients of such injury who have required surgical intervention. **METHODS & MATERIALS:** This study consist of 50 cases of blunt abdominal trauma requiring surgical intervention, age from 10 to 70 years, in tertiary center (V.S. Hospital, Ahmedabad). They were evaluated clinically and investigated accordingly. **RESULTS:** Road Traffic Accident is the most common cause of blunt abdominal trauma. Highest incidence is noted in age group 21-30 (38%). Males are more vulnerable. Spleen is most commonly involved organ (48%), followed by liver (20 %) and intestine (18%). Mortality in this study is 4%. **CONCLUSION:** Less mortality and morbidity is present in blunt trauma victims who were primarily attended on site, immediately transported to higher institute with trauma care facilities. Here golden hours play role. Timely detection of injury and prompt management by team of experts plays important roll.

Key Words: Blunt abdominal trauma, surgical management.

INTROUCTION

The dimensions of the world are decreasing. Vehicles are invented one after another. World is becoming smaller and smaller. High speed vehicles have decreased the journey of their masters from cradle to grave by inflicting grievous injuries. It's also of vital importance in warfare surgery and worst amongst those is blunt abdominal trauma which may demand nothing less than life itself.

Thus swift industrial and automobile life constitutes the commonest cause of such injuries. Kicks over abdomen, direct blows over abdomen, injuries by animals etc are the other causes for it. The subject is also of vital importance in warfare injuries. It is a team work and timely diagnosis and treatment that can prevent mortality and

Morbidity. An incorrect decision may prove detrimental.

During my residency at V.S. Hospital, Ahmedabad; I have come across a variety of interesting cases which can be grouped under the heading of blunt abdominal injuries.

With increasing civilian catastrophe, it is imperative that all surgeons should be familiar with modern trends in treatment of these cases. A surgeon in first place must be in a position to decide whether to explore a particular case or not. It reminds the common proverb "the devil I know is better than devil I don't." That is true. Always in blunt abdominal injury, this is the most important single decision which will decide outcome of the case. During surgery, each and every organ must be thoroughly explored to find out another pathology which otherwise would have been overlooked.

In the recent time; the advent of antibiotics, rapid improvement in anesthesia, critical care facility, rapid transportation service, radiology and blood bank services have reduced mortality rates in patients of blunt abdominal injuries. It is

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a team work only that can help to solve problems.

MATERIAL AND METHODS

This study consists of randomly selected 50 cases of blunt abdominal trauma requiring surgical intervention in a teaching institute for a period of last 3 years.

Each patient was evaluated clinically taking into consideration history, general examination, abdominal examination, investigated and analyzed according to data collected on a planned proforma. The patients from 10 to 70 years age group were included in study. Patients were followed up from 6 months to 3 years.

RESULTS

Following are the observations and results of this study.

Table 3: Organ Affected

Organ	No of cases in present study	Percentage in present study	%age in joe jack davis study ⁹	%age in Cox et al ¹¹	%age in Khanna ¹⁰ et al
Spleen	24	48%	37.17%	46%	26%
Liver	10	20%	22.78%	33%	37%
Intestine	9	18%	18.67%	8%	57%
Kidney	4	8%	9.49%	10%	47%
Urinary bladder	4	8%	5.37%	-	-
Pancreas	3	6%	2.53%	-	-
Mesentery	2	4%	5%	10%	46%

Spleen is most commonly involved organ followed by liver and intestine.

Table 4: Associated Injuries.

Associated injury	No of cases in present study	Percentage in present study	%age in jack davis study ⁹
Head injury	9	18%	9.38%
Chest	7	14%	27.49%
Extremities	11	22%	15.78%
Spine	1	2%	-
Others	9	18%	-
Nil	18	36%	-

More than half cases have some other associated injuries as well means they are cases of polytrauma. Extremity is most commonly involved.

Table 5: Mode of Injury

Mode	No of cases of present study	%age in present study	%age in joe jack davis study ⁹	%age in Khanna et al study ¹⁰
Rta	43	86%	70%	57%
Fall From Height	6	12%	6%	15%
Others	1	2%	24%	28%
Total	50	100%	-	-

Road Traffic Accident is the most common cause of blunt abdominal trauma. Front seat passengers and drivers without wearing seat belt are at maximum risk.

Table 1: Age Distribution

Age Group In Yrs	No Of Cases In Present Study	Percentage In Present Study	Percentage In Joe Jack Davis Study ⁹
11-20	8	16%	19.22%
21-30	19	38%	33.7%
31-40	16	32%	14.87%
41-50	1	2%	6.58%
51-60	4	8%	5.70%
ABOVE 60	2	4%	5.26%
TOTAL	100	100%	100%

Highest incidence is noted in age group 21-30 years (38%), because they are more exposed to outdoor work and may be taking more risks.

Table 2: Sex Distribution

Sex	No of cases in present study	Percentage in present study	Percentage in joe jack davis study ⁹
Male	44	88%	70%
Female	6	12%	30%
Total	100	100%	100%

Males are more vulnerable because they are more exposed to outdoor hazards of road traffic accidents, sports and industrial accidents.

Table 6: Time Interval between Injury and Hospitalization.

Hours	No of cases	Percentage
0-2	10	20%
2-6	28	56%
6-24	12	24%
>24	-	-
Total	50	100

About 56% of cases were able to reach emergency department within 6 hours of injury.

Table 7: Complications in Postoperative Period and Follow Up.

	No of cases	Percentage
Wound infection	7	14%
Urinary tract infection	2	4%
Fever	1	2%
Bed sore	1	2%
Fecal fistula	1	2%

Approx 14% of patients developed wound infection. They were successfully treated with dressings.

Table 8: Mortality

No of case	Mortality	Percentage	Mortality in joe jack davis study ⁹
50	5	10%	13.3%

Mortality rate is 10 % which is comparable to other studies.

DISCUSSION

Highest incidence is noted in age group 21-30 years (38%), because they are more exposed to outdoor work and may be taking more risks. In Joe jack davis study⁹, 21-30 years of age group is highly affected.

Males are more vulnerable as in other studies like Davis et al⁹ because they are more exposed to outdoor hazards of road traffic accidents, sports and industrial accidents.

Spleen is most commonly involved organ followed by liver and intestine. Similarly in Davis et al⁹ and Cox et al¹¹, spleen most commonly involved. In Khanna et al¹⁰, small intestine most commonly involved.

More than half cases have some other associated injuries as well means they are cases of polytrauma.

In this study extremity are most commonly involved while in joe jack davis study⁹ and Khanna et al¹⁰ study, chest injuries are more common.

Road Traffic Accident is the most common cause of blunt abdominal trauma in all mentioned study followed by fall from height. Front seat passengers and drivers without wearing seat belt are at maximum risk.

About 56% of cases were able to reach emergency department within 6 hours of injury. This is due to improved facility of transport and improved ambulance service by government free of cost.

Approx 14% of patients developed wound infection. They were successfully treated with dressings. In SMHS hospital study, Kashmir, India; most common post operative complication is wound infection (30.2%).

Five patients died in this study. Mortality rate is 10 % which is comparable to other studies. The mortality rate in Davis et al⁹ study is 13.3%, Di Vincenti et al¹² study (1968) was 23%. Cox et al¹¹ study reports a mortality rate of 10%.

CONCLUSION

Road traffic accident is the most common cause of blunt abdominal trauma in present study (86%).

Second and third decades of life are more prone to injury (70%).

Spleen is more commonly involved organ followed by liver and kidney.

Males are affected more (88%).

Most common post operative complication is wound infection (14%).

Repeated examination and careful clinical assessment by preferably same team of experts was carried out during preoperative and post operative period.

In study, all patients were admitted in emergency department who were treated primarily at trauma centre and then further management was carried out. It has decreased mortality and morbidity in present study.(mortality 10%)

Golden hour- the blunt trauma victims who were primarily attended on site, immediately transported to larger institute with trauma care facilities have less mortality and morbidity in present study compared to those who were admitted late after injury.

Blunt trauma patients in future will benefit more if there are rapid pick up facilities preferably with help of helicopter, well equipped mobile ambulances and more facilities of trauma care centers available even in smaller town.

Compared to treatment of blunt trauma few years back; because of improved anesthesia techniques and drugs, improved preoperative, intraoperative and post operative care, broad spectrum newer antibiotics; the immediate recovery and long term results are excellent. Also decreased morbidity and mortality has been clearly associated with study.

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