

ORIGINAL ARTICLE

Profile of Blunt Abdominal Injuries: An Autopsy Study

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ABSTRACT

INTRODUCTION

BACKGROUND: Many vital organs (Liver, spleen, kidney etc) and also vital vessels like aorta and many major veins are in the abdominal cavity, so injuries to abdominal cavity are mostly fatal in the form of hemorrhagic shock or neurogenic shock. Blunt or sharp objects may causes these type of injuries. Which are due to any mode of death.

AIMS: To study the epidemiological aspect of fatal blunt abdominal injuries.

MATERIAL AND METHOD: In this study 140 cases of abdominal injuries by blunt objects are studied for their various aspect.

RESULTS: Most cases are of road traffic accident (RTA) or any other form of accidents. Most of them are young male between 20-40 years of age. Though majority of them died within in 1-2 hrs, on the spot or on the way. Nature of injuries are correlated with the history and incident. Involvement of spleen and liver shows multiple laceration. Kidney and retroperitoneal were also involved in significant number of cases. Vertebral, bladder and uterine injuries were rare.

CONCLUSION: Most of the fatal blunt abdominal injuries were of road traffic accidents majority of them have liver or spleen and hemorrhagic shock is the cause of death in almost all cases.

KEYWORDS | RTA; RETROPERITONEAL; HEMORRHAGIC SHOCK; SPLENIC LACERATION.

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INTRODUCTION

Routinely fatal blunt injuries seen over head, chest and abdomen. Blunt injuries are in the form of abrasion, contusion, laceration or fracture, they are mostly seen in road traffic accident. Many times abdominal damage occurs without any external visible injuries and diagnosed only during meticulous internal examination.¹⁻⁶

Run over accidents and fall from a height

can leads to multiple abrasion on either sides. Hitting by hard and blunt object also cause causes liver and spleen lacerations.^{4,5}

Here in this study the epidemiological aspects of blunt abdominal injuries are studied in the cases brought to the autopsy room of the Department of Forensic Medicine Shri M.P. Shah Govt. Medical College, Jamnagar during the period of January 2015 to December 2015.

MATERIALS AND METHODS

The materials for the present study were the dead body of blunt abdominal injuries brought to autopsy room of the Department of Forensic Medicine Shri M.P. Shah Govt. Medical College, Jamnagar during the period of January 2015 to December 2015.

Exclusion criteria are those cases of skeletonised body, decomposed and cause of death is other than abdomen injury. All the information related to epidemiological aspect of the cases like incident, type of vehicle, treatment taken or not, survival period etc were collected from the close relatives, and police officer accompanying the dead body and also from the police papers.

Detail external and internal injuries were noted and tabulated according to the type of injury, involvement of abdominal organ and cause of death.

OBSERVATION & RESULTS

140 cases of blunt abdomen injuries are studied of which majority of the victims (49.3%) were young adult male between 21-40 years of age group. Age wise the maximum number i.e., 36 (25.7%) of the victims were from 31-40 years of age, followed by 21-30 and 41-50 years of age group i.e., 23.6% & 16.4% cases respectively. At the extreme of age cases were few. Sex-wise there is a clear predominance of male over female i.e., 102 (72.9%) & 38 (27.1%) cases respectively.(Table 1)

Table 1: Age and Sex wise distribution

Age	Male	Female	Total
1-10	8 5.7%	1 0.7%	9 6.4%
11-20	11 7.8%	1 0.7%	12 8.5%
21-30	19 13.6%	14 10%	33 23.6%
31-40	25 17.9%	11 7.9%	36 25.7%
41-50	16 11.4%	7 5%	23 16.4%
51-60	13 9.3%	3 2.1%	16 11.4%
61-70	6 4.3%	1 0.7%	7 5%
Above 70	4 2.9%	0 0%	4 2.9%
Total	102 72.9%	38 27.1%	140 100%

Among blunt abdomen injuries 70.8% are caused by road traffic accidents, of which 2/3 (57.1%) by direct impact of the vehicle. Other blunt abdominal injuries were caused by, fall from height (7.9%) and by blunt weapon (9.2%) in homicidal assault.(Table 2)

Table 2: Manner of injuries

S No.	Manner	No. of Cases	No. of Cases (%)
1.	RTA	99	70.8%
	Impact	80	57.1%
	Run over	19	13.5%
2.	Fall from Height	11	7.9%
3.	Fall of object (Wall or any)	7	5%
4.	Blunt Weapon (Homicidal)	13	9.2%
	Total	140	100%

More than half (55.7%) of the victims were died on the spot just after the incidence. Another 34 (24.3%) were died within 6 hours. Only 6 (4.3%) of the victims survived more than 24 hrs.(Table 3)

Table 3: Survival Period

Sr. No.	Period	No. of cases	No. of Cases (%)
1.	Spot Death	78	55.7%
2.	Less than 1hr	21	15%
3.	1hr to 6hr	13	9.3%
4.	6hrs to 12hrs	9	6.4%
5.	12hrs to 24 hrs	9	6.4%
6.	More than 24 hrs	6	4.3%
	Total	140	100%

Injuries are caused externally front of abdomen in 45.7% and mostly on left side in 22.1% Back of abdomen involved in 24.3% cases and both front and back seen in 20% cases. Least cases seen on right back (5.7%).(Table 4)

Table 4: Involved areas (External Examination)

Sr. No.	Body Parts	No. of cases	No. of Cases (%)
1	Front of abdomen	64	45.7%
	Right	16	11.4%
	Left	31	22.1%
	Both	21	15%

2	Back of abdomen	34	24.3%
	Right	8	5.7%
	Left	21	15%
	Both	7	5%
3	Front & Back	28	20%
	Total	140	100%

Abrasion was the most common injury in 87.9% followed by contusion (65.7), least common was fracture (6.4%). (Table 5)

Table 5: Involved areas (External Examination)

Sr. No.	Injury Type	No. of cases*	No. of Cases (%)
1	Abrasion	123	87.9%
2	Laceration	69	49.3%
3	Contusion	92	65.7%
4	Fracture	9	6.4%

*= Multiple response

Internally spleen was the most common internal organ (59.3%) followed by liver (51.4) Least common was aortic (4.3%) and intestinal (0%) injury. Among splenic injury multiple laceration was common near the pedical (42.9%), in liver right lobe (42.1%) laceration was common. (Table 6)

Table 6: Involved areas (Internal Examination)

Sr. No.	Involved Organ	No. of cases*	No. of Cases (%)
1	Spleen	83	59.3%
2	Liver	72	51.4%
3	Right kidney	30	21.4%
4	Left kidney	26	18.6%
5	Aorta	6	4.3%
6	Retroperitoneal	42	30%
7	Bladder	3	2.1%
8	Uterus	5	3.5%

*= Multiple response

DISCUSSION

Mordernization leads to increase in the transportation which leads to increase in road traffic accidents and it is the cause for most of blunt injuries and it is a leading cause of death in autopsy.

Increase industrialization leads to increase in industrial injury in which most of them are of blunt injury. Some of cases of blunt trauma on abdomen are also seen in assault between persons or group with the hard and blunt objects.

In this study shows majority of the victims are young adult males, rarely seen in children, mostly RTA and accidental is the main cause behind such deaths. This is similar to the observations made by other study.¹⁻⁴

In present study it shows that in RTA direct impact by the vehicle is most common cause of blunt trauma to the abdomen. Meera Th et al., Pathak A et al., Kumar S et al., Benerjee K K et al. and Singh M et al. also shows similar results.^{5,7,8,10,12} Injuries to spleen or liver were found fractured in almost all the cases, of which of these splenic injury were most common internal injury. This is also consistent with the observations made by Pathak A et al. and Mohd et al. in their study.^{7,13} In splenic injury multiple lacerations were common which is consistent with Pathak A et al., Benerjee K K et al. and Mohd et al.^{7,10,13} In liver injury right lobe was common which is consistent with Kumar S et al., Benerjee K K et al. and Mohd et al.^{8,10,13}

CONCLUSION

- More than 50% of abdomen injuries were adult males between 21-40 years of age.
- More than 70% of the victims is of RTA most of them are of impact injuries.
- Splenic and liver injuries were seen in almost all cases. Bladder, uterus and colon were least involved.
- In the cases where spleen involved shows multiple laceration near pedical.
- More than 75% of the victim died either on spot or within 6hrs in the way or in casualty.
- Almost all cases hemorrhagic shock was the cause of death.

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