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A Prospective Study on Blunt Injury Abdomen and Their Impact on Abdominal Viscerae

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Abstract
AIM: *To study the effect of Blunt Injury Abdomen and their impact on abdominal viscerae and various associated injury in Blunt Injury Abdomen and to correlate the findings of abdominal sonography in trauma with laparotomy findings.*
METHODS: *Thirty four cases of blunt abdominal trauma admitted at Government Mohan Kumaramangalam Medical College and Hospital during the period of December 2018 to November 2019 were taken for this study. The cases were selected in such a way that only those patients with definitive history and clinical findings suggestive of injury to Viscerae which were later confirmed by investigations, laparotomy and autopsy. The clinical features were studies in details with special note to any associated injuries like head injury, chest injury and fracture limbs. Plain X-ray of the abdomen in erect posture was taken in most of the cases. Radiographs of other parts were also taken to find out associated injuries. Under aseptic precaution peritoneal tapping done in all the four quadrants, in all patients with the history of blunt abdominal trauma. At laparotomy a systematic approach with examination of all intra abdominal organs were made.*
RESULTS: *Males in 3rd decade are most commonly affected in Road Traffic Accident. Majority of the patients had guarding and abdominal tenderness. Spleen is the most commonly affected organ in Road Traffic Accident. Chest injury is commonest associated injury in Road Traffic Accident.*
CONCLUSION: *Spleen is most commonly injured organ in blunt abdominal trauma which is similar to other studies. RTA accounted for majority of cases of blunt injury abdomen which is around 63%Males are more often affected in blunt abdominal injuries than females and middle aged persons are more often affected than extremes of age. FAST is rapid cheap noninvasive procedure used for screening in the emergency ward itself while the patient is resuscitated.*

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I. Introduction

The care of the trauma patient is demanding and requires speed and efficiency. Evaluating patients who had sustained blunt abdominal trauma remains one of the most challenging and resource intensive aspects of acute trauma care.

Blunt abdominal trauma is one of the leading cause of mortality and morbidity among all age groups .Many injuries do not manifest during the initial assessment and treatment period. Missed intra abdominal injuries and concealed hemorrhage are the cause of increased mortality and morbidity especially in patients who survive the initial phase after an injury. Identification of serious intra abdominal pathology is often challenging

Physical signs are also often unreliable due to

a) Frequent accompanying of alcohol intoxication confuses the diagnosis

b) Associated injuries may divert the focus from abdomen and it may be diagnosed late

The number survivors of poly trauma have increased by 50% in recent years and this is attributed to prompt medical treatment and rapid transfer of patient's to major trauma centers.

II. Aims And Objective

To study the effect of Blunt Injury Abdomen and their impact on abdominal viscerae and various associated injury in Blunt Injury Abdomen and to correlate the findings of abdominal sonography in trauma with laparotomy findings.

III. Materials And Methods

STUDY AREA

Government Mohan Kumaramangalam Medical College and Hospital

STUDY POPULATION
Patients admitted in all surgical and trauma wards of Government Mohan Kumaramangalam Medical College and Hospital with Blunt Injury Abdomen between December 2018 to November 2019.

INCLUSION CRITERIA
1.Age limit >12 yrs
2.All patients with head injury
3.All patients with fractures

EXCLUSION CRITERIA
Patients below 12 years
STUDY PERIOD
December 2018 – November 2019
SAMPLE SIZE
34 cases
All patients eligible by inclusion and exclusion criteria are to be included in the study.

STUDY DESIGN
A Prospective study is to be conducted on patients admitted in surgical and trauma wards of Government Mohan Kumaramangalam Medical College and Hospital with blunt injury abdomen.
Informed consent will be taken from each respondent.

IV. Methods

Detailed history regarding the mode and nature of injury were taken. The cases were selected in such a way that only those patients with definitive history and clinical findings suggestive of injury to Viscerae which were later confirmed by investigations, laparotomy and autopsy. Basic investigations viz. blood Hb, blood urea, blood sugar, serum creatinine and blood grouping were done in all cases.

Plain X-ray of the abdomen in erect posture was taken in most of the cases expect in those who were admitted in a critically ill condition. Radiographs of other parts were also taken to find out associated injuries.

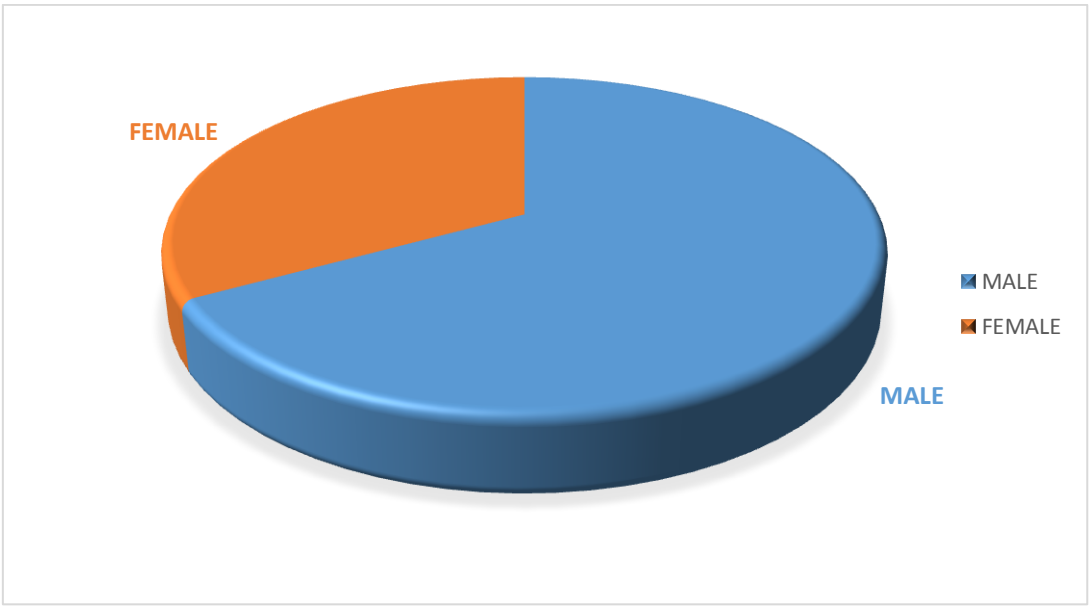
V. Results

AGE WISE INCIDENCE OF CASES

SL NO	AGE OF THE PATIENT	NO. OF CASES
1	13-20	4
2	21-30	12
3	31-40	14
4	41-50	2
5	51-60	2

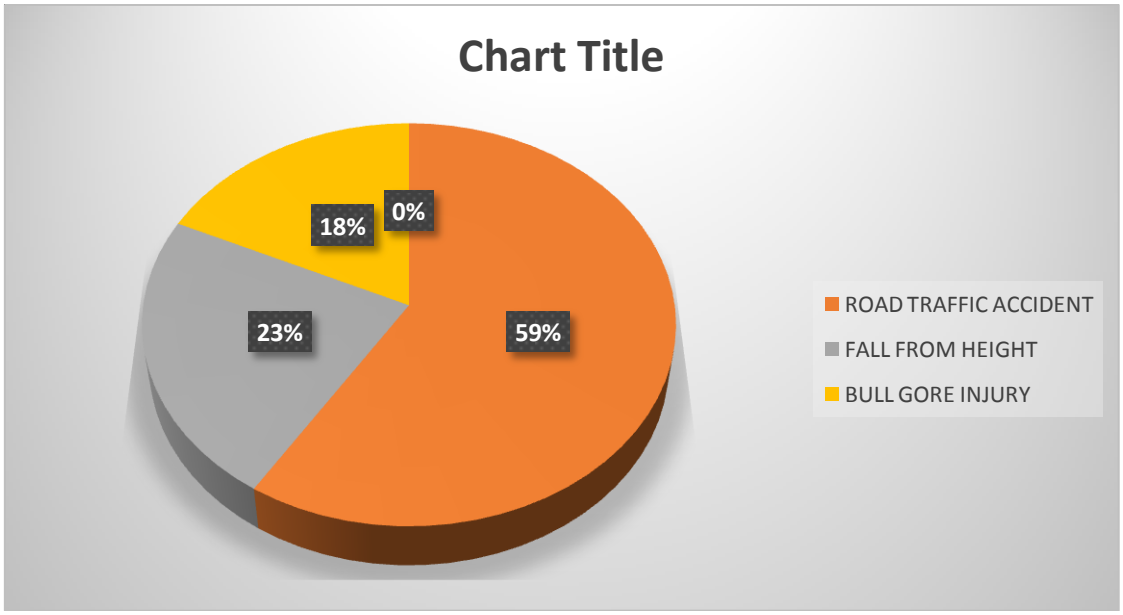
SEX WISE DISTRIBUTION OF CASES

SEX	NO. OF CASES
MALE	20
FEMALE	14



MODE OF INJURY

MODE OF INJURY	NO. OF CASES
ROAD TRAFFIC ACCIDENT	20
FALL FROM HEIGHT	8
BULL GORE INJURY	6



CLINICAL SIGNS

CLINICAL SIGNS	SPLEEN	LIVER	RENAL	MESENTRY	BOWEL	BLADDER
Tenderness	9	7	4	2	4	4
Guarding / Rigidity	5	4	1	1	4	1
Bowel sounds (+)	7	6	3	2	0	1
Pulse rate >100/min	11	8	4	1	4	2

ASSOCIATED INJURIES

ORGAN INJURED	TYPE OF ASSOCIATED INJURY	NO OF CASES
Spleen	Fracture of Ribs	5/13
Liver	Fracture of Ribs	6/8
Kidney	Retro Peritoneal Hematoma	4/4
Bladder	Fracture Suprapubic Rami	4/4
	Retro Peritoneal Hematoma	2/4
Mesentry	Retro Peritoneal Hematoma	2/4

MORTALITY

No. of Death	2
Total No. of Cases	34

USG CORELATION

ORGAN	USG FINDING	NO OF CASES
Spleen	Laceration	10/13
Liver	Laceration	7/8
Kidney	Contusion	4/4
Bladder	Free fluid abdomen	4/4
Bowel	Free fluid abdomen	4/4

VI. Discussion

Spleen is the commonest organ injured following blunt abdominal trauma. In our study 13 cases (32.%) of cases presented with injury to spleen. The associated injuries included fracture of Left lower ribs in 5 cases

Of the patients presented 5 patients were hemodynamically unstable with B.P systolic below 90 mm of Hg and pulse rate greater than 110/mt .They were resuscitated appropriately and taken up for laparotomy.

The commonest finding in all the patients were tenderness in the left Hypochondrium which was present in nine patients. Most of the patients had contusions or abrasions over the left hypochondrium.

Kehrs sign was present in 6 patients , ballance sign was present in none. Bowel sounds were present in 7 cases .

Abdominal paracentesis was done in all cases and was positive in all cases. X-ray chest and abdomen was taken in all hemodynamically stable patients . It showed fracture ribs 6-9 in two patients and # 9th rib in one patient.

The diagnosis of splenic injury was confirmed by clinical examination, the presence of haemoperitoneum which was confirmed by abdominal paracentesis and ultrasonogram.

At laparotomy all the cases which were operated upon had Grade III injuries in 7 cases Grade IV in 2 cases and Grade V in 3 cases. Splenectomy was done in all cases, appropriate surgical procedures (ICD insertion) was done for cases with hemothorax.

One patient expired pre operatively .He was hemodynamically unstable at the time of admission and his condition was very poor and did not respond to resuscitation.

VII. Conclusion

1) Spleen is most commonly injured organ in blunt abdominal trauma which is similar to other studies.
2) RTA accounted for majority of cases of blunt injury abdomen which is around 63%.
3) Males are more often affected in blunt abdominal injuries than females and middle aged persons are more often affected than extremes of age.
4) Commonest associated injuries occurred in our study was chest injury.
5) FAST is rapid cheap noninvasive procedure used for screening in the emergency ward itself while the patient is resuscitated.
6) Biochemical investigations are not of much help. The investigations only complimentary to clinical diagnosis.
7) In the unstable trauma patient, a positive FAST eliminates the need for further tests and indicates the necessity for abdominal exploration the emergency ward itself while the patient is resuscitated.
8) Diagnostic paracentesis is a rapid , bedside tool for diagnosis immediately at the bedside arrival of the patient.
9) Thorough initial clinical evaluation, repeated clinical examinations monitoring vital signs are essential in minimizing the chance of missing life threatening intra abdominal injuries.
10) The mortality in this study is related to severity of injuries . Severe the grading of injury more is the mortality.

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