



ASSESSMENT OF CLINICAL PRESENTATION OF SPLENIC INJURIES IN TERTIARY HEALTHCARE INSTITUTE: A CROSS-SECTIONAL STUDY

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A B S T R A C T

Background: Majority of cases with splenic injury are observed in second and third decade of life, this being the most active period of life when movements in motor vehicles and outdoor works result in increased risk of trauma. The present study was conducted to assess the clinical presentation of cases of splenic injuries following trauma admitted under department of general surgery.

Materials and methods: This present analytical study was conducted in the Department of Surgery, KIMS, Karad, Maharashtra, between March 2018 and August 2018 after an approval from institutional ethics committee. Total 60 patients, above 18 years presented with splenic trauma admitted under the department who consented to participate in the study were enrolled in the present study.

Results: Majority of the study subjects presented with Pain in abdomen (71.66%), followed by Tenderness (63.33%), Abdominal distension (41.66%), Dyspnea (20%), Nausea-Vomiting (30%) and Shock (18.33%).

Conclusion: Early hospitalization, better methods of diagnosis, proper timely surgical intervention, availability of blood transfusion, closed clinical observation and nursing care are important contributory factors for reduction in mortality resulting from blunt splenic trauma.

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INTRODUCTION

Spleen is a vulnerable organ and frequently sustains injury from the abdominal trauma in all age groups. In civilian practice frequency of splenic injury due to blunt trauma far exceeds than that due to penetrating trauma, road traffic accidents, steering wheel injuries and seat belt injuries. Penetrating injuries of the left thorax should also arouse suspicion of splenic injury. [1][2] Majority of cases with splenic injury are observed in second and third decade of life, this being the most active period of life when movements in motor vehicles and outdoor works result in increased risk of trauma.[3]

After blunt injury to the spleen, splenectomy was the preferred method of management till late seventies. Contemplations for the splenic salvage operations and nonoperative treatment for splenic injuries was increasingly been suggested for its invaluable functions. [3] The evolution of the present policy of conservative management is, indeed, a landmark in the history of clinical research. It tells how a rational inquiry supported by a well-planned study can change a centuries-old irrational surgical practice.[4]

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MATERIALS AND METHODS

This present analytical study was conducted in the Department of Surgery, KIMS, Karad, Maharashtra, between March 2018 and August 2018 after an approval from institutional ethics committee.

Total 60 patients, above 18 years presented with splenic trauma admitted under the department who consented to participate in the study were enrolled in the present study.

During the study period, patients were selected randomly for ages above 18 years and both the sexes and detailed clinical history and physical examination were carried out. Patients below 18 years of age, iatrogenic splenic injury, and spontaneous rupture of spleen following splenic abscess were excluded from the study.

Clinical history regarding the mode of splenic injury was taken and a quick general examination was done for all patients immediately on arrival at surgical outpatient department or casualty to look for the vital signs and for any external haemorrhage due to associated injury. If the patient was in collapsed state or shock immediate resuscitative measures were done. Careful examination of the abdomen and other systems was done for each patient.

Statistical data analysis was done using SPSS version 21 manufactured by IBM. Frequencies and proportions were used to summarize the variables while Chi-square and Student's t-test were used to test for association at 5% level of significance.

RESULTS

In the present study, in group A, there were 70% males and 30% female subjects. Majority of the study subjects belonged to 26-35 years of age group (36.66%), followed by 18-25 years (26.66%), 36-45 years (16.66%).

We assessed the causes of injuries among the study subjects. We observed that majority of the cases had road traffic accidents (35 cases), followed by fall from height among 17 cases and assault among 8 cases.

Majority of the study subjects presented with Pain in abdomen (71.66%), followed by Tenderness (63.33%), Abdominal distension (41.66%), Dyspnea (20%), Nausea-Vomiting (30%) and Shock (18.33%).

We classified the splenic injuries according to its grades. We observed Subcapsular hematoma among 18.33% cases, Intraparenchymal laceration among 30% cases, laceration with involvement of hilar vessels among 13.33% cases, Intra parenchymal laceration among 13.33% cases, Avulsed spleen with extensive perisplenic hematoma among 15% cases, and Completely shattered spleen among 10% cases.

Table 2 Distribution of study subjects according to age

Age groups	Number of patients	Percentage
18-25	16	26.66%
26-35	22	36.66%
36-45	10	16.66%
46-55	6	10%
56-65	4	6.66%
>66 years	2	3.33%
Total	60	100%

Table 4 Distribution of study subjects according to modes of presentation

Age groups	Number of patients	Percentage
Pain in abdomen	43	71.66%
Tenderness	38	63.33%
Abdominal distension	25	41.66%
Dyspnea	12	20%
Nausea-Vomiting	18	30%
Shock	11	18.33%

Table 5 Classification of splenic injuries

Grade	Findings	No. of cases	Percentage
(Gr III)	Subcapsular hematoma	11	18.33%
(Gr III)	Intraparenchymal laceration	18	30%
(Gr IV)	laceration with involvement of hilar vessels	8	13.33%
(Gr III)	Intra parenchymal laceration	8	13.33%
(Gr IV)	Avulsed spleen with extensive perisplenic hematoma	9	15%
(Gr V)	Completely shattered spleen	6	10%
	Total	60	100%

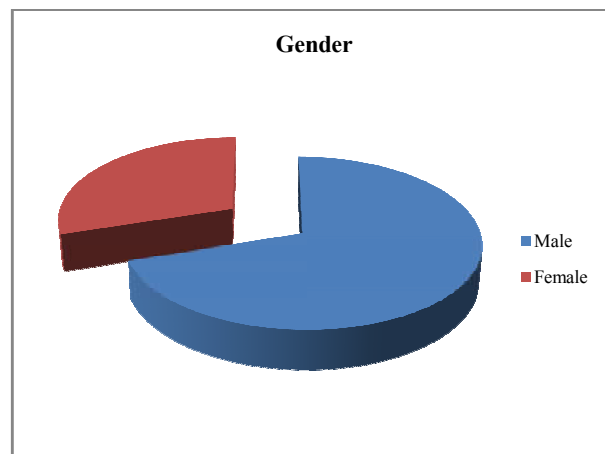


Figure 1 Distribution of study subjects according to gender

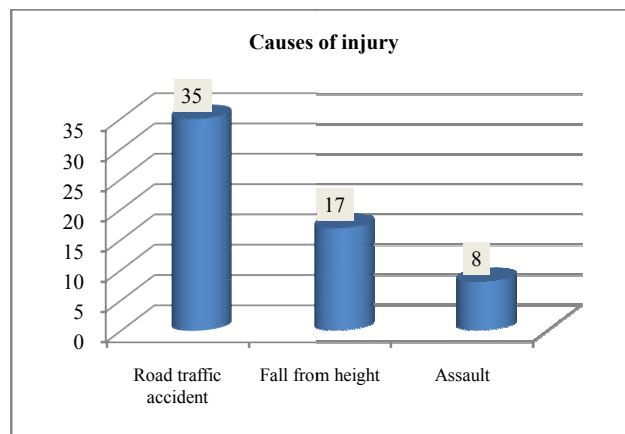


Figure 2 Distribution of study subjects according to causes of injury

DISCUSSION

In the present study, in group A, there were 70% males and 30% female subjects. Majority of the study subjects belonged to 26-35 years of age group (36.66%), followed by 18-25 years (26.66%), 36-45 years (16.66%).

In a study by Hussain Ahmed *et al* [1], the observed that the peak incidence was in the age group of 15 to 25 years (40%) followed by the age group of 26 to 35 years (26.66%). The mean age was 40 years. Male was affected more than the female with the male to female ratio of 6.5:1. In their study they observed 26 male and 4 female patients.

Karen J. Brasel *et al* [5] found patient between 6 and 84 years with mean age of 31.4 years.

Elmo *et al* [6] found incidence between male and female as 84.98% and 15.01%.5 Fuchs *et al* found male-female incidence of 80% and 20%.

We assessed the causes of injuries among the study subjects. We observed that majority of the cases had road traffic accidents (35 cases), followed by fall from height among 17 cases and assault among 8 cases.

In a study by Hussain Ahmed *et al*[1], the observed that the Road traffic accidents were the commonest cause of splenic injury accounting for 66.66% of the cases (20/30). Of these, 46.66% (14/30) resulted from motor vehicle accidents while motor cycle accidents accounted for 20 % (6/30) cases. This was followed by fall from height 10% (3/30), street injury 10 % (3/30) and assault 6.66% (2/30).

Majority of the study subjects presented with Pain in abdomen (71.66%), followed by Tenderness (63.33%), Abdominal distension (41.66%), Dyspnea (20%), Nausea-Vomiting (30%) and Shock (18.33%).

In a study by Hussain Ahmed *et al*[1], the observed that the pain was the most common presenting symptom (56.66%). Distension of abdomen was the next in frequency with 6 patients (20%), followed by vomiting (10%) and dyspnea (10%). One patient (3.33 %) had oliguria. Among the physical signs, abdominal tenderness was the most common physical finding being present in 19 (63.33%) patients. This was followed by abdominal distention in 10(33.33%) patients, tenderness over the chest in 9 (30%) patients, shock in 4 patients (13.33%),

Loris (1948) reported it to be the commonest symptoms of abdominal trauma. Whiteshell reported that pain constantly dominated the symptomatology of splenic laceration.[7][8] Tripathi *et al* reported pain in 91.4% of cases.[9]

Whiteshell reported that tenderness constantly dominated patient with splenic laceration. Tripathi *et al* reported tenderness in 91.4% of cases.

We classified the splenic injuries according to its grades. We observed Subcapsular hematoma among 18.33% cases, Intraparenchymal laceration among 30% cases, laceration with involvement of hilar vessels among 13.33% cases, Intra parenchymal laceration among 13.33% cases, Avulsed spleen with extensive perisplenic hematoma among 15% cases, and Completely shattered spleen among 10% cases.

CONCLUSIONS

It had been found that the commonest cause of splenic injury was road traffic accident. Young males between 20-30 years of age were the commonest sufferers of splenic injuries. Careful physical examination is the key point in early diagnosis. Investigation reports are complementary to physical findings. Early hospitalization, better methods of diagnosis, proper timely surgical intervention, availability of blood transfusion, closed clinical observation and nursing care are important contributory factors for reduction in mortality resulting from blunt splenic trauma.

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