

Prevalence and Risk Factors of Splenic Trauma in Qazi Husain Ahmad Hospital, Nowshera

Kamran Hakeem khan¹, Fazal Ghani², Kamran Ahmad³, Waseem Yar Khan⁴, Zahid Khan⁵, Mohammad Ismail Kan⁶

1.assistant prof general surgery QHAMC, Nowshera

2.associate prof general surgery QHAMC, Nowshera

3.associate prof general surgery QHAMC, Nowshera

4.professor of surgery QHAMC, Nowshera

5.professor of surgery QHAMC, Nowshera

6.medical officer general surgery QHAMC, Nowshera

Corresponding author: kamran hakeem khan

Email: kamranhakeemkhan@gmail.com

ABSTRACT

Objective: This study aimed to assess splenic trauma's prevalence and its contributing variables among patients presenting with blunt abdominal trauma to the surgical emergency department at Qazi Husain Ahmad Hospital Nowshera.

Material and methods: The study was conducted in the surgical wards of Qazi Husain Ahmad Hospital Nowshera between January 2020 and December 2021 and was cross-sectional and retrospective. Patients older than 11 or six hospitalized due to abdominal trauma were included. After receiving permission, a thorough medical history was taken, emphasizing the incident that led to the injury. Imaging results and surgical findings were used to assess each patient for splenic trauma. Age, gender, domicile, injury sources, and the existence of splenic damage were collected using a self-made proforma. SPSS version 22 was used for the statistical analysis.

Results: Out of 125 cases with abdominal trauma, 30 (23%) were deemed to have splenic damage. Most of the 30 people who participated in the study were between the ages of 20 and 32 (47%) and 31 and 40 (33%). Most of the 22 were male (74%), while just 08 were female (25%). The most prevalent cause of splenic trauma was a car accident (52%), followed by a fall (20%), a knife wound (18%), and a gunshot wound (13%).

Conclusion: According to the study's results, 23% of patients with abdominal trauma also suffered splenic injuries, most of whom were young men. Two of the most prevalent contributing causes were involved in these deaths: road traffic accidents (RTA) and falls from height.

Keywords: splenic trauma, causes, abdominal trauma

Tob Regul Sci. TM 2022;8(1): 2986-2991

DOI: doi.org/10.18001/TRS.8.1.227

INTRODUCTION

Among the primary causes of mortality in people under the age of 38-42, traumatic events have remained a therapeutic puzzle for a long time. 1 Economic and social repercussions (as a

consequence of treatment) and indirect ones (as a result of Rehabilitation and productivity concerns) affect the individual and the community at large. We can rule out any possibility of bleeding². Abdominal trauma is a leading cause of death, with fatality rates varying from 38% to 82% depending on the patient's specific clinical history and events that occurred after treatment was started. Regarding abdominal organs, the spleen and liver are the most vulnerable³. Both blunt and penetrating trauma are common causes of splenic injury. This means that splenic trauma is not age-specific. Modern surgical treatments for spleen injury have largely supplanted earlier, more passive means of therapy. Two, splenic injuries are common in both high- and low-income regions worldwide. Auto accidents, falls from considerable heights, and penetrating wounds like gunshots and stabs are common causes of death⁴. The spleen is a very pliable organ with immunological and hematological functions and is highly vascularized. The definition of splenic trauma is actual physical damage to the spleen, which is why it is classified as a kind of trauma⁵. This lymphatic organ beneath the left rib cage is susceptible to damage because of its position and consistency. In Western nations, blunt trauma is significantly more prevalent than penetrating trauma as a source of splenic damage, and the most common cause of blunt trauma is car accidents. The spleen may burst after being hit by a bullet, stabbed, or fractured.

On the other hand, more stomach injuries are probable under these conditions⁶. Most sources agree that blunt force is the norm, even if there are a few common threads in the literature about mechanism and origin. For the most part, sharp or piercing wounds were caused by road RTAs (road traffic accidents) or by knife wounds. 8 Approximately half of all splenectomies performed in India resulted from traumatic

injuries sustained in automobile accidents. The spleen was the organ most often damaged by this injuries⁷. method that is performed most often (31 percent). Among patients treated at Nigeria's Gombe Federal Teaching Hospital, 63% had had abdominal penetrating trauma. Stabbings (29%) and RTAs (31%) accounted for most injuries⁸. The spleen (at 30 percent) was the most often damaged organ when looking at the data separately from the small intestine and colon (at 41) in cases of combined trauma. This research aimed to examine the causes and prevalence of splenic trauma in the area⁹.

MATERIAL AND METHODS

Between January 2019 and December 2020, the surgical units of qazi Husain Ahmad hospital Nowshera participated in a cross-sectional and retrospective study. Patients older than 11 or six hospitalized due to abdominal trauma were included. Patients who had already passed away before diagnosis or declined to participate in the research were omitted. After receiving permission, a thorough medical history was taken, emphasizing the incident that led to the injury. Imaging results and surgical findings were used to assess each patient for splenic trauma. Surgeons with at least five years' experience performed all operations. Some data from the past was also utilized in addition to data from only one year. Age, gender, domicile, injury sources, and the existence of splenic damage were collected using a self-made proforma. Statistical Package for the

Social Sciences (SPSS) version 26 was used to analyze the data.

RESULTS

Out of 125 patients with abdominal trauma, 30 (23%) were determined to have splenic damage. A further investigation was conducted on these 30 cases to determine potential causes. The majority of the cases were between the ages of 20 and 32 (47%) and 16 and 20 (37%), followed by 6.5% of patients between the ages of 40-41 and 25, 3% of patients between the ages of 52 and 62, and 4.0% of patients older than 30 years. Most of the 22 people were male (74%), while just 08 were female (27%). Forty-four (74%) of the participants in the study were low-income. Table.1

Most cases of splenic trauma (51%) were caused by motor vehicle accidents, followed by falls (20%), knife wounds (17.0%), and gunshot wounds (13%). Table. 2

Table 1 Patients' age, gender, and socioeconomic position (n=30)

Variables	Statistics	
Age groups	20-32 years	14(47%)
	32-42 years	12(38%)
	42-52 years	02(07%)
	52-62 years	01(03%)
	> 61 years	02(04%)
Gender	Male	22(74%)
	Female	08(27%)
Socioeconomic status	Poor	22(74%)
	Middle	6(19%)
	Upper	2(07%)

Table 2: Cause-specific distribution of traumatic injury patients (n=30)

Causes	Frequency	Percentage
Road traffic	16	51%
Stab wounds	4	17%
Firearm injuries	4	13%
Falls	06	19%
Punches, kicks, blast	--	--

DISCUSSION

According to the World Health Organization, 17% of all diseases may be traced back to trauma, and persons between the ages of 16 and 48 are most vulnerable. More than 92% of all injuries occur in poor and medium-income countries¹⁰. The majority of the participants in this study were between the ages of 20 and 32 (47%) and 16 and 20 (33%), followed by 6.5% of cases

between the ages of 42 and 52, 3% of patients between the ages of 52 and 62, and the remaining 5.0% of cases were older than 62. Abebe K et al. 11. found that the median age of patients was 30, and 37% were in the 21-30 age range. However, according to Gangat SA et al., 87% of the individuals were in that age range¹². The bulk of the participants in this analysis was male (22, or 73%), whereas the proportion of female participants was somewhat lower at 08 (or 27%). Abebe K et al. 13. also found that men were disproportionately impacted, with a ratio of 5.3:1. Gangat SA et al. similarly found that men outnumbered women by a ratio of 73% to 27% in their research¹⁴. They found a median age of 22, a range of ages from 7 to 75 years old, and a modal age range of 21 to 31 years old in another Chaya PL et al. 11, which showed a male-to-female ratio of 6.40:1¹⁵. Previous studies have shown that males and younger people had a higher incidence of stomach injuries. This may be because males are more inclined to engage in risky behaviors, and younger generations have a natural affinity for and interest in the outdoors. 7,11-13

The prevalence of splenic trauma was shown to be 23% in this investigation¹⁶. This investigation was undertaken repeatedly by Aziz A et al. 15 to determine the frequency and kind of intra-abdominal lesions in victims of blunt abdominal trauma. In addition, they noted that 13 people (about 26% of the total) had had splenic damage. The prevalence of splenic damage was 29 (21%) in research by Naeem BK et al. 08, which evaluated the percentage of visceral injuries among those who had had abdominal trauma (either blunt or penetrating) 17. According to this research, 51% of splenic trauma cases were caused by automobile accidents, 19% by falls, 17% by knife wounds, and 13% by firearm injuries. 3 (41%) of the 07 patients had been involved in automobile accidents, 5 (35%) had been involved in workplace mishaps, and two (14%) had been injured in falls, as reported by Shahzad M et al. 18. from a tremendous height, and an attack on a single sufferer.

Similarly, Aziz A et al. found that traffic crashes accounted for 60% of events, which may be attributable to the overcrowding of Karachi's public transit system, which forces some passengers to take the difficult step of sitting on the tops of buses¹⁶. In addition, most bus drivers work shifts longer than twenty-four hours, and they commonly take drugs like opiates and hallucinogens, all of which contribute to poor decision-making and lead to countless deadly incidents¹⁷. Multiple studies conducted on a global scale have shown that car accidents are the leading cause of blunt abdominal injuries. 15 Most patients with direct splenic damage in our research were engaged in traffic accidents, indicative of the increasing motorization in this region and likely explains the high incidence of this kind of injury¹⁸. In this and other studies, researchers have shown that car accidents are the leading cause of splenic damage. 4,7,16 Lack of access to contemporary pre-hospital care and an inefficient ambulance system are significant barriers to providing adequate treatment for trauma patients¹⁹. The delay in concluding consideration has further exacerbated the negative results for these individuals. Our and other studies show that drivers who are careless on the road, don't maintain their vehicles properly, get behind the wheel under the influence of alcohol or drugs, or disregard traffic laws account for a

significant portion of all traffic fatalities and injuries²⁰.

CONCLUSION

According to the research results, 22.7% of patients with abdominal trauma also suffered splenic injuries, most of whom were young men. Two of the most prevalent contributing causes were involved in these deaths: road traffic accidents (RTA) and falls from height. Although splenic injuries are a leading source of mortality and morbidity in low-income countries, there have been few successful attempts to prevent them. Trauma patients, especially those suffering abdominal trauma, need a well-coordinated trauma care system and well-educated staff to get quality treatment. If roads were well maintained, commuter car overload was avoided, cars were serviced, and traffic laws were strictly enforced, the number and severity of these injuries would drop significantly.

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