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ORIGINAL ARTICLE

Frequency and Causative Factors of Splenic Trauma at Liaquat University Hospital/Jamshoro

RIAZ AHMED SHAH[1], SUHAIL AHMED SOOMRO[2], ABDUL SATTAR ABRO[3], MUHAMMAD FAHEEM AHSAN[4], SHAHNAWAZ KHATTI[5], ANEETA KUMARI[6]

[1]*Consutant general surgeon, Civil Hospital Badin*
[2]*Assistant Professor of surgery, Bilawal Medical College for boys LUMHS/ Jamshoro*
[3]*Assiatant Professor of surgery, SMBBMU Larkana*
[4]*Assiatant Professor of surgery, PIMS Hospital Islamabad*
[5]*Senior registrar of surgery, LUMHS/ Jamshoro*
[6]*Registrar, surgery department, Isra University Hospital Hyderabad*
Corresponding author: Suhail Ahmed Soomro, Email: Suhail.soomro77@hotmail.com

ABSTRACT

Objective: To evaluate the frequency and causative factors of splenic trauma in patients presented with abdominal blunt trauma at the surgical emergency of the Liaquat University Hospital Jamshoro (Hyderabad).

Material and methods: This was a cross-sectional and retrospective study, carried out at the surgical units of Liaquat University Hospital Jamshoro from December 2013 to November 2014. All the patients admitted with abdominal trauma, aged >12 years of either gender, were included. After taking informed consent, a complete medical history, especially regarding the cause of the injury, and a physical examination were done. All the patients were evaluated for splenic trauma after imaging diagnosis and operative findings. A self-made proforma was used for the data collection of age, gender, residence, causes of the injury, and presence of the splenic trauma. Data was analyzed by using SPSS version 26.

Results: A total of 250 cases of abdominal trauma were studied, and splenic trauma cases were found in 60 (22.7%). Out of 60 participants, most of the cases were aged 18 to 30 years (46.7%) and 31 to 40 years (38.3%). Males were seen in the majority of 44 (73.3%), while females were 16 (26.7%). According to the causative factors of the splenic trauma, road traffic accidents were the most common (51.1%), followed by falls (19.1%), stab wounds (17.0%), and fire arm injuries (12.8%).

Conclusion: As per the study conclusion, the young males mostly suffered from splenic trauma, which was observed to be 22.7% among patients with abdominal trauma. Road traffic accidents (RTA) and falls from height were observed to be the most common causative factors.

Keywords: abdominal trauma, splenic trauma, causes

INTRODUCTION

The traumatic incidents represent a long-standing therapeutic conundrum and are still one of the leading causes of death in the population under the age of 40.[1] The direct and immediate cost, as well as the economically and socially ramifications (as a result of treatment) and the indirectly one (as a Rehabilitation and productivity issues) have an impact on the neighborhood as well as the person. There is no chance that bleeding occurs.[1] One of the most common types of abdominal trauma is causes of mortality, with percentages ranging from 40% to 80%, based on the particular clinical history and events that followed since the initial therapy.[1] Spleen and the liver are the two abdominal organs that are most prone to damage.[2,3] Splenic damage is frequently caused by a blunt or penetrating trauma. Splenic trauma can therefore happen at any age. The current methods of operative care of splenic damage have replaced initially observational management procedures.[2] Splenic injuries happen everywhere, in both developed and underdeveloped nations. The frequent causes include car accidents, falls from great heights, and piercing wounds like gunshot and stabbing.[4] The spleen is an extremely vascular, friable organ with immunological and haematological activities.[5,6] Splenic trauma is by definition an actual physical injury to the spleen. Due to its location and consistency, this lymphatic organ under the left rib cage is extremely vulnerable to injury, particularly blunt trauma. Road traffic accidents are the most frequent cause of blunt trauma, which is by far more common in Western countries than penetrating trauma as a source of splenic injury.[5] Penetrating wounds like gunshots, stabbings, or broken bones, can cause the spleen to rupture. However, however in these circumstances, the likelihood of additional intra-abdominal injuries is considerable.[5,7] There are various trends regarding the kind and genesis of the majority of literatures suggest that 85 percent of the time, blunt is indeed the mechanism used. Road RTAs (road traffic accidents) and stab wounds were the most frequent reasons of blunt or penetrating wounds, respectively.[8] As per a study conducted in India, road traffic accidents account for the majority of blunt injuries (53 percent), and the most often affected organ was the spleen (53 percent), and splenectomy was the most frequently done procedure (30 percent).[8,9] According to a study conducted in Nigeria at the Gombe Federal Teaching Hospital, most patients (63.9%) had penetrating trauma of the abdomen. The two most frequent causes were stabbings (28.1%) and RTA (30.3%). The small bowel and colon (40.7 percent) were the most wounded in combined trauma, but the spleen (29.8 percent) was the most often injured organ when considered in isolation. [8,10] This study has been done to evaluate the causative factors and frequency of splenic trauma at the local level.

MATERIAL AND METHODS

This was a cross-sectional and retrospective study, carried out at the surgical units of Liaquat University Hospital Jamshoro, December 2013 to November 2014. All the patients admitted with abdominal trauma, aged >12 years of either gender, were included. All the patients who died before the diagnosis and those who did not agree to participate in the study were excluded. After taking informed consent, a complete medical history, especially regarding the cause of the injury, and a physical examination were done. All the patients were evaluated for splenic trauma after imaging diagnosis and operative findings. All the surgeries were done by experienced surgeons with a minimum experience of more than 5 years. Except for one-year data, a proportion of retrospective data was also used. A self-made proforma was used for the data collection of age, gender, residence, causes of the injury, and presence of the splenic trauma. Data was analyzed by using SPSS version 26.

RESULTS

A total of 250 cases of abdominal trauma were studied, and out of them, the frequency of splenic trauma was found to be 60(22.7%). These 60 cases were further studied to assess the causative factors. Most of the cases were aged 18 to 30 years (46.7%) and 31 to 40 years (38.3%), followed by 6.7% of cases were aged between 41 and 50 years, 3.3% were aged between 51 to 60 years, and the remaining 5.0% of cases were aged more than 60

years. Males were seen in the majority of 44 (73.3%), while females were 16 (26.7%). The majority of the study subjects, 44 (73.3%), were poor socioeconomically. Table.1

According to the causative factors of the splenic trauma, the road traffic accident was the most common 51.1%, followed by the falls 19.1%, stab wound 17.0% and fire arm injuries were 12.8%. Table. 2

Table 1: Distribution of patients according to age, gender and socioeconomic status n=60

Variables		Statistics
Age groups	18-30 years	28(46.7%)
	31-40 years	23(38.3%)
	41-50 years	04(06.7%)
	51-60 years	02(03.3%)
	> 60 years	03(05.0%)
Gender	Male	44(73.3%)
	Female	16(26.7%)
Socioeconomic status	Poor	44(73.3%)
	Middle	12(20.0%)
	Upper	04)06.7%)

Table 2: Distribution of patients according to cause of trauma n=60

Causes	Frequency	Percentage
Road traffic	31	51.1%
Stab wounds	10	17.0%
Fire arm injuries	08	12.8%
Falls	11	19.1%
Punches, kicks, blast	--	--

DISCUSSION

Trauma is the second-leading cause of sickness, accounting for 16% of all disorders worldwide, and it is most prevalent in those between the ages of 15 and 45. According to WHO, low- and middle-income countries account for more than 90% of all injuries.[8] In this study, most of the cases were aged 18 to 30 years (46.7%) and 31 to 40 years (38.3%), followed by 6.7% of cases aged between 41 and 50 years, 3.3% were aged between 51 to 60 years, and the remaining 5.0% of cases were aged more than 60 years. Consistently, Abebe K et al8 reported that the age group 20-29 years was the most common, at 37.2%, and the average age of the patients was 29 years. On the other hand, Gangat SA et al[5] reported that the majority of the participants (88.6%) were between 20 and 40 years old. In this study, males were seen in the majority with 44 (73.3%), while females were 16 (26.7%). Similarly, Abebe K et al[8] reported that the male-to-female ratio of 6.2:1 indicates that males were significantly affected. In the study of Gangat SA et al[5] also reported that the males were in the majority with 72.7% compared to females with 27.3%. In another study, Chalya PL et al[11] demonstrated that the ratio of men to women was 6.4:1, their median age was 22 years, their age range was from 8 to 74 years, and their modal age range was between 21 and 30 years. In line with prior research, abdominal injuries are more prevalent in men and in younger age groups. This could be because men are more likely to do dangerous things and because younger people are much more active and interested in doing things outside. [8,12-14]

In this study, the frequency of splenic trauma was found to be 22.7%. Consistently, Aziz A et al[15] conducted the study to evaluate the prevalence and type of intra-abdominal injuries in people who have suffered blunt abdominal trauma. And they reported that 13 individuals (about 26%) had splenic injuries. Naeem BK et al[16] also conducted the study to evaluate the proportion of visceral injuries among individuals having abdominal trauma (blunt or penetrating) and they reported that the frequency of splenic injury was 29 (20.7%).

In this study, according to the causative factors of the splenic trauma, road traffic accidents were the most common (51.1%), followed by falls (19.1%), stab wounds (17.0%), and fire arm injuries (12.8%). According to Shahzad M et al.[17] the 14 patients had a variety of splenic injuries, with 6 (42%) suffering from traffic accidents, 5 (36%) from industrial accidents, 2 (14%) from falls from great heights, and one patient being assaulted. Similarly, Aziz A et al[15] reported that 58 percent of incidents involved traffic collisions, may be due to Karachi's congested public transportation system, which leads to people risking serious injury by sitting on bus roofs.[15] Additionally, the majority of bus drivers work shifts longer than 24 hours at a time and frequently use drugs like opiates and hallucinogens, which causes them to make poor decisions and cause several tragic accidents. According to numerous international studies, the most frequent causes of blunt abdominal trauma are road accidents.[15] The high prevalence of blunt splenic injury in this study can be attributed to the fact that the majority of the patients with these injuries were involved in traffic accidents, which is a characteristic of the growing motorization in this area. According to the research literature, including this one, splenic injury is most frequently caused by road accidents.[5,8,18] Major obstacles to treating trauma patients include the lack of modern pre-hospital care in our society and the inefficient ambulance system for getting cases to hospitals. Due to the delay in final management, these factors have had a big effect on the bad outcomes for these people.[11] According to our and other research, a lot of traffic accidents are caused by drivers who aren't responsible or careful, don't keep their cars in good shape, drive drunk or high, or don't care about the rules of the road.[11]

CONCLUSION

As per the study conclusion, the young males mostly suffered from splenic trauma, which was observed to be 22.7% among patients with abdominal trauma. Road traffic accidents (RTA) and falls from height were observed to be the most common causative factors. Regardless of the fact that splenic injuries are one of the primary causes of death and morbidities in developing nations, strategies intended to stop the development of these injuries. In order to effectively care for trauma patients, particularly those with abdominal trauma, a coordinated trauma care system and adequately trained employees are required. The incidence and severity of these injuries can be reduced by improving road conditions, preventing commuter car overload, maintaining vehicles, and boosting traffic law enforcement.

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