



Assessment of 120 Cases of Splenic Injury and Splenectomy

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Abstract

Background: *The spleen is one of the most commonly injured intra-abdominal organs. The diagnosis and prompt management of potentially life-threatening hemorrhage is the primary goal. The present study was conducted to analyze the cases of splenectomy in study population.*

Materials & Methods: *The present study was conducted in the department of general surgery on 120 patients of both genders. General information such as name, age, gender etc. was recorded. In all patients, causes of spleen injury were evaluated.*

Results: *Out of 120 patients, males were 65 and females were 55. The difference was non-significant (P- 0.5). Age group 21-30 years had 9 males and 5 females, 31-40 years had 10 males and 12 females, 41- 50 years had 26 males and 18 females, >50 years had 20 males and 20 females. The difference was significant (P- 0.01). Common causes of spleen injury were blunt trauma (30), traffic accident (35), falling down (15), penetrating injury (25) and gunshot (15). The difference was significant (P- 0.01).*

Conclusion: *Spleen is the delicate organ which is susceptible to injuries. The common causes are penetrating injuries, road accidents, falling down, gunshot etc.*

Keywords: *Gunshot, Spleen, Trauma.*

Introduction

Spleen is an important organ of the body. It play vital role in filtering the blood. Its structure is similar to that of lymph nodes. It is also known as lymphatic organ. The increase in the size of the spleen is hypersplenism which is characterized by presence of iron and hemoglobin deficiency, a significant decrease in leukocytes, platelets, diminished immune system. There is hyperplasia and hypertrophy of bone marrow as a compensatory phenomenon. Diseases of spleen are not uncommon. One of the condition

hypersplenism is seen in hypertensive and liver cirrhosis patients.¹ Trauma to spleen is also seen in case of road side accident. Excessive injury to spleen can leads to significant loss of blood from the body and life-threatening condition. The management of patients with spleen injury is best done conservatively or sometimes there is need to tackle the cases using operative salvage techniques. It has been observed that non-operative management may provide useful results and since three decades, it is considered preferred management aid.²

Only splenic injuries can be found in about 1/3rd of abdominal trauma and in 20–35% of patients in road side accident. The pattern of injury determines the trauma to the underlying vessels ultimately causing leakage of blood in the abdomen. Initially sometimes, hematoma which is formed does not bleed into the abdomen but may rupture and bleed in the first few days after injury, although rupture sometimes does not occur for weeks or months. Excessive trauma to the organ makes patient critically ill. Abdomen colic or pain makes the person in stress. Pain is due to the leakage of blood in the abdomen.³ The chances of referred pain to the left shoulder and left side of the abdomen increases. There are contractures of abdominal muscles leading to rigidity of the body. Excessive bleeding may in turn cause hypotension, there is sudden drop of oxygen level in the body leading to blurred vision, confusion, and unconsciousness.⁴ The present study was conducted to analyze the cases of splenectomy in study population.

Materials & Methods

The present study was conducted in the department of general surgery. It comprised of 120 patients of both genders. All were informed regarding the study and written consent was

obtained. Ethical clearance was obtained from institutional ethical committee.

General information such as name, age, gender etc. was recorded. In all patients, causes of spleen injury were evaluated. Results thus obtained were subjected to statistical analysis using chi- square test. P value less than 0.05 was considered significant.

Results

Table I Distribution of patients

Total- 120		
Males	Females	P value
65	55	0.5

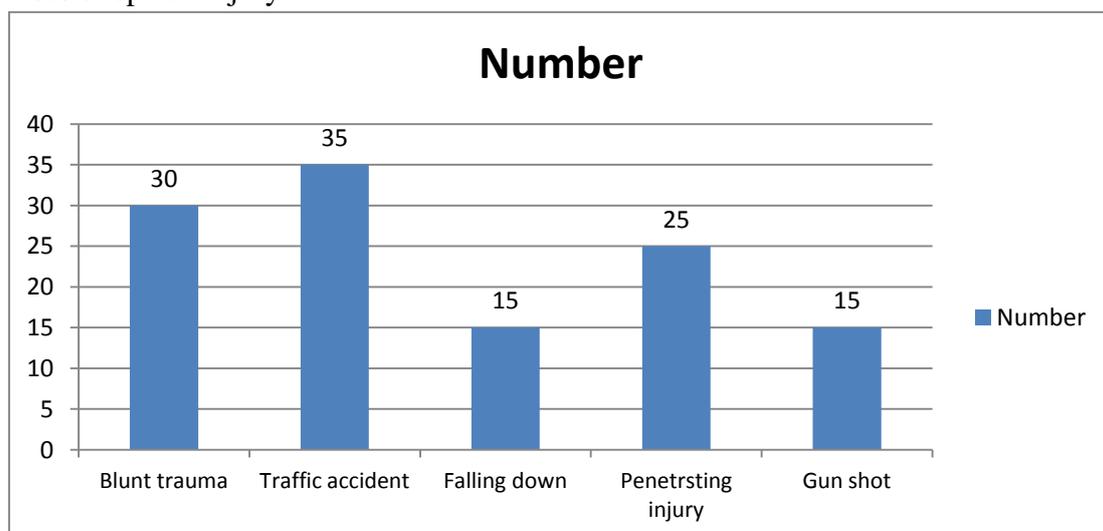
Table I shows that out of 120 patients, males were 65 and females were 55. The difference was non-significant (P- 0.5).

Table II Age wise distribution of cases

Age group (years)	Males	Females	P value
21-30	9	5	0.01
31-40	10	12	
41-50	26	18	
>50 years	20	20	
Total	65	55	

Table II shows that age group 21-30 years had 9 males and 5 females, 31-40 years had 10 males and 12 females, 41- 50 years had 26 males and 18 females, >50 years had 20 males and 20 females. The difference was significant (P- 0.01).

Graph I Causes of spleen injury



Graph I shows that common causes of spleen injury was blunt trauma (30), traffic accident (35), falling down (15), penetrating injury (25) and

gunshot (15). The difference was significant (P- 0.01).

Discussion

In cases of spleen injury, best management is conservatively. However, the chances of splenectomy cannot be overlooked. In severe injury, emergency splenectomy is performed which is proved life saving procedure for the patient. The indications for splenectomy include traumatic injuries and penetrating traumas. Idiopathic thrombocytic purpura is one of the condition which demands elective and emergency splenectomy and it can be safely performed in these patients.⁵

Liangpunsakul et al⁶ in their study reported that 75% to 85% of cirrhotic patients with portal hypertension had different degrees of splenomegaly and hypersplenism. Authors suggested various treatment modalities for patients such as percutaneous injections, splenectomy, medicinal therapy, thermal ablation like radiofrequency ablation, microwave ablation, and high-intensity focused ultrasound (HIFU). Some patients require radiotherapy. Traffic accidents (RTA) are the principal reason for blunt traumas that require splenectomy. Stab wounds are the most frequent cause for penetrating injuries. Splenectomy is the conventional cure of option when patients with hypersplenism are indicative, with bleeding disorders or hemolytic anemia. Hypersplenism-induced blood cell destruction can be diminished by splenectomy. This procedure proves efficient in limiting blood loss from esophageal varices and in correcting thrombocytopenia. Results have shown that it decreases portal pressure and reverse hypersplenism.⁷

A study by Amit et al⁸ divided patients into four different groups: cases who have additional injuries in addition to splenic injury (group 1), cases who have no additional injuries other than splenic injuries (group 2), iatrogenic splenic injuries (group 3), elective splenectomies (group 4). These four groups were evaluated for demographic features, etiology, surgical procedure, duration of operation, morbidity and mortality parameters. Among 129 patients 58

were females (44.9%) and 71 were males (55.1%). Mean age was 49.5 (13-82). There were 23 patients in group I (17.9 %), 18 patients in group II (13.9%) , 10 patients in group III (7.7 %) , 78 patients in group IV (60.5 %). In total, 123 patients were treated by conventional splenectomy and 6 patients were treated by laparoscopic splenectomy.

In our study, out of 120 patients, males were 65 and females were 55. Age group 21-30 years had 9 males and 5 females, 31-40 years had 10 males and 12 females, 41- 50 years had 26 males and 18 females, >50 years had 20 males and 20 females. This is similar to Haas et al.⁹

A study by Gupta et al¹⁰ showed that out of 69 patients with hypersplenism, 26 underwent HIFU, 31 underwent surgical splenectomy and 12 underwent partial splenic embolization. After giving treatment in all patients, they were followed for 6 months to record improvement. Patients who underwent splenectomy showed improvement in terms of increasing peripheral blood cells. Embolization condensed the operating time and hospital stay, but HIFU was relatively safer and less invasive than the other treatments. High-intensity focused ultrasound has wide clinical indications for hypersplenism and may be safer than other treatment methods. Therefore, it is a good alternative procedure for patients with a high surgical risk.

Conclusion

Spleen is the delicate organ which is susceptible to injuries. The common cause are penetrating injuries, road accidents, falling down, gun shot etc.

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