Int J Biol Med Res. 2026; 17(3): 8657-8659

Contents lists available at BioMedSciDirect Publications

International Journal of Biological & Medical Research

Journal homepage: www.biomedscidirect.com

Short Report

Study of 50 Cases with Blunt Abdominal Trauma

Dr. Hitendra K. Desai[1], Dr.Rajesh K. Patel[2], Dr.Gautam Dalsaniya[3], Dr.Rajnish R. Patel[4]

[1]Associate professor , [2]Associate professor HG , [3]Resident Doctor , [4]Professor Department of General Surgery, B.J. Medical College & Civil Hospital, Ahmedabad, India

A R T I C L E I N F O

Keywords:
Blunt abdominal trauma,
Rapid diagnosis,
Morbidity,
Mortality

A B S T R A C T

Background: Blunt abdominal trauma (BAT) is a significant cause of morbidity and mortality, accounting for the majority of abdominal injuries. Rapid diagnosis and appropriate management are crucial for reducing preventable deaths. Aim: To analyze management strategies and outcomes in 50 patients with BAT. Methods: A prospective observational study was conducted on 50 patients admitted with BAT between February 2023 and January 2025. All underwent clinical examination, relevant investigations, and imaging (FAST, USG, CT) as indicated. Management was conservative or operative based on hemodynamic stability and imaging findings. Results: Majority were males (72%) aged 30–40 years. Road traffic accidents (60%) were the leading cause. Liver (37%) and spleen (33%) were the most frequently injured organs. Conservative management was successful in most solid organ injuries. Operative intervention was required for bowel and mesenteric injuries. Conclusion: A systematic approach, prompt imaging, and selective non-operative management improve outcomes in BAT.

© Copyright 2026 BioMedSciDirect Publications IJBMR -ISSN: 0976:6685.

INTRODUCTION

Blunt abdominal trauma continues to be a major challenge in trauma care. The abdomen is the third most commonly injured region following head and chest. Solid organs such as the liver and spleen are the most frequently affected. With advances in imaging and monitoring, non-operative management (NOM) has become the standard for stable patients, whereas surgery is reserved for hemodynamically unstable or hollow viscus injuries [1-4].

MATERIALS AND METHODS

This was a prospective observational study conducted on 50 patients with blunt abdominal trauma admitted to a tertiary care hospital between February 2023 and January 2025 The study protocol received approval from the Institutional Ethics Committee (IEC) of B. J. Medical College & Civil Hospital, Ahmedabad.Written informed consent was obtained from all participants.

All patients underwent detailed history, examination, and appropriate investigations such as FAST, USG abdomen–pelvis, and CT scan in stable cases.

Inclusion criteria : included patients aged above 13 years with evidence of blunt abdominal trauma.

Exclusion criteria : Age below 13 year were penetrating injuries, major head, thoracic, or limb trauma.

Data was collected by detailed history and clinical examination using standardized case record form. Management decisions were based on clinical assessment and radiological imaging like FAST , USG , CECT abdomen and pelvis .

Management protocol:

1.Conservative management included IV fluids, analgesia, antibiotics, and monitoring and bed rest .Blood transfusion given as when required.

2.Operative management was reserved for peritonitis, hemodynamic instability, and hollow viscus perforation.

***Corresponding author:**

Dr. Gautam Dalsaniya
Department of General Surgery,
B.J. Medical College & Civil Hospital,
Ahmedabad, India
Email: gautamd721@gmail.com

How to cite this article:

Hitendra K. Desai, Rajesh K. Patel, Gautam Dalsaniya, Rajnish R. Patel. Study of 50 Cases with Blunt Abdominal Trauma. Int J Biol Med Res. 2026; 17(3): 8657-8659. https://doi.org/10.65048/ijbmr.2026.17.3.8657.1062

https://doi.org/10.65048/ijbmr.2026.17.3.8657.1062
Received: 25 February 2026; Accepted: 20 May 2026; Published: 3 July 2026

IJBMR -ISSN: 0976:6685. ©Copyright 2026. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
Published by BioMedSciDirect Publications

RESULTS

Out of 50 patients,

1.72% were males with male to female ratio 2.6:1 .

2.The most common age group was 30–40 years.

3. Road traffic accidents accounted for 60% of cases, followed by assault (28%) and fall from height (12%).

4.Abdominal pain and tenderness were the most common presenting features presented in 100% .

5. FAST was positive in 82% of cases with good accuracy in solid organ injury like liver ,spleen and renal injury with poor accuracy in pancreatic and bowel injury , and CT scan had 100% diagnostic accuracy with good accuracy in pancreatic injury ,bowel and mesenteric injury .

6.Liver (37%) and spleen (33%) were the most frequently injured organs.

7.Conservative management was successful in most solid organ injuries . Liver injury 94% , spleenic 82% , renal injury 100% , pancreatic injury 66% were managed conservatively . Endoscopic stenting requried in pancreatic injury. Urinary bladder injury 100% managed conservatively.

8.Operative intervention was required for 100% bowel injuries and 66% mesenteric injuries with emergency exploratory laparotomy .

Table 1: Distribution of Organ Involvement in 50 Cases of Blunt Abdominal Trauma

Organs	No. of Cases (n=50)	%
Liver	19	37%
Spleen	17	33%
Kidney	8	15%
Pancreas	3	6%
Duodenum	1	2%
Small Bowel	3	6%
Mesentery	3	6%
Urinary Bladder	1	2%

Table 2: Organ-wise Management in Blunt Abdominal Trauma

Organs Involved	No. of Patients	Conservative Management	Operative Management
Liver	19	18 (94%)	1 (6%)
Spleen	17	14 (82%)	3 (18%)
Pancreas	3	2 (66%)	1 (34%)
Kidney	8	8 (100%)	–
Small Bowel	3	–	3 (100%)
Duodenum	1	–	1 (100%)
Mesentery	3	1	2
Urinary Bladder	1	1 (100%)	–

Table 3 : Diagnostic investigation

Diagnostic Modality	Used in (n=50)	Positive Result (%)
FAST	50	82%
USG Abdomen + Pelvis	50	95%
CT Scan Abdomen + Pelvis	15	100%

DISCUSSION

Blunt abdominal trauma remains one of the most challenging emergencies in trauma care, particularly due to its varied presentation, diagnostic difficulty, and the need for timely management. In the present study of 50 patients, males predominated (72%), reflecting higher exposure to outdoor activities and vehicular travel, similar to trends reported globally. [5] The most commonly affected age group was 30–40 years, indicating that the economically productive age population remains at highest risk. Road traffic accidents constituted the leading cause (60%), followed by assault and falls, underscoring the need for improved road safety awareness and trauma systems [5,6].

Clinical presentation was dominated by abdominal pain and tenderness in all patients, reinforcing the importance of thorough clinical examination in BAT cases. FAST was positive in 82% of patients and proved highly useful for detecting hemoperitoneum and solid organ injuries; however, its limitations in bowel, mesenteric, and pancreatic trauma were evident. CT scan demonstrated 100% diagnostic accuracy in this study and remained the gold standard, especially for comprehensive organ injury assessment and grading, consistent with international literature [7,8]

Organ injury distribution in the current series showed that the liver (37%) was the most commonly injured organ, followed by the spleen (33%) and kidney (15%) (Table 1). This pattern corresponds well with other published studies where solid organ injuries dominate due to anatomical vulnerability and relative immobility of these structures. Pancreatic, bowel, duodenal, mesenteric, and urinary bladder injuries were less frequent but carried significant clinical implications [9,10]

A major highlight of this study is the excellent success of selective non-operative management (NOM). Conservative management was successful in 94% of liver injuries, 82% of splenic injuries, and 100% of renal injuries, indicating that well-monitored NOM is safe and effective in hemodynamically stable patients. Pancreatic injuries were also managed conservatively in 66% cases with endoscopic stenting where required, mirroring modern management trends. Urinary bladder injuries were managed conservatively in all patients with favorable outcomes. These findings reaffirm the paradigm shift from mandatory laparotomy to conservative care facilitated by advanced imaging, ICU monitoring, and endoscopic interventional treatment [11].

However, hollow viscus and mesenteric injuries continued to require operative intervention. All small bowel (100%), duodenal (100%), and majority of mesenteric injuries (66%) underwent emergency exploratory laparotomy, highlighting the life-threatening potential of delayed diagnosis leading to peritonitis and sepsis. This is consistent with global literature which emphasizes surgery for gastrointestinal perforations and devascularized bowel segments due to risk of mortality if untreated These findings align with recent multicentric trauma analyses advocating NOM in hemodynamically stable patients with Solid organ injuries.

CONCLUSION

Blunt abdominal trauma demands prompt recognition and a structured management approach. Non-operative management is safe and effective in stable patients with solid organ injuries, while surgery remains vital for hollow viscus and mesenteric injuries. Early imaging, vigilant monitoring, and timely surgical intervention reduce morbidity and mortality.

REFERENCES

[1] Cusheri A, et al. Essential Surgical Practice. 4th ed. Oxford: Butterworth-Heinemann; 1998.

[2] Davis JJ, Cohn I Jr, Nance FC. Diagnosis and management of blunt abdominal trauma. Ann Surg. 1976;183(6):672–678.

[3] Patidar B, Sharma A, Gupta V. Clinical study on blunt abdominal trauma. J Acad Med Pharm Sci. 2024;14(2):45–49.

[4] Khanna R, Kumar M, Khanna S, et al. Spectrum of blunt abdominal trauma in North India. QJ Med Sci. 1999;92:325–330.

[5] Townsend CM, Beauchamp RD, Evers BM, Mattox KL. Sabiston Textbook of Surgery. 21st ed. Elsevier; 2022.

[6] Hamilton Baileys Emergency surgery 13 edition 2000:p446-471

[7] Joe jack davis ,Isidore Cohn ,Francis C. Nance;Diagnosis and management of Blunt abdominal trauma .Ann ,Surg,June 1976:vol183 No.6 ;p672-678

[8] Kundson MM, Maull KI. Non-operative Management of solid organ injuries –Past,present and future.SurgClin North Am 1999;79: 1357-71

[9] McConnell DB, Trunkey DD .Non operative management of abdominal trauma. Surg clin North Am 1990;70:677- 88

[10] Sabiston Text book of surgery .21st edition vol1:2004:p483-531

[11] Surgery of liver and biliary tract; L.H.Blumgartvol 1:3 edition 2000:1277-1318p

© Copyright 2026 BioMedSciDirect Publications IJBMR -ISSN: 0976:6685.