ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 12, pp.43046-43049, December, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

CLINICAL STUDY AND MANAGEMENT OF HOLLOW ORGAN VS SOLID ORGAN INJURY IN BLUNT ABDOMINAL TRAUMA

***Dr. Sushil Kumar, Dr. Bikram Kumar, Dr. Brajesh Kumar, Dr. R. S. Sharma and Dr. Sunay Damle**

General Surgery 3rd year, RIMS Ranchi

ARTICLE INFO

Article History:
Received 26th September, 2016
Received in revised form
18th October, 2016
Accepted 08th November, 2016
Published online 30th December, 2016

Key words:

Blunt abdominal trauma,
FAST,
CT-scan.

ABSTRACT

Abdominal injury as a result of both blunt and penetrating trauma has an appreciable mortalityrate from haemorrhage and sepsis. This study represents the experience with blunt trauma to the abdomen ofpatients from a tertiary care Centre. The study was undertaken to know the demographic details, mode of injury, management and outcome of blunt trauma abdomen (BTA). All the blunt trauma abdomen cases admitted inRIMS Ranchi during period of July 2014 to September 2016. There were 55 consecutive cases of blunt traumaabdomen. Most common age group involved was 30-40 years followed by 20 to 30 year. Male and Female ratio was 3:1. Most common mode of injury was RTA 47.2%. Diagnosis was established in all cases by clinicalexamination, X-ray, ultrasound or CECT. Spleen (49%) was the commonest organ injured next Liver (21.8%).67.2% (37patients) of cases underwent successful conservative treatment and 32.7% (18) operative treatment.Mortality was 10%.Non operative management (NOM) for BTA was found to be highly successful and safe.Definitive indications for laparotomy were hemodynamic instability and peritonitis. Patients with initial Hemodynamic instability are associated with a high risk of NOM failure. USG (FAST scan) in haemodynamically unstable patients as compared to CECT in stable patients were investigations of choice. Associated injuries influenced morbidity and mortality.

Citation: Sushil Kumar, Bikram Kumar, Brajesh Kumar, R. S. Sharma and Sunay Damle, 2016. "Clinical study and management of hollow organ vs solid organ injury in blunt abdominal trauma, *International Journal of Current Research,* 8, (12), 43046-43049.

INTRODUCTION

Blunt Abdominal Trauma (BAT) is a frequent emergency and is associated with significant morbidityand mortality in spite of improved recognition, diagnosis and management. Trauma is the leading cause of deathand disability in developing countries and the most common cause of death under 50 years of age. In World BAT is the 7th cause of mortality and abdomen is the third most common injured region. Abdominal injuriesrequire surgery in about 25% of cases. 85% of abdominal traumas are of blunt character. The spleen and liver are the most commonly injured organs as a result of blunt trauma. Initial resuscitation along with focusedassessment with sonography in trauma (FAST) and computed tomography (CT) abdomen are very beneficial todetect those patients with minimal and clinically undetectable signs of abdominal injury. There has beenincreasing trend towards non operative management (NOM) of blunt trauma amounting to 80% of the caseswith failure rates of 7-8%. NOM is a standard protocol for hemodynamically stable solid organ injured patients. Pre-hospital transportation, initial assessment, thorough resuscitative measures and correct diagnosis are ofutmost importance in trauma management.

****Corresponding author: Sushil Kumar,***
General surgery 3rd year, RIMS Ranchi.

MATERIALS AND METHODS

All the blunt trauma abdomen cases admitted in RIMS Ranchi during period July 2014 to September2016. After initial resuscitation, detailed clinical history, physical examination, laboratory tests and x-rays, ultrasonography (FAST) was done to arrive at the diagnosis. CT scan was done in some of the cases. The progress of patients was closely monitored and decision was taken to either continue with conservative management or to undertake laparotomy. Inferences were made for various variables like age, sex, cause ofblunt abdominal trauma, time of presentation of patient, various procedures employed, associated extra abdominal injuries, post-operative complications and mortality.

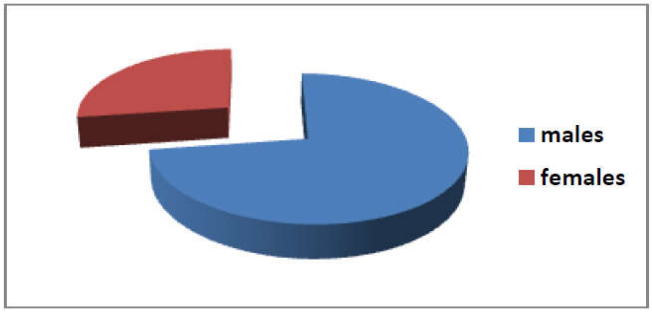
RESULTS

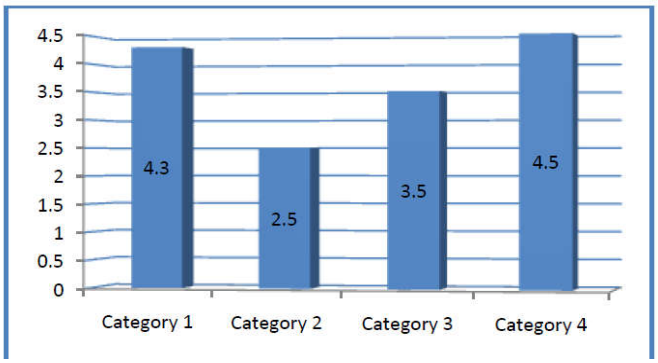
Sex Incidence: Out of 55 total cases of blunt abdominal trauma, 40(72.7%) were male and 15(27.2%) were female.

Age incidence: Patients of blunt abdominal trauma were divided in four age groups

In 14-20 age group total 7 (12.7%) cases were there out of which 4 were males an 3 were females. In 20-30 age group

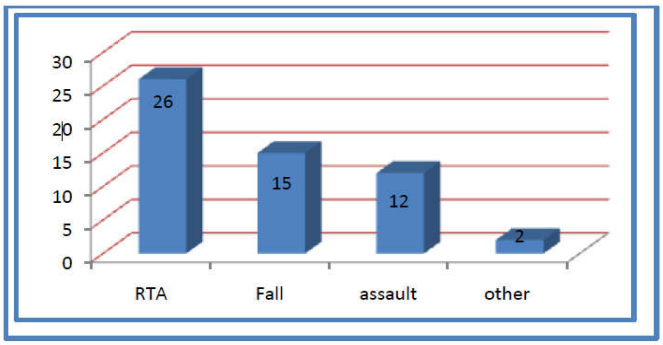
total 15(27.2%) cases were there out of which 14 were males and 1 was femaleIn 30-40 age group total 20(36.36%) cases were there out of which 14 were males and 6 were femalesIn >40 age group total 13(23.6%) cases were there out of which 8 were males and 5 were females.





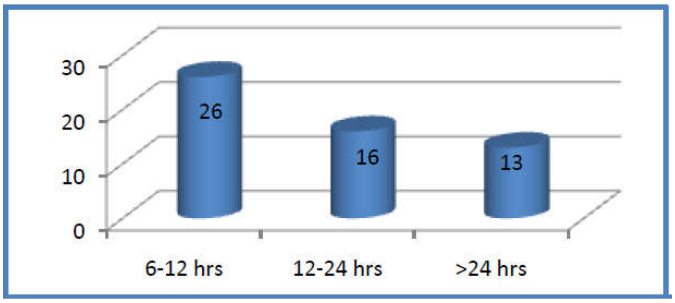
Mode of Injury

Cause of blunt abdominal trauma in study population was as follows- road traffic accidents in 26(47.2%) patients, fall from height in 15(27.2%) patients, assault in 12(21.8%) patients and other causes in2(3.6%) patients.



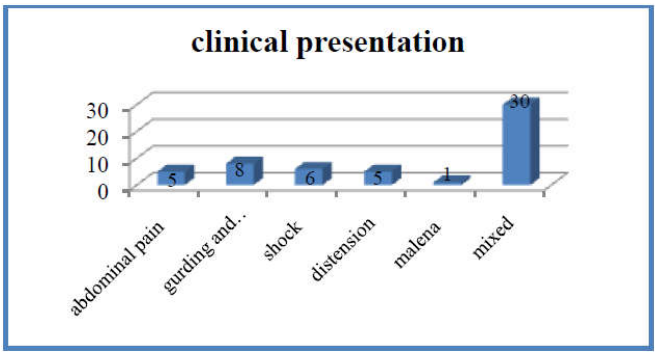
Time of presentation

Out of 55 cases, 26(47.2%) came to hospital within 12 hours of trauma; 16(29.09%) cases came within12-24 hours after trauma and 13(23.6%)patients came after 24 hours of trauma



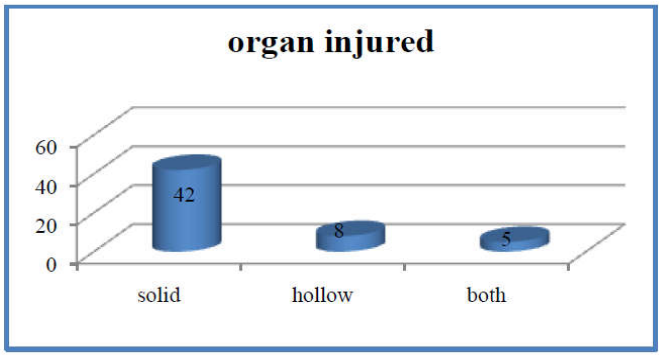
Clinical presentations

out of total 55 patients 5(9.09%) presented with abdominal pain, 8(14.5%)presented withdemonstrable guarding and rigidity, 6(10.9%) presented with features of shock, 5(9.09%) patients presentedwith abdominal distension,1(1.8%) patient presented with malena, and mixed sign & symptoms were seen in 30 (54.5%) cases.

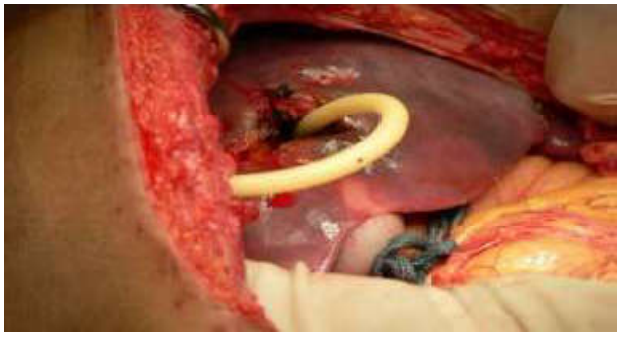


Organs injured

In the study population solid visceral injury was found in 42(76.3%) patients, hollow viscus injury wasfound in 8(14.5%) patients and both hollow & solid viscera were injured in 5(9.09%) patients.



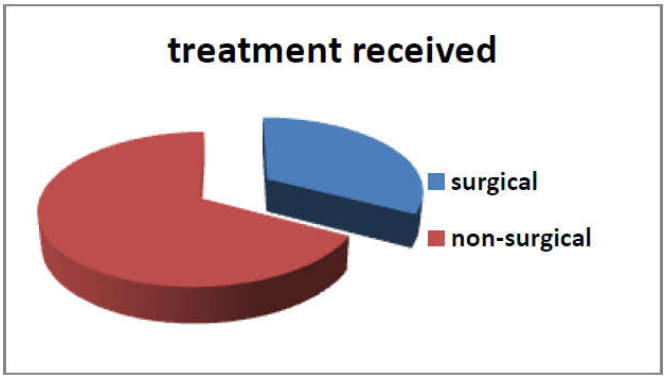
Blunt abdominal trauma with liver laceration



Liver laceration

Bowel transaction

Treatments received



Morbidity and Mortality

Mortality rate in our study was seen in 6(10%) cases. Commonest cause was polytrauma in 4 patientsfollowed by sepsis/ARF in 2 patients. Post-operative complications most frequently observed in our study wereSurgical site wound infection 16%, sepsis-(12%), abdominal dehiscence (5.4%), othercomplications (12.7%), traumatic pancreatitis-1(1%).

DISCUSSION

Blunt abdominal trauma is a hazardous task. Abdominal findings may be absent in 40% of patientswith haemoperitoneum. Sometimes clinical evaluation of blunt abdominal injuries may be masked by othermore obvious external injuries. Unrecognized abdominal injury is a frequent cause of preventable death after trauma. The patients who had sustained blunt abdominal trauma may have sustained injury simultaneously toother systems and it is particularly important to examine for injuries of head, thorax and extremities. 55 cases inour study with age of presentation is above 14 years. Male female ratio-3:1. Spleen (49%) was the commonestorgan injured next liver (21%). Liver injuries were managed conservatively in most of the cases and in somecases hepatorraphy was done (6). Splenic trauma in our study were managed either conservatively orsplenectomy. Bowel perforation were managed by primary repair and resection - anastomosis. Nephrectomywas done in-1 patients. Laparotomy and bladder repair was done in 1 patients. Abdominal injuries wereassociated with various extra-abdominal injuries amongst which most common were rib fractures. Nonrecognitionof an extra abdominal injury may contribute to the patient`s death when a relatively simple proceduremight otherwise have saved the patient's life. Commonest post-operative complication in our study was woundinfection and was managed by debridement and serial dressing. Early diagnosis can decrease mortality by 50%.

Mortality is related to delayed presentation and diagnosis, associated injuries and delayed surgical intervention.

Conclusion

Following Conclusions Can Be Drawn From This Study

1. Conservative management is the treatment of choice in clinically stable patients. In patients not respondingto conservative management or those with severe injuries; surgical treatment is needed.
2. Road traffic accident is the most common cause of such injuries. Road side safety measures and dedicatedtrauma centers near accident prone areas is necessary to limit the associated morbidity and mortality.
3. Males are more commonly injured in cases of blunt abdominal trauma. Incidence is highest in 30-40 yearsage group which is young and productive age group.
4. Plain X-ray abdomen is very useful investigation in blunt trauma abdomen cases more so in cases of hollowviscus injury.
5. Diagnostic peritoneal lavage; in recent times is not used commonly as it is invasive and can lead tounnecessary complications.
6. Ultrasound examination gives fairly good idea about solid organ injury and fluid collection. It has playedimportant role in decreasing the popularity of diagnostic peritoneal lavage.
7. The most common viscera injured in present study is spleen followed by liver.
8. Small intestine is the most commonly injured hollow viscus in this study.
9. While most of the solid viscera injuries were managed conservatively; surgical treatment was verycommonly needed in cases of hollow viscus injury.
10. Most of the patients in this study recovered without any complication.
11. Surgical wound infection was most common complication overall.
12. Other complications noted are; respiratory tract infection and fever, pancreatitis.
13. Mortality in present study is low.
14. A thorough and repeated clinical examination and appropriate diagnostic investigation is necessary forsuccessful treatment of such patients.

REFERENCES

Ahmet K, Tongue Y. Blunt abdominal trauma: Evaluation of diagnostic options and surgical outcomes. *Turkish J Trauma EmergSurg*., 2008; 14:205-10.

Article Titles-2,576 Ultrasounds for Blunt Abdominal Trauma Dolich, Matthew O. MD; McKenney, Mark G. MD, FACS; Varela, J. Esteban MD; Compton, Raymond P. MD; McKenney, Kimberly L. MD; Cohn, Stephen M. MD, FACS.

Blunt Trauma to Abdomen in Rural Setup: A Multiple Case Study by ShantanuKulkarni*et al*

Injury Volume 47, Issue 9, September 2016, Pages 2006–2011,CT scan and Diagnostic Peritoneal Lavage: towards a

betterdiagnosis in the area of nonoperative management of blunt abdominal trauma Nathalie Chereaua*et al*

Isenhour JL, Marx J August 2007. "Advances in abdominal trauma". *Emerg Med Clin North Am*., 25 (3): 713–33, ix.doi:10.1016/j.emc.2007.06.002. PMID 17826214.)

Journal of Trauma-Injury Infection & Critical Care: January 2001 - Volume 50 - Issue 1 - pp 108-112

Ministry of Health and Family Welfare. Integrated Disease Surveillance Project- Project Implementation Plan 2004-2009. NewDelhi: Government of India; 2004:1-18.

Mukhopadhyay M. October 2009. "Intestinal Injury from Blunt Abdominal Trauma: A Study of 47 Cases". *Oman Med J*., 24 (4):256–259. doi:10.5001/omj.2009.52. PMC 3243872 . PMID 22216378

Raza *et al*. Non operative management of abdominal trauma – a 10 years review. *World Journal of Emergency Surgery,* 2013 8:14.

Retrospective and Prospective Study of Management and Outcome of Blunt Abdomen Trauma In Tertiary Health Center In Last5-Year 2009-2014 R. S. Raikwar1, Abhay Brahmane2, SachinArora

Saxena AK, Nance ML. Abdominal trauma. http://emedicine.medscape.com/article/940726-overview

Udeani J, Steinberg SR. Blunt abdominal trauma. http://emedicine.medscape.com/article/433404-overview

****