

Our Experience in Blunt Trauma Abdomen

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Abstract: Abdominal injury as a result of both blunt and penetrating trauma has an appreciable mortality rate from haemorrhage and sepsis. This study represents the experience with blunt trauma to the abdomen of patients from a tertiary care centre. The study was undertaken to know the demographic details, cause of injury, management and outcome of blunt trauma abdomen (BTA). All the blunt trauma abdomen cases admitted in SSIMS&RC hospital during period of Nov 2013 to Nov 2014. There were 65 patients with abdominal trauma. Most common age group involved was 32±5years. Male and Female ratio 15:1. Most common mode of injury was RTA 43(66%). Associated injuries present in 48(74%) cases. Diagnosis was established in all cases by either ultrasound or CECT. Liver (26%) was the commonest organ injured next spleen (20%). 81% (53 patients) of cases underwent successful conservative treatment with a failure rate of 7.5% (4 patients) and 19% (12) operative treatment. Mortality was 20%. 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 for NOM failure. USG (FAST scan) in haemodynamically unstable patients, CECT in stable patients were investigations of choice. Associated injuries influenced morbidity and mortality.

Keywords: Blunt Trauma Abdomen (BTA), Non operative management (NOM), Focused assessment with sonography in trauma (FAST SCAN) and Contrast enhanced computer tomography (CECT).

1. Introduction

Blunt abdominal trauma (BAT) is a frequent emergency and is associated with significant morbidity and mortality in spite of improved recognition, diagnosis and management. Trauma is the leading cause of death and disability in developing countries and the most common cause of death under 45 years of age. In World BAT is the 7th cause of mortality and abdomen is the third most common injured region. Abdominal injuries require surgery in about 25% of cases. 85% of abdominal traumas are of blunt character¹. The spleen and liver are the most commonly injured organs as a result of blunt trauma. Initial resuscitation along with focused assessment with sonography in trauma (FAST) and computed tomography (CT) abdomen are very beneficial to detect those patients with minimal and clinically undetectable signs of abdominal injury. There has been increasing trend towards non operative management (NOM) of blunt trauma amounting to 80% of the cases with failure rates of 7-8%. NOM is a standard protocol for hemodynamically stable solid organ injuries. Pre-hospital transportation, initial assessment, thorough resuscitative measures and correct diagnosis are of utmost importance in trauma management².

2. Materials and Methods

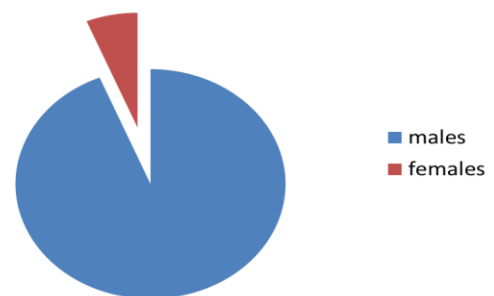
All the blunt trauma abdomen cases admitted in SSIMS&RC hospital during period of Nov 2013 to Nov 2014. After initial resuscitation, detailed clinical history, physical examination, laboratory tests and x-rays, ultrasonography (FAST) was done to arrive at the diagnosis. CT scan was done in most of the 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 of blunt abdominal trauma, time of presentation of

patient, various procedures employed, associated extra abdominal injuries, post-operative complications and mortality.

3. Results

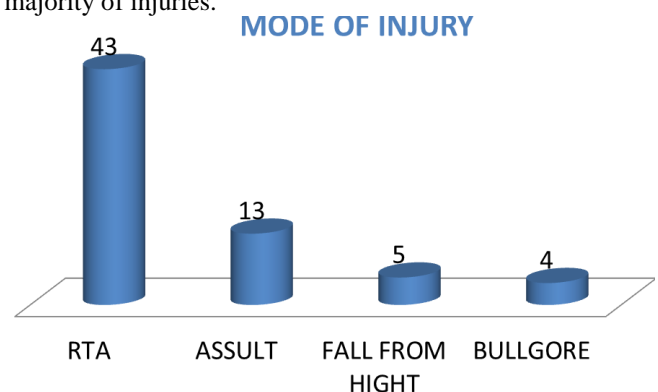
3.1 Demographic Profile

We included 65 blunt trauma patients, 61(93.8%) were males and 4 (6.2%) females. mean age was 32 years.



3.2 Epidemiological Factors

Road traffic accidents accounted for 66%(43 patients) majority of injuries.



3.3 Time of Presentation

More than half of the (38) patients presented within 4 h of the incident to us.

3.4 Abdominal Injuries

X-ray abdomen, ultrasound abdomen and CT scan abdomen and pelvis were done and multiple injuries were revealed. Liver 17 (26%) was the commonest organ injured next Spleen 13 (20%), Bowel 6(10%), Kidney 6(9%), Bladder& Uretra-4(6%), Pancreas-2(5%) And IVC-1(1.5%)

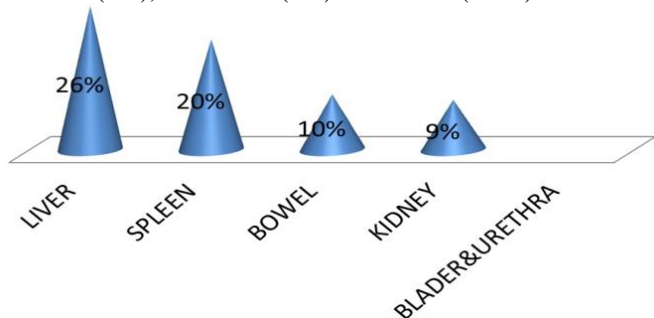


Figure: Grade 5 spleen injury

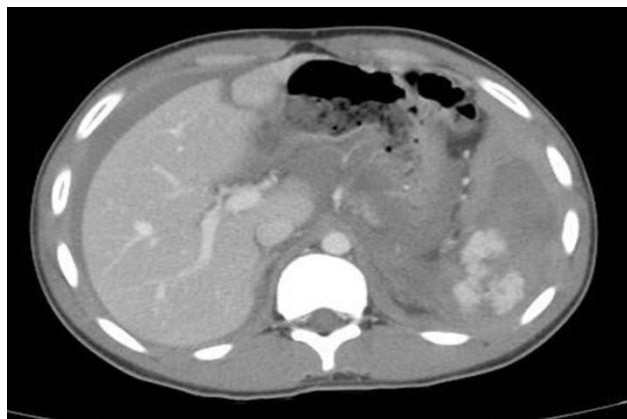


Figure: Grade 2 liver injury



3.5 Extra-abdominal injuries

Associated injuries seen in 30(46%)cases. Commonly associated extra-abdominal injuries were chest & ribs 18(28%), head injury 10 (15%), and bone fractures in 13 (20%). Most of the associated injuries were treated

conservatively where as haemothorax and pneumothorax required intercostal drainage.

3.6 Management

81% (53 patients) of cases underwent successful conservative treatment with a failure rate of 7.5% (4 patients) and 19% (12) operative treatment. Various procedures performed.

S. No	Procedures performed	No of cases
1	Splenectomy	3
2	Bowel Repair and Resection	5
3	Nephrectomy	3
4	IVC Repair	1



Figure: Ruptured spleen removed by splenectomy

3.7 Morbidity and Mortality

Mortality rate in our study was seen in 13 (20%) cases. Commonest cause was polytrauma in 11 followed by sepsis/ARFin 2 patients. Post-operative complications most frequently observed in our study were ARDS-7(11%), sepsis-6(9%), renal failure-4(6%), wound infection-4(6%), DVT-1, hemobilia-1 traumatic pancreatitis-1.

4. Discussion

Blunt abdominal trauma is an hazardous task even to the best of traumatologists. Abdominal findings may be absent in 40% of patients with haemoperitoneum. Sometimes clinical evaluation of blunt abdominal injuries may be masked by other more obvious external injuries³.Unrecognized abdominal injury is a frequent cause of preventable death after trauma⁴. The patients who had sustained blunt abdominal trauma may have sustained injury simultaneously to other systems and it is particularly important to examine for injuries of head, thorax and extremities. 65 cases in our study with mean age of presentation is 32±5. Male female ratio-13:1. Liver (26%) was the commonest organ injured next spleen (20%). All liver injuries managed conservatively. Procedures done for splenic trauma in our study were splenectomy in 3 patients. Bowel repair and resection was done in 5 patients. Nephrectomy was done in 3 patients. Laparotomy and bladder repair was done in 2 patients. IVC repair was done

in 1 patient. Abdominal injuries were associated with various extra-abdominal injuries amongst which most common were rib fractures (28%). Incidence of rib fracture was consistent with study conducted by Fazili et al⁵. Non-recognition of an extra abdominal injury may contribute to the patients' death when a relatively simple procedure might otherwise have saved the patient's life. Commonest post-operative complication in our study was ARDS 7(11%) were managed conservatively. Early diagnosis can decrease mortality by 50%⁶. Mortality is related to delayed presentation and diagnosis, associated injuries and delayed surgical intervention.

5. Conclusion

Non operative management (NOM) for BTA was found to be highly successful and safe. Hemodynamic stability along with ultra sound, CT scan and repeated clinical examination were the sheet anchors of NOM. Definitive indications for laparotomy were hemodynamic instability and peritonitis. Patients with initial Hemodynamic instability, haemorrhagic shock are associated with a high risk for NOM failure. USG in haemodynamic ally unstable patients, CECT in stable patients were investigations of choice. Associated injuries influenced morbidity and mortality.

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