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EVALUATION OF CT SCANNING EFFICACY AND FAST SCANNING EFFICACY IN BLUNT ABDOMEN TRAUMA PATIENTS

[1]*Jannat Anjum, [2]Muhammad Bilal and [3]Bushra Gull

[1]Sargodha Medical College, Sargodha.
[2]Faisalabad Medical University, Faisalabad.
[3]D.G. Khan Medical College, Dera Ghazi Khan.

***Corresponding Author: Jannat Anjum**
Sargodha Medical College, Sargodha.
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ABSTRACT

Objective: This study's main objective was to find CT and quick scans' efficiency in patients who suffer from blunt abdominal trauma in emergencies. **Place and Duration of Study:** This study was performed in Sargodha DHQ Teaching Hospital for seven months from May 2019 to November 2019. **Material and Methods:** This study included patients with blunt abdomen trauma and stable emergencies. Patients received routine CT and Fast scan investigations after the initial trauma protocol. Patients were informed and consent was obtained after a positive CT or FAST scan sign was found. The first FAST scan was received in patients, followed by a CT scan. The study excluded patients with negative scanning. In addition, X-rays were obtained from the abdomen and chest to exclude other abnormalities. All these patients received CT scans, although negative results were seen in patients. In all these patients both scans were obtained even after FAST scanning abnormalities. In addition to analysis of all organs, the abdomen and pelvis kept the fluid free. Passed the NG tube by decompressing the stomach to remove air. For better results, oral and IV contrasts were given. A delayed scan of suspected kidney injury was performed. Patients were described as positive and negative for any fluid or abdominal injury. **Results:** 56 patients were divided into 12 women and 44 men in this study. In emergencies, the most common age group was 18-40. The most frequent cause of trauma was RTA 58.9%, followed by a 32.1% decrease in altitude. Sport injuries included 7.1%, fighting history 0.18%. The most frequently injured organ was 73.2% liver, 46.4% kidney, 51.8% spleen and 12.5% pancreas. These 56 patients had both CT and FAST scanned. Positive results were found in 49 patients with a FAST scan (87.5%) but were missed in 7 patients (12.5%) and only one (1.6%) CT scan was missed. Fluid was divided into three groups: mild, moderate and severe. The presence of fluid is only mild in approximately 100-200 ml of a single amount of fluid. Moderate fluid was defined in 2 pelvic areas with a fluid of around 250-500 ml. The presence of fluids over 500 was markedly large in all areas.

KEYWORDS: Blunt Abdomen Trauma, FAST Scan, CT scan.

INTRODUCTION

Increased traffic is a significant source of road accidents, which adds to death and morbidity. Injury detection and prompt treatment decrease the mortality rate early shifting or patient. Motor vehicle accidents are one of the leading causes of abdominal trauma in emergencies. Unlike penetrating injury, this blunt trauma leads to unclear decisions without investigation. Several investigations are employed to diagnose internal injuries including FAST scanning, CT scanning and peritoneal diagnostic lavage. History and physical exam have a minor role in blunt abdominal trauma and DPL limits because they cannot be used in pregnant women or polytrauma patients. FAST scanning is now used worldwide and is a crucial component of the ATLS protocol. Free fluid can be detected with blood or gastric scan. FAST scans have limitations because the accuracy depends on the person performing the FAST scan and the machine resolution. Also, retroperitoneal injuries, blunt bowel or mesenteric wounds can easily be missed. CT scan has now become a gold standard for blunt abdominal trauma for several days, as its high sensitivity and imagery and the invention of a multidetector CT scan significantly reduced it.

MATERIAL AND METHODS

This study was performed in Sargodha DHQ Teaching Hospital for seven months from May 2019 to November 2019. This study included patients with blunt abdominal trauma in an emergency and who were strong stable. After initial trauma protocol patients were sent together with routine investigations for CT and Fast scan. Patients

were informed about the study, and consent was obtained after finding a positive sign for CT or FAST scans. The first FAST scan was sent to patients, followed by a CT scan. The study excluded patients with negative scans. Abdomen and chest X-rays were also obtained to exclude other abnormalities. CT scans have been obtained in all these patients, even if negative results have been seen in patients. Even following abnormalities in the FAST scan, both scans were obtained in all these patients. In addition to analyzing all organs, free fluid was maintained in the abdomen and pelvis. The NG tube was passed to remove the air by decompressing the stomach. For better results, oral and IV contrasts were given. A delayed scan was performed because of suspicion of renal injury. Patients with any fluid or visceral injury in the abdomen were described as positive and found to be negative.

RESULTS

A total of 56 patients with 12 females and 44 males were included in this study. The most common age group presented in an emergency was 18 to 40 years. Trauma was most often caused by RTA 58.9%, followed by a fall of 32.1% from a height. Sports injuries included 7.1% and fighting history 0.18%. The most frequently injured organ included 73.2 per cent liver, 46.4 per cent kidney, spleen 51.8 per cent and pancreas 12.5 per cent. In these 56 patients, both CT and FAST scans were performed. In 49 (87.5%) positive results with FAST scans were observed but missed in 7 (12.5%) of the patients, and only in 1 (1.8%) cases with CT scans were missed. Fluid-based hemoperitoneum was divided into three groups: mild, moderate, and severe. Only about 100-200 ml of presence or fluid in one area with fluid quantity has been labelled mild-moderate fluid in 2 pelvic spaces with a fluid quantity of approximately 250-500ml. Fluid presence in all areas over 500 was marked as gross.

DISCUSSION

RTA is the cause of most cases of blunt trauma. Mostly hollow visceral with liver, kidney and spleen are affected. 4 per cent - 15 per cent colon injuries have been observed. Visceral wounds must be operated at all costs, and the FAST scan can be easily missed. Different studies showed the FAST scan's specificity and sensitivity at around 95-100 per cent and 63-100 per cent. The average age group in our study was 18-40 years. This is because quick driving is seen in this age group. 49 of the 56 cases with the FAST scan were positive while seven were missed. Subcutaneous emphysema, bowel gas, and obesity, which hinder USG, are limited to FAST scanning. The volume in the abdomen is also a factor limiting. Branney and his colleagues have demonstrated that the less fluid to be detected in the abdomen is 619 ml in Morison pouch. The liver was the most frequently affected organ, followed by the kidney, spleen and pancreas. CT scan is the gold standard for grading liver injury. With the help of a multidetector CT scan, small bowel injuries can be detected. As shown in our study, CT scans are superior to FAST scans. Similar findings were reported in his study by Vadodariya et al. Both these tests have limitations and false-negative results can be obtained. A FAST scan cannot detect diaphragm rupture and retroperitoneal injuries. A great deal of experience is required for CT scanning and is not safe in unstable patients. In addition to these problems, the CT scan's capacity of high radiation levels can be limited.

CONCLUSION

Compared to FAST, CT Scan has the upper hand in detecting abdominal injuries. Despite the beneficial effects, a FAST scan for exploration requires some critical injuries. If the patient's condition is permitted, CT with USG abdomen should be performed.

REFERENCES

1. Feyzi A, Rad MP, Ahanchi N, Firoozabadi J. Diagnostic accuracy of ultrasonography in detection of blunt abdominal trauma and comparison of early and late ultrasonography 24 hours after trauma. Pak J Med Sci., 2015; 31(4): 980-3.
2. Neeki MM, Hendy D, Dong F, Toy J, Jones K, Kuhnen K, et al. Correlating abdominal pain and intraabdominal injury in patients with blunt abdominal trauma. Trauma Surg Acute Care Open, 2017; 2: 1–7.
3. Kendall J, Kestler A, Whitaker K, Adkisson M-M, Haukoos J. Blunt Abdominal Trauma Patients Are at Very Low Risk for Intra-Abdominal Injury after Emergency Department Observation. West J Emerg Med., 2011; 12(4): 496-04.
4. Elbaih AH, Abu-Elela ST. Predictive value of focused assessment with sonography for trauma (FAST) for laparotomy in unstable polytrauma Egyptians patients. Chin J Traumatol, 2017; 20(6): 323-8.
5. Waheed KB, Baig AA, Raza A, Ul Hassan MZ, Khattab MA, Raza U. Diagnostic accuracy of Focused Assessment with Sonography for Trauma for blunt abdominal trauma in the Eastern Region of Saudi Arabia. Saudi Med J., 2018; 39(6): 598-02.
6. Aboobakar MR, Singh JP, Maharaj K, Mewa Kinoo S, Singh B. Gastric perforation following blunt abdominal trauma. Trauma Case Rep., 2017; 10(3): 12-5.
7. Mohammadi A, Ghasemi-Rad M. Evaluation of gastrointestinal injury in blunt abdominal trauma "FAST is not reliable": the role of repeated ultrasonography. World J Emerg Surg, 2012; 7(1): 2-9.
8. Weile J, Nielsen K, Primdahl SC, Frederiksen CA, Laursen CB, Sloth E, Kirkegaard H.
9. Ultrasonography in trauma: a nation-wide cross-sectional investigation. Crit Ultrasound J., 2017; 9(1): 16-9.
10. Richards JR, Mcgahan JP. Focused Assessment with Sonography in Trauma (FAST) in 2017: What

Radiologists Can Learn. Radiology, 2017; 283(1): 30-48.
11. Afifi I, Abayazeed S, El-Menyar A, Abdelrahman H, Peralta R, Al-Thani H. Blunt liver trauma: a descriptive analysis from a level I trauma center. BMC Surg., 2018; 18(1): 42-9.
12. Mehta C, Shingade RG, Patel J, Parmar G. Isolated complete jejunal transection after blunt abdominal trauma: CT Imaging. J Clin Diagn Res., 2016; 10(3): 5–6.
13. Vadodariya K, Hathila VP, Mehta K. The role of computed tomography in management of blunt abdominal trauma conducted at Government tertiary hospital, Western India: A prospective observational study. Int J Sci Res., 2014; 3(2): 368-70.