شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

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HANAA ALY

Evaluation of the Management of Blunt Abdominal Trauma in Pediatric Patients in Ain Shams University Hospital: A Prospective Cohort Study.

Thesis

Submitted for Partial Fulfilment of M.D. Degree in Pediatric Surgery

By

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Mohamed Hassan Ahmed Mohamed

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List of Abbreviations

Abb.	Full term
AAST	*American Association for the Surgery of Trauma*
ALT	*Alanine aminotransferase*
AST	*Aspartate aminotransferase*
ATLS	*Advanced Trauma Life Support*
ATOMAC	*Arizona-Texas-Oklahoma-Memphis-Arkansas Consortium*
BAT	*Blunt abdominal trauma*
BATiC	*Blunt Abdominal Trauma in Children*
BLSI	*Blunt liver and spleen injuries*
CEUS	*Contrast enhanced Ultrasonography*
CPR	*Clinical prediction rule*
CT	*Computed tomography*
DPL	*Diagnostic peritoneal lavage*
FAST	*Focused abdominal ultrasound for trauma*
IAI	*Intra-abdominal injury*
ICU	*Intensive care unit*
ISS	*Injury severity score*
IVC	*Inferior cava vein*
MODS	*Multiple organ dysfunction syndrome*
NOM	*Non-operative management*
NPV	*Negative predictive value*
PECARN	*Pediatric Emergency Care Applied Research Network*
PMG	*Practice management guideline*
PUJ	*Pelvi-ureteric junction*
RBC	*Red blood cells*
RUG	*Retrograde urethrography*
SAE	*Splenic artery embolization*
SOI	*Solid organ injury*
UA	*Urinalysis*

INTRODUCTION

Abdominal trauma remains a significant cause of morbidity and mortality in infants and is one of the leading cause of solid organ injury (SOI). Accidents leading to polytrauma are the most common cause of death in children less than 16 years of age ***(Falcone et al., 2007; Cramer, 1995; Stauffer, 1995).***

If blunt abdominal trauma is encountered, course and prognosis depend decisively on the damage to solid and non-solid organs. Injuries to the pancreas and the genitourinary system generally do not lead to prompt death but may cause considerable permanent problems, such as hypertension or renal or pancreatic insufficiency. However, injuries to liver and spleen can lead to death. Children are at increased risk due to several reasons as low body weight, the force received is dissipated over a small surface area, less protection to their internal organs attributed to their weak muscles, less fat and maliable ribs. In certain scenarios, particularly in preverbal children or children with a decreased level of consciousness, identification of an abdominal injury can be challenging, and failure to detect these injuries initially can lead to preventable complications ***(Fayiga et al., 1994; Stauffer, 1995; Röher et al., 1997; Zwergel and Zwergel, 1993; Rose and Marzi, 1996).***

To provide optimal treatment for children with blunt abdominal trauma, rapid and appropriate clinical and radiologic diagnostics have to be performed.

Hemodynamically stable patients will undergo clinical examination and radiologic investigations. Computed tomography (CT) is the standard of care for the evaluation of suspected intra-abdominal injury (IAI) related to blunt abdominal trauma. It allows accurate grading of these solid organ injuries but remains less reliable for the diagnosis of intestinal and pancreatic injuries. Therefore, alternative methods for the safe and reliable diagnosis of IAI after blunt abdominal trauma need to be used.

The need for urgent laparotomy in children with blunt abdominal trauma depends on initial hemodynamic stability and the response to resuscitation. Currently, more than 90% of pediatric patients with IAI caused by blunt abdominal trauma will be treated conservatively ***(Beaver et al., 1987; Haftel et al., 1988; Kane et al., 1988; Taylor et al., 1988; Sherck and Oakes, 1990, Nastanski et al., 2001).***

Injured children are cared for not only at dedicated pediatric trauma centers but also in emergency departments and clinics that may not routinely evaluate children for these injuries. All clinicians who care for children with potential blunt abdominal injuries should be aware of current concepts

related to the diagnosis and treatment of pediatric blunt abdominal trauma.

The review will highlight issues in the evaluation and management of pediatric blunt abdominal trauma (BAT). We will examine the recent literature focusing on the utility of physical examination, laboratory data and imaging (both ultrasonography and computed tomography) in detecting IAI with illustration variable methods of management.

AIM OF THE WORK

Evaluation of our practice in management of SOI and non-SOI after blunt abdominal trauma in pediatrics and in using pelvi-abdominal CT as a diagnostic tool.