

JOHNS HOPKINS ALL CHILDREN'S HOSPITAL

Blunt Abdominal Trauma Clinical Pathway



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Owners: Trauma

This pathway is intended as a guide for physicians, physician assistants, nurse practitioners and other healthcare providers. It should be adapted to the care of specific patient based on the patient's individualized circumstances and the practitioner's professional judgment.

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Blunt Abdominal Trauma Clinical Pathway

Rationale: This clinical pathway was developed by a consensus group of JHACH physicians, advanced practice providers, nurses and pharmacists to standardize the management of children presenting with blunt abdominal trauma.

Background: Blunt abdominal trauma (BAT) is a frequent occurrence after many injury mechanisms and is an important consideration when abdominal trauma is suspected or patient presentation is concerning for abdominal injury. Abdominal trauma is a leading cause of mortality and morbidity and identification can be challenging.

Diagnosis: Reliable signs of blunt abdominal trauma include: pain, tenderness, GI hemorrhage, hypovolemia, and evidence of peritoneal irritation. The following physical examination findings may also indicate concern of occult abdominal injury: lap belt marks, steering wheel shaped contusions, flank umbilicus ecchymosis, abdominal distention, and auscultation of bowel sounds in the thorax, abdominal bruit, local or generalized tenderness, guarding, rigidity, or rebound tenderness, fullness or doughy consistency on palpation, crepitation or instability of the lower thoracic cage.

Lab tests: CBC, CMP, T&S, PT/PTT, amylase, lipase, AST, ALT, UA

Radiologic studies: chest and pelvis x-rays, CT abdomen/pelvis

Clinical Management

Determining stability of the patient on presentation is necessary to determine the immediate interventions necessary and to determine diagnostic and disposition options for treatment. Because penetrating injuries can be unseen injuries, a comprehensive assessment and high index of suspicion is necessary.

Assessment and intervention should be coordinated with a trauma team activation and care driven by ATLS protocol.

Emergency Center Management

Patients presenting with blunt abdominal trauma and concern for occult injury should have a level 2 trauma team immediately activated and ATLS protocols followed for initial assessment, correction of life threatening injuries, rapid secondary assessment, and disposition decision.

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Blunt Abdominal Trauma (BAT) Clinical Pathway

Blunt abdominal trauma (BAT)

- ATLS Primary/Secondary Survey + adjuncts: CXR, PXR, labs
- Determine hemodynamic stability
- Assess for immediate indications for OR (diffuse peritonitis, free air, evisceration)

Stable, no indication for immediate OR

Unstable

Immediate indication for OR

Indication for CT scan?

- Unreliable exam
- Abd wall contusion (e.g. seat belt sign)
- Multiple rib fractures or pelvic fracture
- AST/ALT >125, lipase >3x normal, UA RBC>20

Resuscitate, starting with 20 cc/kg bolus warmed isotonic crystalloid

Resuscitate, OR

No indication for CT

Yes, indication for CT

Vital signs stabilize

Vital signs remain unstable

- Transfuse PRBCs
- Consider MTP
- Consider FAST
- Assess response

Further workup and disposition per Trauma Team Leader (TTL)

CT abdomen/pelvis with IV contrast

Vital signs stabilize

Vital signs remain unstable

OR

Normal

Solid organ injury

Free fluid without solid organ injury

Free air, intraperitoneal bladder injury, diaphragm injury

Disposition per TTL (23h obs for seatbelt sign)

ICU vs. floor admission at TTL discretion (see APSA 2019 guideline)

Admit, serial abdominal exams

OR

Admission

Possible admission criteria include continued abdominal pain, failed PO challenge, positive abdominal CT, continued concern for occult injury with need for medical team serial examinations, and trauma team discretion.

All patient with an injury will be admitted to a surgical service under the direction of a trauma attending.

References

Streck et al. Evaluation for intra-abdominal injury in children following blunt torso trauma. Can we reduce unnecessary abdominal CT by utilizing a clinical prediction model? J Trauma Acute Care Surg. 2012 August ; 73(2): doi:10.1097/TA.0b013e31825840ab.

Eastern Association for the Surgery of Trauma - Management Guidelines
<https://www.east.org/education/practice-management-guidelines>

Updated American Pediatric Surgical Association Blunt Liver/Spleen Injury Guidelines. April 16, 2019
https://eapsa.org/apsa/media/Documents/APSA_Solid-Organ-Injury-Guidelines-2019.pdf

Christiano et al. Clinical significance of isolated intraperitoneal fluid on computed tomography in pediatric blunt abdominal trauma. Journal of Pediatric Surgery (2009) 44, 1242–1248.

Outcome Measures:

- Spleen removal
- Delayed presentation of injury with delayed operative management from time of initial injury
- Unexpected mortality or morbidity

Clinical Pathway Team
Blunt Abdominal Trauma Clinical Pathway
Johns Hopkins All Children's Hospital

Owner(s): Trauma Program

Clinical Pathway Management Team: Joseph Perno, MD; Courtney Titus, PA-C

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Disclaimer

Clinical Pathways are intended to assist physicians, physician assistants, nurse practitioners and other health care providers in clinical decision-making by describing a range of generally acceptable approaches for the diagnosis, management, or prevention of specific diseases or conditions. The ultimate judgment regarding care of a particular patient must be made by the physician in light of the individual circumstances presented by the patient.

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