Blunt Abdominal Trauma (BAT) Clinical Practice Guideline

Emergency Department Management

Original 7/29/19
Update Final 9/5/23

Patient Presents with Mechanism of Injury or Presenting Symptom Concerning for Blunt Abdominal Trauma

- Trauma Resuscitation ATLS
- Primary/Secondary Survey

Does the Patient have ANY of the following: Hemodynamic Instability? An abnormal GCS? An unreliable physical exam *(any distracting injuries)*?

Yes

- Activate Trauma STAT[2]
- Obtain Extended Trauma Panel[1]
- Trauma Surgery to determine:
  - Abdominal/Pelvis CT Scan VS.
  - Exploratory Laparotomy VS.
  - Interventional Radiology

No

- Obtain Basic Trauma Panel[1]

Consider CT Scan
If patient has any of the following:

- Complaint of abdominal pain *(Per Physician discretion)*
- Gross hematuria (visible blood in urine)
- Abdominal wall tenderness or distension:
- Handlebar or seatbelt sign present
- AST > 200
- Lipase > 400
- Unexplained or severe anemia (hemoglobin less than 7g/dl)
- Abnormal Chest or Pelvic x-ray
- Consider if Patient has a complex medical history (i.e. sickle cell, cardiac history)

CT Scan Indicated?

No

- Admit to Trauma Service if meets admission criteria[3] (Consult Trauma Surgery)
- If concern for NAT, follow the *NAT Guideline*

OR

- Discharge patient if meets discharge criteria[4]

Yes

CT Scan *(If Indicated)*

- Abdominal/Pelvis CT Scan with IV Contrast for patients who meet criteria
- Radiology to report findings to ED Provider (ordering provider)
- Notify Trauma Service if CT scan is positive including any blush/ extravasation
- **Trauma surgery to consult IR for all patients with solid organ injury (≥ grade 3), stable or unstable, with CT that shows blush/ extravasation.**

CT Scan Positive?

No

Yes

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Exclusion Criteria

- Any penetrating trauma

[1] Trauma Labs & Imaging

Per Provider Discretion based on Patient Condition:

Basic Trauma Panel:	Extended Trauma Panel:
•CXR	•CXR
•Urinalysis	•Urinalysis
•CBC	•CBC
•CMP	•CMP
•Lipase	•Lipase
	•PT/PTT
	•For BAT patients:
	- Add Pelvic Films
	- Ensure Type and Screen has been obtained

Additional Lab and Imaging Orders

- C spine x-ray
- Abdominal/Pelvis CT scans
- Initiate MTP if hemodynamically unstable
- Serum Pregnancy per system policy

[2] Consult Trauma Surgery

- All Trauma STATs and Alerts (*per Trauma Team Activation policy*)
  - *Escalate to Trauma STAT if Patient is hemodynamically unstable*
- When ordering CT Scan of abdomen
- Immediately with + CT scan results
- For admission to Trauma service

[3] Admission Criteria

- Present Seatbelt sign
- Uncontrolled pain
- Not tolerating PO
- Altered mental status (from baseline)
- Inability to ambulate
- Trauma Team to review lab results and have plan of care for patient prior to admission/transfer to floor

[4] Discharge Criteria

- Asymptomatic (pain adequately controlled)
- Tolerating PO
- Able to ambulate
- Stable labs

Acronyms

BAT: Blunt Abdominal Trauma
ATLS: Advanced Trauma Life Support
GCS: Glasgow Coma Scale
CXR: Chest X-ray
IR: Interventional Radiology
MTP: Mass Transfusion Protocol

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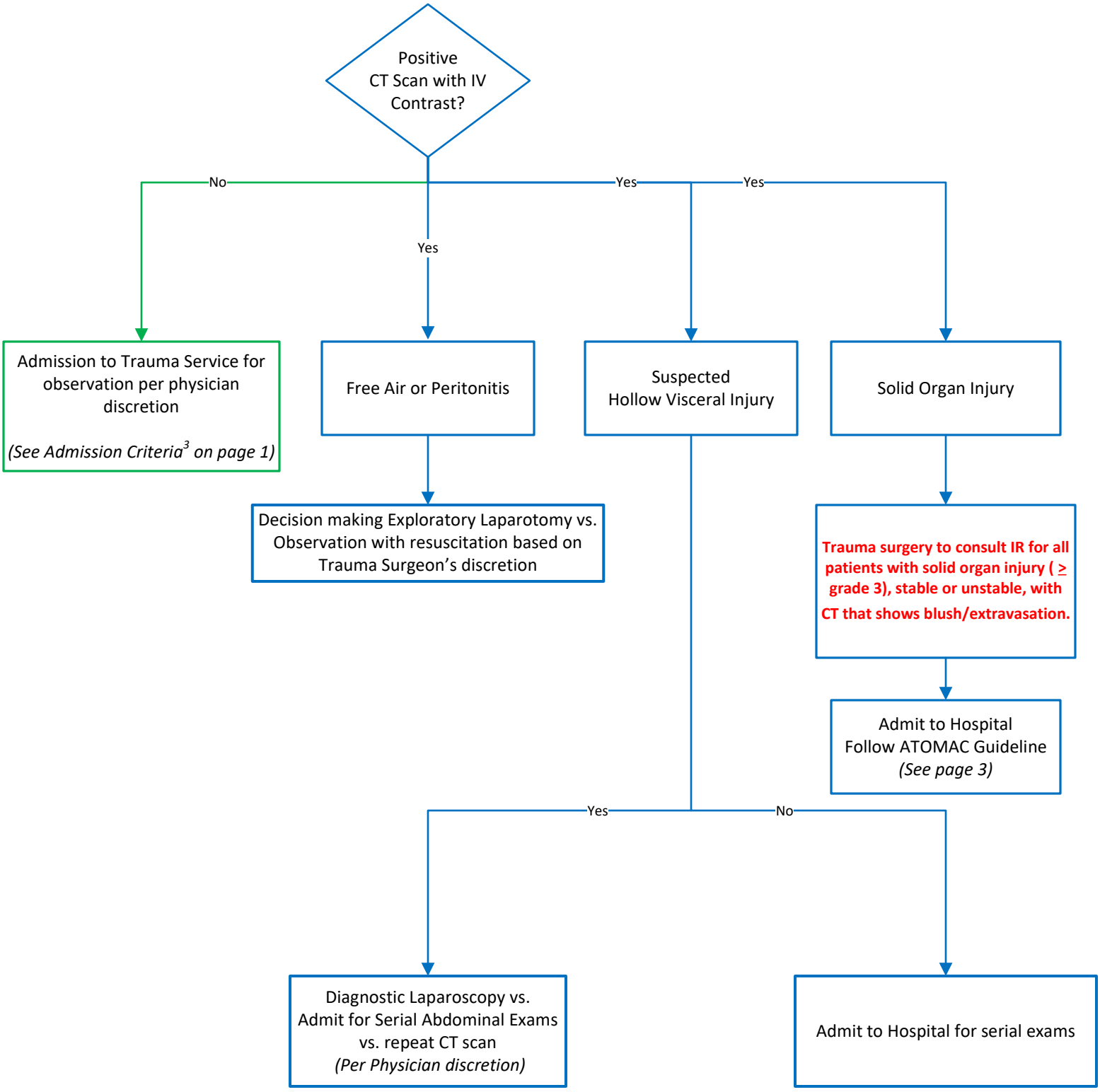
Inpatient Management



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ATOMAC Guideline: Non-operative Management of Liver and Spleen Injury

Original 7/29/19
Update Final 9/5/23

ATOMAC PROTOCOL*

- Follow ATLS protocol first
- Patients with peritonitis are managed per surgeon discretion and do not follow the algorithm
- Polytrauma patients may follow when not contraindicated
- Continued Bleeding: Defined by the Surgeon (i.e. inadequate Hb increase to transfusion, hemodynamic signs of hypovolemia +/- anemia)
- Stable Hb: a Hb value not dropping more than 0.5mg/dl in 12 hrs. Repeat Hb is optional
- Any lab suspected to be erroneous may be repeated prior to medical-decision making
- Times refer to time of injury
- Late presentation: Stable patients presenting within 48 hrs. post injury are still admitted for 24 hrs. of observation but Hb rechecks are optional. Injuries >48 hrs. are at Surgeon discretion

** Reference: the ATOMAC Guideline*

Solid Organ Injury shown by CT Scan (Kidney, Liver, Spleen) (or suspected injury)

Ongoing or very recent bleeding?
(As determined by Surgeon; may include high HR, low BP, delayed cap refill, rising SIPA score)

No

Stable
- Type and Screen
- Admit to non-ICU
- Vitals q2H x 4, then q4h
- Bedrest overnight
- Hb at 6, 12, and 24 hrs.

Hb <7.0 or symptomatic?

No

Transfer to Floor
- Floor status
- Regular Diet
- Ambulate if Hb stable for 24 hrs.

Discharge Criteria
- Vitals signs stable
- Tolerating regular diet
- Minimal abdominal pain

Yes

- 10-20 ml/kg PRBC
- NPO
- Bedrest additional 24 hrs.
- Hb q6h until stable x2

Continued Bleeding

- Admit to PICU
- Vitals per ICU routine
- NPO
- Hb q6h
- Bedrest until Hb stable

Hb <7.0 or symptomatic?

No

- Patient stable
- No bleeding for 24 hrs.
- Transfer to floor, if not contraindicated by other injuries

Stabilized

Yes

- 10-20 ml/kg PRBC
- NPO
- Bedrest x 24 hr.
- Hb q6h

Stabilized

Yes

Hypo perfused
- 10-20 mL/kg PRBC;
  - Consider 20ml/kg LR or NS, if needed, while waiting for blood transfusion
- Consider other causes (tamponade, spinal shock, etc.)
- Consider the Massive Transfusion Protocol

No response to PRBC; No other cause identified

Surgery
IR per provider discretion

HR/BP/Perfusion stabilize

CT if not already done

- Hb or vital signs still unstable
- >40mL/kg PRBC's or >4 units PRBC's

- Hb ≥ 7.0
- <4 units PRBC & <40 mL/kg PRBC

Failure of Non-operative Management (NOM)

Rebleed or continued bleeding

PICU until Hb stable for 24 hrs.

Trauma surgery to consult IR

Surgery

Continued NOM at surgeon discretion

Hb Stable; Consider transfer to lower level of care

Discharge Instructions

- No Ibuprofen or other NSAIDs
- Acetaminophen okay
- May return to school when off opioid pain meds
- Restricted activity for length of ASPA Guidelines (Grade + 2 = weeks)
- Return to ED for increasing pain, pallor, dizziness, vomiting, worsening shoulder pain, GI bleeding or black tarry stools. Call office for jaundice.
- Grade 1-2: Follow up phone call at 2 weeks and again at 2 months
- Grade 3-5: Office visit at 2 weeks and follow up phone call at 2 months.
- No follow-up imaging is required
- Must follow-up in clinic to be cleared for sports