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)?

No
- Obtain Basic Trauma Panel

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)

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

CT Scan Indicated?

No
- Admit to Trauma Service if meets admission criteria (Consult Trauma Surgery)
- If concern for NAT, follow the NAT Guideline
  - OR
- Discharge patient if meets discharge criteria

Yes
- 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

Continue to Management on Page 2

Yes

Exclusion Criteria
- Any penetrating trauma

1 Trauma Labs & Imaging
Per Provider Discretion based on Patient Condition:
Basic Trauma Panel:
- CXR
- Urinalysis
- CBC
- CMP
- Lipase

Extended Trauma Panel:
- 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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Blunt Abdominal Trauma (BAT) Clinical Practice Guideline
Inpatient Management

Positive CT Scan with IV Contrast?

- **Yes**
  - **Yes**
    - **Solid Organ Injury**
      - Trauma surgery to consult IR for all patients with solid organ injury (> grade 3), stable or unstable, with CT that shows blush/extravasation.
      - Admit to Hospital Follow ATOMAC Guideline (See page 3)
  - **No**
    - **Free Air or Peritonitis**
      - Admission to Trauma Service for observation per physician discretion (See Admission Criteria on page 1)
      - Decision making Exploratory Laparotomy vs. Observation with resuscitation based on Trauma Surgeon’s discretion
      - Yes
        - **Diagnostic Laparoscopy vs. Admit for Serial Abdominal Exams vs. repeat CT scan (Per Physician discretion)**
      - No
        - **Admit to Hospital for serial exams**

- **No**
  - **Yes**
    - **Suspected Hollow Visceral Injury**
      - Admission to Hospital for serial exams (Per Physician discretion)
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

Hb <7.0 or symptomatic?

No

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

HR/BP/Perfusion stabilize

CT if not already done

Stabilized

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

Stabilized

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

No

Stable

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

Surgery

IR per provider discretion


type and screen no stable

Continued Bleeding

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

Hb <7.0 or symptomatic?

Yes

Surgery

Trauma surgery to consult IR

Failure of Non-operative Management (NOM)

Rebleed or continued bleeding

PICU until Hb stable for 24 hrs.

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

Hb ≥ 7.0

- <4 units PRBC & <40 mL/kg PRBC

Stabilized

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

Yes

Hb <7.0 or symptomatic?

No

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

Surgery

Continued NOM at surgeon discretion

Hb Stable; Consider transfer to lower level of care

No

- 10-20 mL/kg PRBC
- NPO
- Bedrest additional 24 hrs.
- Hb q6h

Stable

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

Surgery

IR per provider discretion


type and screen no stable

Continued Bleeding

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

Hb <7.0 or symptomatic?

Yes

Surgery

Trauma surgery to consult IR

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Stabilized

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

Yes

Hb <7.0 or symptomatic?

No

**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

**Discharge Criteria**

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

Stabilized

**Discharge Instructions**

- No Ibuprofen or other NSAIDs
- Acetaminophen okay
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