

CLINICAL PATHWAY: Blunt Liver and Spleen Injury

THIS PATHWAY
SERVES AS A GUIDE
AND DOES NOT
REPLACE CLINICAL
JUDGMENT.

Inclusion Criteria: Blunt trauma to abdomen or torso with concern for liver/spleen injury
Exclusion Criteria: Penetrating injury to chest or abdomen, clinically significant CNS or thoracic injury, suspected physical abuse (see [Suspected Physical Abuse Pathway](#))

Initial Care in the ED:

- History and physical exam
- Trauma labs (CBC, type and cross), amylase/lipase, "trauma panel"
- CXR
- Consider pelvis X-ray
- Consider Focused Assessment with Sonography for Trauma (FAST) exam
- Establish reliable IV access
- Consult Pediatric Surgery

Seatbelt sign mandates a hospital admission

Hemodynamic instability and/or peritonitis?

- OR for laparotomy**
- Consider pRBC transfusion and activate Massive Transfusion Protocol (MTP)
 - Notify OR and anesthesia immediately
 - Treat off pathway

No

CT scan abdomen/pelvis with IV contrast

CT shows isolated liver or spleen injury?^{1,2}

Evaluate off pathway for other injuries

¹Consider IR embolization for recurrent hypotension or Hgb < 7
²"Blush" on CT scan is not necessarily an indication for IR embolization in pediatric patients

Grade I-III Liver/Spleen Injury

Grade IV-V Liver/Spleen Injury

Admit to MS Unit:

- Labs:**
- CBC on admission then q6hr x 1
 - Further labs at the discretion of pediatric surgeon
- FEN/GI:**
- Advance as tolerated
 - Miralax 1 g/kg/day to a max of 17 g daily until stooling
- Pain:**
- Acetaminophen
 - Morphine/Morphine PCA or Dilaudid/Dilaudid PCA
- Other:**
- Vital signs q4hr
 - Activity as tolerated
 - Sequential compression devices > 16 yrs old
 - Tertiary survey and CRAFFT screen (for adolescent substance abuse) by MS RNs within 24 hrs

Admit to PICU:

- Labs:**
- Hct q6hr until vitals are normal for age
- FEN/GI:**
- NPO until vitals are normal for age and Hct stable
- Pain:**
- Acetaminophen
 - Morphine/Morphine PCA or Dilaudid/Dilaudid PCA
- Other:**
- Vital signs q2hr x24 hrs, then q4hr if stable
 - Bedrest until vitals normal for age, then increase as tolerated
 - Sequential compression devices >16 yrs old
 - Foley catheter (remove prior to transfer to MS floors)
- Consider transfusion for:**
- Unstable vitals after 20 mL/kg bolus of isotonic IVF
 - Hemoglobin < 7 g/dL
 - Signs of ongoing or recent bleeding

Hemodynamically stable x12 hrs?

Yes

No

Failure of non-operative management

1. Continue non-operative management or
2. Angiography and embolization [use IR checklist] or
3. Exploratory laparotomy

Management strategy at the discretion of the attending pediatric surgeon.

Discharge Criteria:

Hgb/Hct stable x3; afebrile; normal HR & UOP; tolerating diet; minimal abdominal pain

Discharge Medications:

- Miralax 1 g/kg/day to a max of 17 g daily until stooling
- Hydrocodone-acetaminophen 0.2 mg/kg q4hr PRN pain (max 5-10 mg/dose) OR Oxycodone 0.1 mg/kg/dose (max 5-10 mg/dose)
*Dispense only 3 days worth.

Discharge Instructions:

- No strenuous activity or contact sports for grade of injury + 2 weeks. Only activities that keep 2 feet on the ground (no trampolines, no bikes, no dirt bikes, no horseback riding, no ATV, no skiing, etc)
- Follow up with pediatric surgery in 4-6 weeks

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