

CLINICAL PATHWAY: Renal Injury

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

Inclusion Criteria: Blunt trauma to abdomen/back +/- gross hematuria with concern for renal injury
Exclusion Criteria: Penetrating injury to chest or abdomen, clinically significant central nervous system (CNS) or thoracic injury, suspected physical abuse (see [Suspected Physical Abuse Pathway](#))

Initial care in the ED:

- Consult Pediatric Surgery/Trauma via Voalte or call/text 860-578-5071
 - History and physical exam by Surgery/Trauma team
 - Trauma labs: "Trauma panel" (comprehensive metabolic panel, LFTs, amylase, lipase, CBC with differential, coags), type and cross
 - Consider focused assessment with Sonography in Trauma (FAST) exam
 - Establish reliable peripheral intravenous (PIV) access with 2 PIVs
- *Seatbelt sign mandates a hospital admission***

Hemodynamic instability and/or peritonitis?

Treat off pathway
 • Consider IR/OR or ICU at attending pediatric surgeon discretion

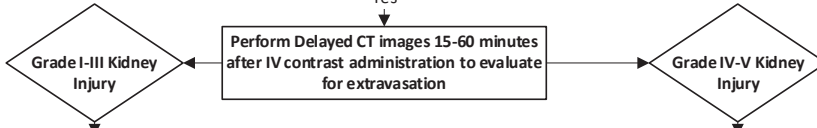
No

CT scan of abdomen and pelvis with IV contrast

CT shows renal injury?

No → Evaluate off pathway for other injuries

Yes



Perform Delayed CT images 15-60 minutes after IV contrast administration to evaluate for extravasation

Grade I-III Kidney Injury

Grade IV-V Kidney Injury

Admit to MS unit on Pediatric Surgery/Trauma Service

- Labs:**
- Hematocrit (Hct) on admission, then q6hr x1
 - Further Hct 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 Control:**
- **Acetaminophen** 15 mg/kg/dose PO q6hr (max 1000 mg/dose, not to exceed 4000 mg/day)
 - Consider **oxycodone** 0.1 mg/kg/dose (max 5 mg/dose) PO q4hr or **morphine** 0.05 mg/kg/dose (max 5 mg/dose) IV q3hr or **hydromorphone** 0.015 mg/kg/dose (max 0.5 mg/dose) q3hr PRN if acetaminophen is insufficient
- Other:**
- Vital signs q4hr
 - Activity as tolerated
 - Sequential compression device (SCD) if age ≥12 years
 - Tertiary survey and CRAFFT screen (for alcohol and substance misuse) by MS RNs within 24 hours

Consider Admission to PICU on Pediatric Surgery/Trauma Service

- Labs:**
- Hct q6hr until vitals are normal for age
- FEN/GI:**
- NPO until vitals are normal for age and Hct stable
- Pain Control:**
- **Acetaminophen** 15 mg/kg PO q6hr (max 1000 mg/dose, not to exceed 4000 mg/day)
 - Consider **oxycodone** 0.1 mg/kg/dose (max 5 mg/dose) PO q4hr or **morphine** 0.05 mg/kg/dose (max 5 mg/dose) IV q3hr or **hydromorphone** 0.015 mg/kg/dose q3hr (max 0.5 mg/dose) PRN if acetaminophen is insufficient
 - Consider **morphine or hydromorphone PCA** – Please see PCA policy
- Other:**
- Vital signs q2hr x24 hrs, then q4hr if stable
 - Bedrest until vitals are normal for age, then increase as tolerated
 - Sequential Compression Device if age ≥12 years
 - Consult Pediatric Urology via Voalte

Discharge Criteria:

- Hgb/Hct stable x 3
- Afebrile, normal heart rate, and urine output
- Resolution of gross hematuria
- Tolerating diet
- Pain controlled with oral medications

Discharge Medications:

- **Hydrocodone-acetaminophen** 0.2 mg/kg q4hr PRN pain (max 5-10 mg/dose) or **Oxycodone** 0.1 mg/kg/dose (max 5 mg/dose). * Dispense only 3 days worth.
- **Acetaminophen** 15 mg/kg/dose q6hr PRN pain (max 75 mg/kg/day or 4000 mg/day)
- *NO NSAIDs

Discharge Instructions:

- No strenuous activity or contact sports for grade of injury + 2 weeks (e.g., grade III injury = 5 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 in 4-6 weeks with attending pediatric surgeon

Hemodynamically stable and no other injuries?

Transfer to MS floors on Pediatric Surgery/Trauma Service

- Labs:**
- Hematocrit (Hct) daily
- FEN/GI:**
- Clears and advance as tolerated
 - **Miralax** 1 g/kg/day to a max of 17 g daily until stooling
- Other:**
- Activity as tolerated
 - Tertiary survey and CRAFFT screen if not completed

Failure of non-operative management:

Treatment plan at the discretion of the attending pediatric surgeon.

- Continued non-operative management or
- Angiography and embolization or
- Laparoscopy/laparotomy