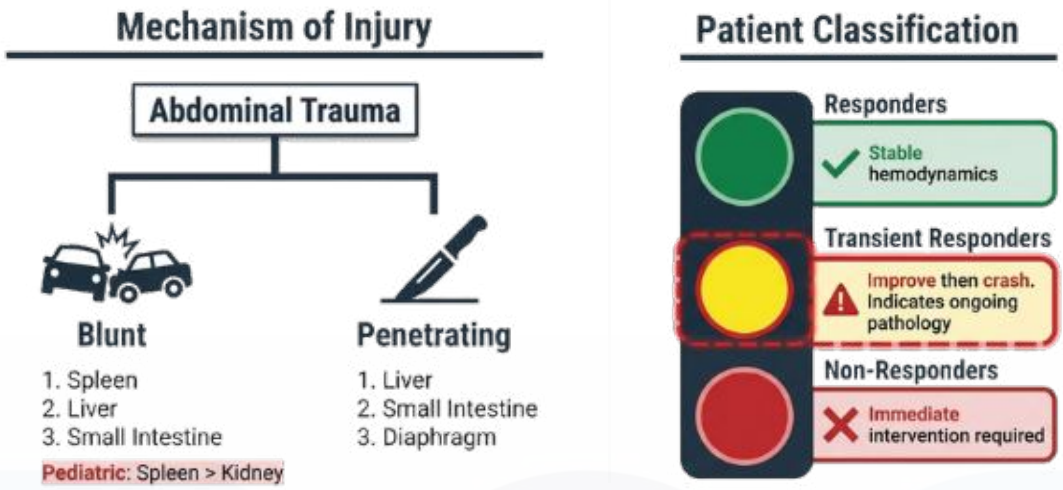
TUTORIALS

PG Residency

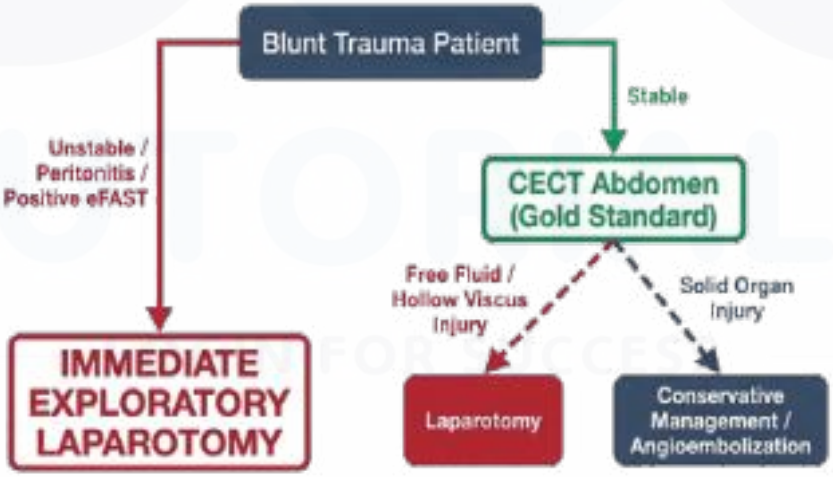
Trauma Surgery

Smart Notes. Better Scores.



Priority: Hemoperitoneum and visceral perforation are primary causes of mortality.

Approach to Blunt Abdominal Injury

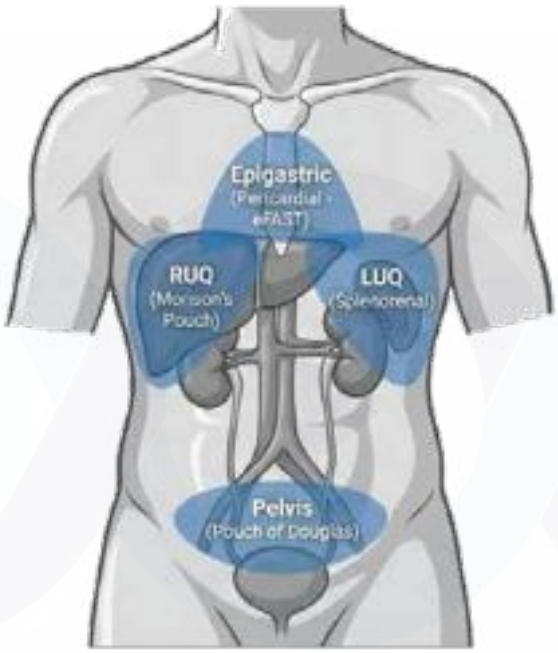


- **Immediate Laparotomy Indications:** Hemodynamic instability, peritonitis (guarding/rigidity), positive eFAST in unstable patient.
- **CT Trigger:** Evidence of hollow viscus injury or free fluid without solid organ injury
- **Non-Operative:** Preferred for solid organ injury if hemodynamics allow.

The FAST & eFAST Exam

The Blind Spots

- Cannot ruleout hollow viscus perforation.
- Cannot assess retroperitoneum.
- Obscuredbyobesity & bowel gas.
- Cannot identify source of bleeding.

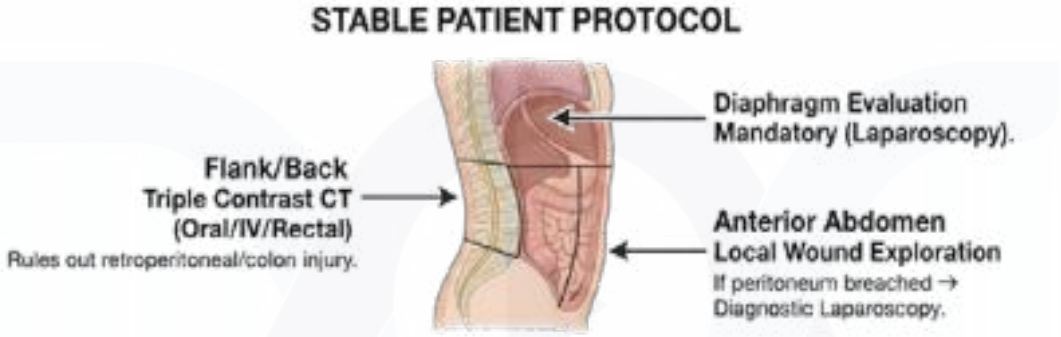


Key Facts

- **Scope**:eFAST adds pericardia! view to standard abdominal/pelvic windows.
- **Threshold**:Unreliable for fluid volumes < 100 ml.

Approach to Penetrating Injury

Immediate Surgery



Precision Medical Editorial

Diagnostic Modalities: DPL vs. CECT

DPL (Diagnostic Peritoneal Lavage)

The Liquid Biopsy (Historical/Resource-Poor)

Positive Criteria

- >10ml frank blood on aspiration.
- RBC > 100,000/mm^3
- WBC > 500/mm^3
- Presence of bile or feces.

Invasive. Misses retroperitoneal injury.

CECT (Contrast-Enhanced CT)

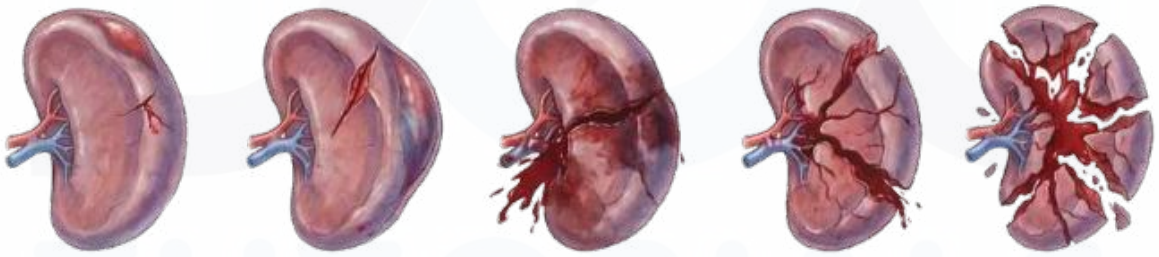
The Gold Standard (Stable Patients)

Key Findings

- Contrast Leak: Active bleeding or perforation.
- Free Air: Specific for hollow viscus injury.
- Organ Map: High sensitivity for solid organ injury.

Splenic Injury: Grading & Mechanics

AAST Scale



Grade 1-2
Surface subcapsular hematoma
Minor capsular tear (<3cm)
Minimal bleeding

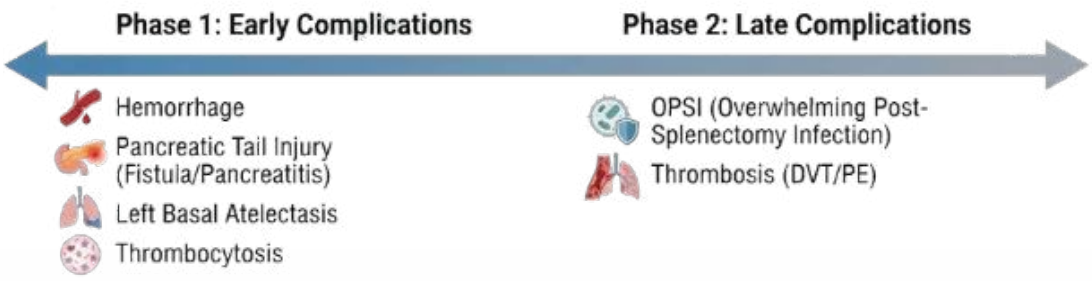
Grade 3
Deeper laceration (>3cm)
Into parenchyma

Grade 4
Hilar vascular injury
Active hemorrhage
>25% devascularization

Grade 5
"Shattered"

- Most common organ in blunt trauma. Mechanism: Compression or Deceleration.
- Management (Stable Grade 1-3): Conservative. Monitor Hct. Angioembolization if grade deteriorates.

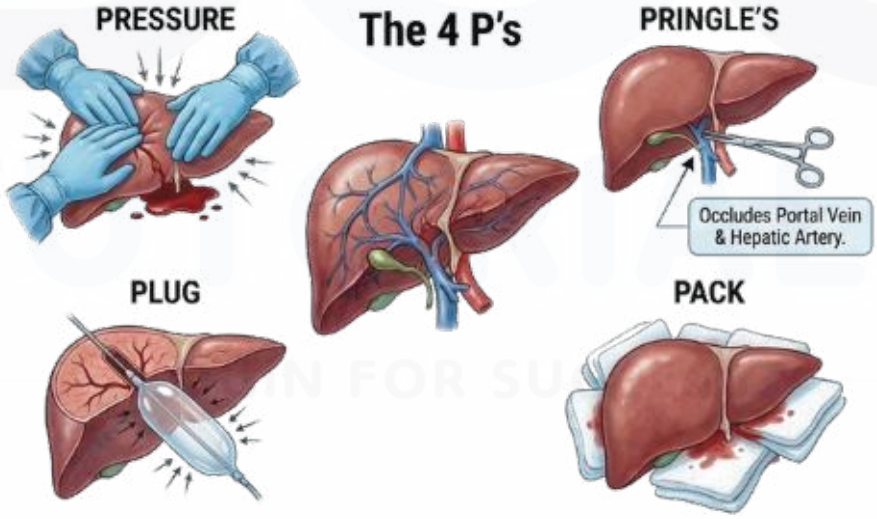
Post-Splenectomy Management



OPSI Prevention Checklist

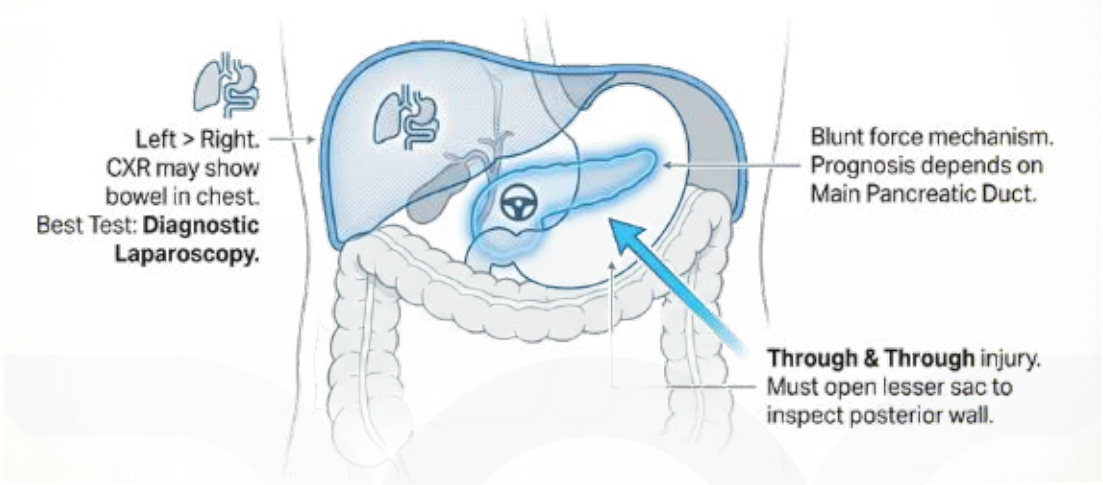
- **Pathogen:** Encapsulated Organisms (Strep. pneumoniae #1).
- **Presentation:** Fever Coma/DIC within 24-48 hrs.
- **Vaccines:** Pneumococcal, Meningococcal, Hib (2 weeks pre-op or immediate post-op).
- **Antibiotics:** DailyPenicillin prophylaxis (until age 1 O or 16).

Liver Injury: Hemorrhage Control

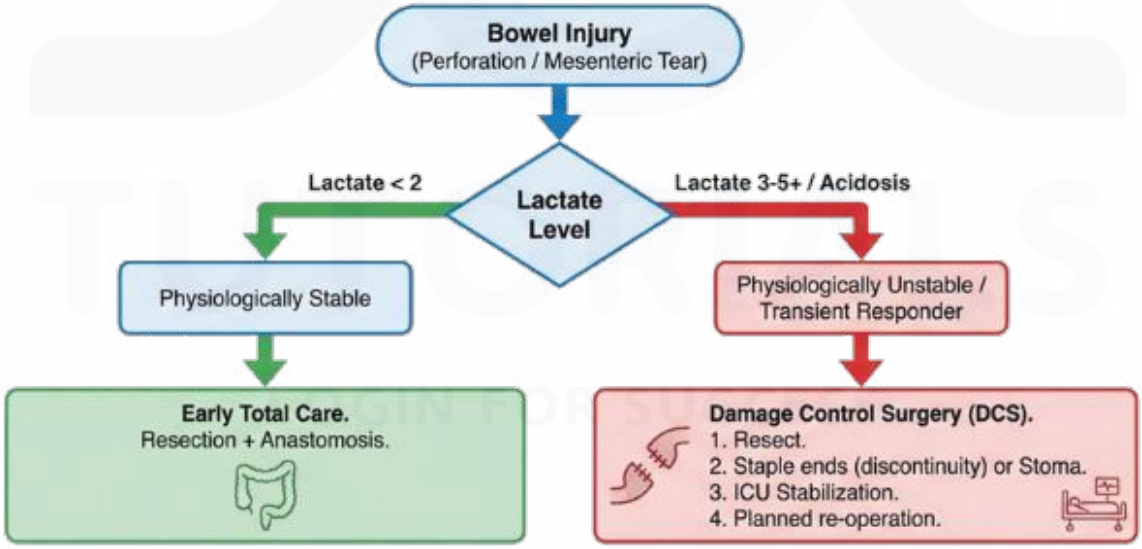


- **Pringle's Maneuver Logic:** If bleeding persists after clamping, source is Hepatic Veins or IVC (Retrograde flow).
- **Portal Vein:** Repair only.
  Never ligate.
- **Hepatic Artery:** Ligate if necessary.
- **Hemobilia (Quincy's Triad):** Jaundice + Colicky Pain + Melena.

Hidden Threats: Diaphragm, Pancreas, Stomach

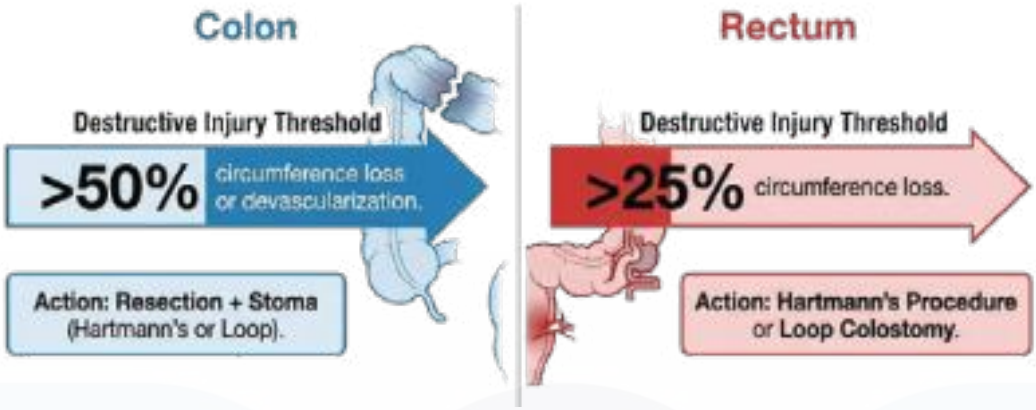


Small Bowel & Damage Control Surgery (DCS)



- Surgical Principle: Avoid anastomosis in unstable patients due to high leak risk.

Colon & Rectal Injuries



Rectal Injury Signs on CT:
Free air around colon wall + fluid collection.

Non-Destructive Injuries: Simple repair.

Renal Injury Protocol

	Who gets a CT?
Blunt Trauma	Condition: Gross Hematuria Or Micro-hematuria +Shock (BP <90)
Penetrating Trauma	Condition: ANY Hematuria (Gross or Micro)

If Grade 4 (Vascular /Urine Leak) or Grad e 5 (Shattered) Surgery.

Intra-op Pearl: Before Nephrectomy in unstable patient, confirm contralateral kidney function.
Test: One-shot on-table IVP.

Precision Medical Editorial

Lower Genitourinary Triad

Bladder

Test: Retrograde Cystogram.

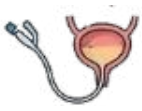
- **Intraperitoneal:** Surgical Repair.
- **Extraperitoneal:** Catheter (Conser vative).

Urethra

Signs: Blood at meatus, Retention, High-riding bladder.

DO NOT CATHETERIZE

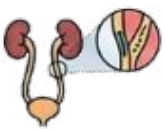
Management: Suprapubic Cystostomy (SPC) -> Delayed Urethroplasty.



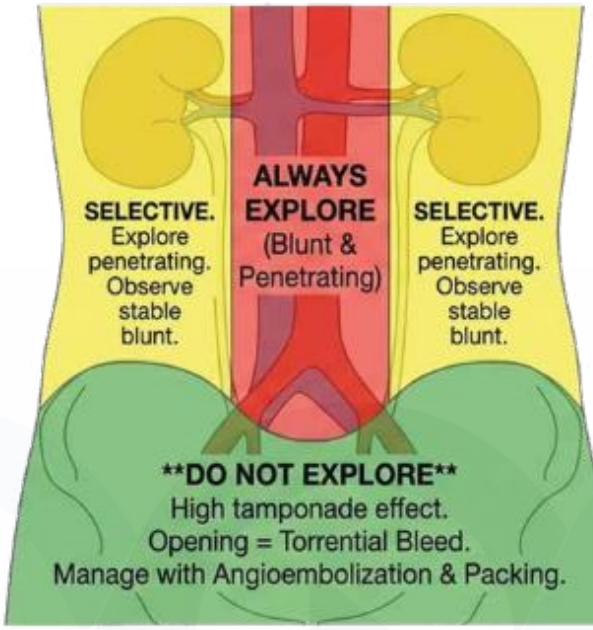
Ureter

Rare injury.
Management: Repair or Stent.

Pearl: Never strip peri-ureteral tissue (avascular risk).



Retroperitoneal Zones: The Surgeon's Minefield



Pelvic Fracture: "Chimney Effect" (hematoma tracking to diaphragm) signals massive bleeding.

High-Yield Trauma Pearls

Precision Medical Editorial

Pediatric Handlebar Injury
Think **Pancreatic Trauma**
(compressionagainstvertebrae).

Penetrating + Unstable
Immediate Laparotomy.
Do not delay for FAST /CT.

Unstable Hemorrhage Diagnosis
FAST isthemost sensitiveinitial test.

Pelvic Hematoma (Zone 3)
Avoid exploration.
Preserve tamponade.

Grade 3 Spleen (Stable) = Angioembolization. / **Grade 4 Liver** = 25-75% parenchymal disruption.

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