Approach to Abdominal Pain

ABDOMINAL

99% — KEY DECISION RULE
Alvarado score, cut-point 5[3]
sensitivity for appendicitis; a score below 5 helps rule it out

Acute abdominal pain in an adult → β-hCG if could be pregnant; vitals; abdominal, pelvic or genital and rectal exam[2] → CBC, lytes, creatinine, LFTs, lipase, lactate, UA; ECG if upper pain[2] → **Red flags of an acute abdomen?**

Yes →

Acute abdomen: resuscitate, call surgery/gyne[1,2]

- Hypotension, tachycardia or sepsis
- Rigidity, guarding or rebound
- Pain out of proportion to the exam[11]
- Bilious vomiting, obstipation[12]
- Hematemesis or hematochezia
- β-hCG + with shock or peritonism[8]

→ Sepsis: fluids, antibiotics; AAA: permissive hypotension, OR[10]

If not: where is the pain?

	Upper abdomen RUQ/epigastric	Lower abdomen, pelvis RLQ, LLQ	Diffuse often surgical	Image-negative outside gut
CAUSES	• **Acute cholangitis** • Biliary colic, cholecystitis • Pancreatitis, peptic ulcer	• **Ectopic pregnancy** • **Ovarian or testicular torsion** • Appendicitis, diverticulitis, stone, PID	• **Ruptured AAA or aortic dissection** • **Mesenteric ischemia** • **Perforation, obstruction, volvulus**	• **Inferior MI** • **DKA, adrenal crisis** • Hypercalcemia, pneumonia, zoster, IBS
CLUES	• Fever, jaundice; full triad often absent[5] • Murphy sign weak: LR 2.8 (CI 0.8–8.6)[6] • Epigastric pain boring to the back	• Pain migrating to RLQ; fever • Vaginal bleeding; missed period[8] • Sudden one-sided pain with vomiting	• Older smoker; back pain, pulsatile mass[10] • Pain out of proportion; AF[11] • Colicky pain, prior surgery or hernia[12]	• Cardiac risk with upper abdominal pain • Carnett sign: abdominal wall pain[2] • Normal imaging; recurrent pain
WORKUP	• RUQ US first; MRCP if CBD stone possible[4] • Lipase >3× ULN + typical pain[7] • CT only if pancreatitis unclear[7]	• β-hCG +: transvaginal ultrasound[8] • CT with IV contrast; noncontrast if stone[1,2] • Doppler US if torsion; US first if pregnant[9]	• CTA if ischemia or aortic cause[10,11] • Bedside ultrasound for AAA if unstable • CT with IV contrast, not plain films[1,12]	• ECG ± troponin[2] • Glucose, calcium, gas, cortisol • CXR if cough or hypoxemia
MANAGE	• Cholangitis: antibiotics, ERCP[2] • Cholecystitis: early cholecystectomy[2] • Pancreatitis: moderate fluids, early PO[7]	• No IUP: PUL; serial β-hCG, gynecology[8] • Torsion: urgent surgical detorsion • Surgery; antibiotics if uncomplicated[9]	• Rupture: door-to-repair <90 min[10] • Ischemia: heparin, revascularize[11] • SBO: NG tube, fluids; OR if strangulated[12]	• Treat cause: ACS, DKA, hypercalcemia • Adrenal crisis: IV hydrocortisone 100 mg[2] • Functional: TCA or SNRI, not opioids[2]

Stethopedia
stethopedia.ca/approach/abdominal-pain

Evidence [1] Scheirey 2018, J Am Coll Radiol [2] Manual 2024–25, pp. 69, 82, 85, 182 [3] Ohle 2011, BMC Med [4] Russo 2023, J Am Coll Radiol [5] Kiriyama 2018, J Hepatobil Pancreat Sci [6] Trowbridge 2003, JAMA [7] Tenner 2024, Am J Gastroenterol [8] Po 2021, J Obstet Gynaecol Can [9] Di Saverio 2020, World J Emerg Surg [10] Chaikof 2018, J Vasc Surg [11] Bala 2022, World J Emerg Surg [12] Ten Broek 2018, World J Emerg Surg