The Acute Abdomen

Localize it, resuscitate, and decide — does this belong to a surgeon today?

PAIN > SIGNS
think mesenteric ischemia

THE FIVE THAT KILL QUICKLY *exclude these before working through the differential*

VASCULAR CATASTROPHE

Ruptured abdominal aortic aneurysm — back or flank pain, hypotension, pulsatile mass; do not delay for imaging in the unstable patient. **Mesenteric ischemia — pain out of proportion to examination**, atrial fibrillation or vascular disease, rising lactate and a soft abdomen early.

PERFORATION & OBSTRUCTION

Perforated viscus — sudden severe pain, **rigid abdomen**, free air under the diaphragm. **Closed-loop or strangulated obstruction** — vomiting, distension, absent flatus, and a tender irreducible hernia.

SEPSIS FROM THE ABDOMEN

Ascending cholangitis — Charcot triad of fever, jaundice and right upper quadrant pain; add hypotension and confusion for Reynolds pentad. Needs **antibiotics and urgent biliary drainage**, not just antibiotics.

LOCALIZE IT *the site narrows the differential faster than any test*

Location	Consider
Right upper quadrant	**Biliary colic, cholecystitis, cholangitis**, hepatitis, liver abscess. Also right lower lobe pneumonia and Fitz-Hugh-Curtis syndrome.
Epigastric	**Pancreatitis, peptic ulcer, gastritis**, and critically **myocardial infarction** — get an ECG in anyone with epigastric pain and cardiac risk factors.
Right lower quadrant	**Appendicitis**, ileitis, mesenteric adenitis, and in women **ectopic pregnancy, ovarian torsion, tubo-ovarian abscess**.
Left lower quadrant	**Diverticulitis**, colitis, and the same gynecological causes. Consider colorectal malignancy in the older patient.
Diffuse or migrating	**Peritonitis**, obstruction, **mesenteric ischemia**, ruptured aneurysm, early appendicitis (periumbilical then migrating to the right iliac fossa), and diabetic ketoacidosis.
Loin to groin	**Renal colic** — but in anyone over 50 with a first presentation, **exclude a leaking aneurysm first**. This mistake is well described and lethal.

ASSESS AND INVESTIGATE *resuscitate in parallel, not afterwards*

1. **Resuscitate while you assess.** Large-bore access, fluids, analgesia, and **NPO**. **Give adequate analgesia** — opioids do **not** mask peritonism or delay diagnosis, and withholding them is outdated and cruel.
2. **Examine for peritonism** — guarding, rigidity, rebound, percussion tenderness, and pain on coughing. **Examine the hernial orifices and the scrotum**, and do a rectal examination where indicated.
3. **Send:** complete blood count, urea and electrolytes, **lactate**, LFTs, **lipase or amylase**, CRP, coagulation, group and save, blood gas, and **a pregnancy test in every woman of childbearing age** — no exceptions.
4. **Image appropriately. CT with contrast** is the workhorse for undifferentiated pain. **Ultrasound first** for suspected biliary disease, in pregnancy, and in young women. **Erect chest X-ray** for free air. **Do not delay surgery for imaging in an unstable patient with peritonitis.**
5. **Involve surgery early** for peritonism, suspected perforation, obstruction, or ischemia. A normal white cell count and CRP **do not exclude** a surgical abdomen, particularly early or in the elderly.

THE GROUPS WHERE IT PRESENTS ATYPICALLY *where diagnoses are missed*

ELDERLY & IMMUNOSUPPRESSED

Blunted signs, minimal fever and a soft abdomen despite serious pathology. Perforation may present only as confusion or hypotension. **Steroids in particular mask peritonism.** Have a much lower threshold for CT, and do not be reassured by unremarkable observations.

PREGNANCY & MEDICAL MIMICS

In pregnancy the **appendix is displaced upward** and signs are unreliable; ultrasound and MRI are preferred. **Medical mimics of the surgical abdomen:** myocardial infarction, **diabetic ketoacidosis**, lower lobe pneumonia, **adrenal crisis**, sickle cell crisis, hypercalcemia, and porphyria. **Check an ECG, a glucose and a ketone level** before assuming the problem is surgical.

THE COMMON DIAGNOSES *the discriminating feature for each*

Diagnosis	What points to it, and what it needs
Appendicitis	**Periumbilical pain migrating to the right iliac fossa**, anorexia, low-grade fever. Ultrasound or CT; **MRI in pregnancy**. Appendicectomy, though selected uncomplicated cases may be managed with antibiotics.
Cholecystitis	**Murphy sign**, right upper quadrant pain after fatty food, thickened gallbladder wall with stones on ultrasound. **Early laparoscopic cholecystectomy** where feasible.
Pancreatitis	**Lipase or amylase > 3× upper limit** with epigastric pain radiating to the back. **Gallstones and alcohol** cause most cases. Fluids, analgesia, early enteral feeding — **CT is not needed early** unless the diagnosis is unclear.
Diverticulitis	Left lower quadrant pain and fever, CT-confirmed. **Uncomplicated disease may not need antibiotics** in selected well patients; abscess needs drainage and perforation needs surgery.
Bowel obstruction	Vomiting, distension, absent flatus, prior surgery. **NPO, nasogastric decompression, fluids. Fever, tachycardia, raised lactate or peritonism suggest strangulation** and mandate surgery.

PEARLS & PITFALLS

- **Pain out of proportion to a soft abdomen is mesenteric ischemia** until excluded. By the time there is peritonism, bowel is dead.
- **Renal colic over 50 is a leaking aneurysm** until imaging says otherwise.
- **Pregnancy test in every woman of childbearing age.** Ruptured ectopic is the classic catastrophic miss.
- **Give analgesia.** It does not obscure the diagnosis, and withholding it delays cooperation and assessment.
- **Normal inflammatory markers do not exclude a surgical abdomen**, especially early or in the elderly.
- **An ECG belongs in the workup of epigastric pain.** Inferior infarction masquerades as indigestion.

References: WSES guidelines on intra-abdominal infections and acute abdominal emergencies · ACR Appropriateness Criteria for acute abdominal pain · evidence reviews on analgesia in the undifferentiated acute abdomen.

Educational aid; verify against local surgical protocol and patient factors.

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