ACUTE ABDOMEN

(Last updated 05/02/2019; Reviewers: Yiwu Zhou, MD; Bibek Karki, M.B.B.S.)

PRESENTING COMPLAINT: Acute/chronic abdominal pain

FINDINGS

- **A** Check airway
- **B** ↑RR
- **C** ↓ BP, ↑HR, weak pulse
- **D** Variable altered (V,P,U,D)*
- **E** ↑T, peritoneal signs (rebound, guarding), jaundice, distention/mass/hernia, silent (ileus, peritonitis) or hyperactive (obstruction) bowel sounds
- **L_{PC}** ↑WBC, ↓Hgb, urinalysis, blood type/cross match, pregnancy test in females, electrolytes, glucose, ↑lactate, renal, bilirubin, amylase, coagulation
- **U_{PC}** Intra-abdominal free fluid, free air, pregnancy

***V** (verbal), **P (**pain), **U** (unconsciousness), **D** (delirious)

U_{PC} (point of care ultrasound) **L_{PC}** (point of care labs)

OTHER HISTORY

Signs and symptoms: Pain (PQRS) P3: Positional, palliating and provoking factors; Q: Quality, R3: region, radiation, referral; S: severity; T3: Temporal factors (time, mode, progression, previous episodes); associated Symptoms (anorexia, n/v, diarrhea, sepsis, bleeding, jaundice, bowel movements), last meal

Predisposing factors: Previous surgery, trauma, alcohol, medications (acetaminophen, aspirin, NSAIDs), pregnancy

OTHER FINDINGS

Bowel sounds, Peritoneal signs (rebound, guarding), jaundice, abdomen distension/mass/hernia, rectal/pelvic exams, Murphy's sign (acute cholecystitis), Rovsing/Psoas/Obturator signs (appendicitis), Kehr sign (diaphragmatic irritation), important to repeat the examination to track the changes in the disease course.

DIFFERENTIAL DIAGNOSIS

Acute coronary syndrome with myocardial infarction on ECG, pneumonia, acute gastroenteritis, diabetic ketoacidosis, uremia, abdominal allergic purpura

OTHER INVESTIGATIONS

- **Labs:** Microbiology as needed, liver function

- **Monitoring:** Monitor output to guide resuscitation, ECG: look for ischemia (especially inferior wall), Intra-abdominal pressure: serial bladder pressure if abdominal compartment suspected
- **Imaging**: Early bedside US (see above) plain abdominal and chest X-ray; CT abdomen (consider oral and IV contrast; review with radiologist specialized on differential diagnosis)

THERAPEUTIC INTERVENTIONS

- NPO: Nothing by mouth & nasogastric tube for decompression if needed
- Contact surgeon immediately if suspicious for surgical abdomen:
    - Obstruction/appendicitis/peritonitis/hemorrhage/AAA/perforated-gangrenous viscous/traumatic or spontaneous organ rupture/bowel ischemia/acute pancreatitis/abdominal compartment syndrome
    - Evaluate appropriate source control by diversion/resection and restore gastrointestinal function if needed; may require open abdomen if unable to close or requires repeat washouts (open abdomen does not necessitate mechanical ventilation)
    - Contact endoscopic, endovascular and/or percutaneous specialist: for upper or lower GI bleed, hemodynamically stable patients with active abdominal bleed, accessible and drainable fluid collections
- **Treatment:**
    - Resuscitation: if hemodynamic/respiratory failure
    - Broad spectrum antimicrobial therapy: initiate once infection is considered likely according to suspected site of infection
    - Symptomatic treatment: for diarrhea, nausea/vomiting; laxatives and/or manual extraction of fecaloma
    - Consider: Rehydration and correction of electrolytes, transfusion for active bleeding
- **Analgesia:** IV opioids as appropriate; give in small doses to be able to monitor exam; try to hold off until assessed by surgeon

ONGOING TREATMENT

Establish diagnosis based on clinical history and physical findings: Narrow down to a tentative differential diagnosis based on pain-location and manage accordingly:

- **<u>Right upper and epigastric pain</u>**
    - Cholangitis: antibiotics; consider urgent biliary drainage (ERCP), or surgery
    - Cholecystitis: antibiotics, consider drainage (cholecystostomy tube), emergent vs interval operation
    - Pancreatitis: Hydration; shock recognition and treatment, pain management; consider nasogastric drainage/early enteral feeding, ERCP for gallstone pancreatitis

- Dyspepsia (reflux esophagitis, peptic ulcer disease, gastric and esophageal cancer): consider gastroscopy, helicobacter pylori and anticholinergic therapy
- Myocardial infarction/pneumonia

- **Lower abdominal pain**:
  - Distal intestinal tract: infectious (diverticulitis, appendicitis, Meckel's diverticulitis), obstructive (volvulus/tumor/adhesions), strangulated hernia, ischemic, medication-associated or inflammatory bowel disease
  - Retroperitoneal pathology: pyelonephritis, kidney stone, hemorrhage, urinary retention
  - Female reproductive organs: consider pregnancy and complications; call gynecologist
- **Generalized abdominal pain: consider as surgical abdomen**
  - Rule out ischemia/mesenteric infarction, abdominal hemorrhage (aneurysm, trauma)
  - Viral/bacterial enteritis, colitis, toxin-mediated food poisoning
  - Metabolic disease: e.g. diabetic ketoacidosis, Addison's disease, hypercalcemia
  - Hematologic etiologies: severe hemolysis, sickle cell, acute leukemia.

- Reevaluate patient repeatedly: If does not respond as expected, reassess working diagnosis and return to differential diagnosis
- Consider additional imaging

REFERENCES & ACKNOWLEDGMENTS

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