Acute Abdomen Differential Diagnosis: Midepigastrium and Diffuse

Acute Abdomen is a general term used to describe any patient condition that involves sudden onset and severe abdominal pain. There are many conditions that may or may not require emergent surgery to treat, which is why it is important to be able to quickly identify the cause. It can be helpful to sort the causes of acute abdomen into the classically defined region of abdominal pain. Midepigastric pain can be due to pancreatitis, aortic dissection, peptic ulcer disease, and myocardial infarction. Causes within the lower quadrants include ovarian torsion, ectopic pregnancy, pyelonephritis, renal calculi and acute salpingitis. Appendicitis is most commonly associated with right lower quadrant (RLQ) pain; and causes within the left lower quadrant (LLQ) include sigmoid volvulus and sigmoid diverticulitis.

PLAY PICMONIC

Midepigastrium

Peptic Ulcer Disease

Pepper Ulcer-volcano

Peptic ulcer disease, or PUD, occurs when protective mucosal lining of the stomach or proximal duodenum is disrupted and gastric acid damages the underlying cells, forming ulcers. The most common cause is H. pylori infection, with NSAIDs and alcohol use as other major contributors. PUD presents with dull, burning midepigastric pain; this pain is worse with eating for gastric ulcers but improves with eating for duodenal ulcers. Endoscopy is used to diagnose the type of ulcers, and treatment is based on the underlying cause, which commonly includes a proton pump inhibitor, H2-antagonist, and/or antibiotics.

Pancreatitis

Pancreas-on-fire

The mnemonic - I GET SMASHED - can be used to recall the causes of acute pancreatitis: Idiopathic, Gallstones, Ethanol, Trauma, Steroids, Mumps, Autoimmune disease, Scorpion sting, Hypercalcemia/Hyperlipidemia, ERCP, and Drugs. Patients present with intense, midepigastric pain radiating to the back, nausea and vomiting. Labs show elevated lipase and amylase, and CT with contrast is used to confirm a suspicion, though diagnosis can be made clinically. Depending on the cause, acute pancreatitis can be treated non-surgically with IV fluids, bowel rest with NPO (nil per os) status, pain relief, and occasionally antibiotics, such as meropenem, if infection is suspected. If gallstones are involved, endoscopic retrograde cholangiopancreatography (ERCP) can be used to remove the stones.

Aortic Dissection

A-orca Dissected

An extremely emergent condition, aortic dissection involves injury to the intimal layer of the aortic wall and presents with tearing chest or midepigastric pain that radiates to the back. Suspect this diagnosis in any patient with a history of hypertension or connective tissue diseases like Marfan syndrome. CT scan or echocardiogram are used as imaging modalities for this diagnosis. Type A (proximal) dissections involve the ascending aorta, are treated surgically; Type B (distal) dissections involve the descending aorta, are treated medically with drugs like beta-blockers.

Myocardial Infarction

Mayo-heart Infarction-fart

Myocardial infarction (MI), aka “heart attack," is when the blood flow to the heart is decreased, causing decreased oxygenation and subsequent ischemia and death of cardiac tissue. An atypical presentation of an MI is midepigastric pain, as opposed to the classic crushing chest pain; patients may or may not also present with radiating arm or jaw pain, shortness of breath, and diaphoresis. Electrocardiogram (EKG) and cardiac enzyme labs that measure troponins are the two most useful diagnostic tools. For treatment of an ST-elevation myocardial infarction (STEMI), percutaneous coronary intervention (PCI) (coronary angiography) is ideal, if available, otherwise thrombolytics can be used. For treatment of other acute coronary syndrome (ACS) diagnoses, drugs such as aspirin, nitrates, and clopidogrel are commonly used.

Any Place

Peritonitis

Parrot-toe-on-fire

Inflammation of the peritoneum most often due to infection causes symptoms of generalized abdominal pain, distention, fever, and altered mental status (if severe). On physical exam, patients may have rebound tenderness and involuntary guarding. An elevated WBC count is also common. Treatment includes IV fluids, antibiotics such as ceftriaxone, paracentesis to drain infected fluid, and possibly surgery to correct the underlying cause.

Hemorrhage or Perforation

Hemorrhage-hammer and Perforations

Two mechanisms that lead to peritonitis are hemorrhage and perforation. If an organ is injured and bleeds into the abdominal space, the blood serves as a nidus for infection and development of peritonitis. If perforation of bowel occurs and contents spill out, this presents a similar source of infection. Both issues require emergent surgery.

Bowel Obstruction

Bowel-bowl Obstructed

Bowel obstruction is a condition itself which has various causes, but most commonly it is caused by adhesions, hernias or cancer. Patients with small bowel obstruction manifest with symptoms such as nausea and vomiting, while large bowel obstruction more often causes constipation and abdominal distention. Imaging may show multiple air-fluid levels and air absent regions distal to the obstruction. Treatment can be non-surgical with IV fluids and gastric or rectal tube decompression; more complicated cases may require surgery.

Strangulation

Strangled

Often following a hernia or some other form of obstruction, strangulation involves a portion of bowel that has its blood supply compromised and can quickly become necrotic, leading to further complications of rupture, peritonitis and death. Patients present with generalized or localized severe, abdominal pain. Surgery is frequently needed to correct this problem.

Acute Hepatitis

Acute-angle Happy-tie-liver

Acute hepatitis is commonly associated with Hepatitis A infection, although other hepatitis strains may also have acute phases. Hepatitis A virus (HAV) infection often follows ingestion of fecally contaminated food or water, and is known to affect travelers to endemic areas. Although it is often asymptomatic, affected individuals may present with nausea, vomiting, jaundice, and RUQ pain. Treatment is supportive for acute HAV, as the disease is self-limiting.