Acute Abdomen Differential Diagnosis: Upper Quadrants

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. Pain can manifest in any location in cases of bowel obstruction, peritonitis, mesenteric ischemia, and strangulation; the causes within the right upper quadrant (RUQ) which include cholecystitis, biliary colic, cholangitis, perforated duodenal ulcer, and acute hepatitis; and the causes within the left upper quadrant (LUQ) which include splenic rupture and irritable bowel syndrome in conjunction with splenic flexure syndrome.

PLAY PICMONIC

Right Upper Quadrant

Cholecystitis

Coal-on-fire-in-gallbladder

In the setting of acute cholecystitis, obstruction of bile flow facilitates infection and inflammation of the gallbladder. This leads to persistent and worsening RUQ pain with referred pain to the right shoulder. Nausea, vomiting, and fever often accompany this pain. The classic physical exam finding is Murphy sign, which is inspiratory halting when palpating the RUQ due to pain. Diagnosis for cholecystitis due to gallstones is made with ultrasound, and surgical removal of the gallbladder (cholecystectomy) is recommended for treatment.

Biliary Colic

Bill-duck Coal-lick

A common presenting symptom of cholelithiasis (stones in the gallbladder), biliary colic is used to describe episodic RUQ pain that usually follows a fatty meal. High fat meals require bile release, and gallbladder contraction triggers the pain. Investigation into the underlying cause of biliary colic is needed to determine treatment.

Cholangitis

Cola-angel

When gallstones are trapped in the common bile duct, defined as choledocolithiasis, it can lead to the complication of cholangitis, which is an ascending infection of the common bile duct. Usually due to gram-negative bacteria like E. coli, this infection may present with Charcot triad, consisting of jaundice, fever, and RUQ pain. Treat these patients with IV fluids, antibiotics, and correct the underlying cause with stone removal and biliary drainage.

Perforated Duodenal Ulcer

Perforated Dodo-denim in Ulcer-volcano

The first part of the duodenum passes through the RUQ, and it is at this site that ulcers, usually caused by H. pylori infection, will form in the intestinal mucosa. Perforation of a duodenal ulcer in the anterior side can cause acute peritonitis and/or lead to free air under the diaphragm, while posterior ulcer perforation can damage the gastroduodenal artery and lead to massive hemorrhage. Both present with severe RUQ pain and require immediate surgery.

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. 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 hepatitis as the disease is self-limiting.

Left Upper Quadrant

Splenic Rupture

Spleen Rupturing

Be aware of possible splenic rupture whenever a patient suffers severe blunt abdominal injury. Aside from bruising, patients will show tenderness to palpation, guarding, and if a FAST (focused abdominal sonography for trauma) scan is performed, free fluid can be seen in the splenorenal recess. LUQ pain will be present, along with referred pain to the left shoulder, known as Kehr sign. Immediate splenectomy is recommended to control internal bleeding.

IBS (Splenic Flexure Syndrome)

Irritable Bowel-bowl

Irritable Bowel Syndrome, or IBS, presents with varying symptoms of cyclical onset that can include abdominal pain, nausea, cramps, diarrhea and/or constipation. Lab and imaging studies are often normal, so diagnosis is based on patient history. A complication of this disorder is known as splenic flexure syndrome; gas accumulates in the splenic flexure of the large intestine and irritates the surrounding nerves, causing LUQ pain that may radiate upwards through the diaphragmatic nerves. Treatment includes antispasmodics (hyoscyamine, dicyclomine), TCAs, SSRIs and antimotility agents, such as loperamide, for diarrhea.