

A volvulus refers to any malrotation of a portion of intestine that then causes an obstruction and compromise of vascular supply to the affected tissue. Sigmoid volvulus affects the sigmoid colon. This is more common in the elderly, as this portion of bowel becomes more flaccid with age, thus more prone to twisting. Initial symptoms may include LLQ pain, distention, constipation, and hematochezia (bright red blood per rectum). A KUB (kidney, ureters, bladder) x-ray will show a “coffee-bean” sign and can be diagnostic in the majority of cases. Surgical intervention is required to prevent complications like necrosis and perforation.

Sigmoid Diverticulitis

S-mud Diver-on-fire

Diverticula are outpouchings of any mucosal tissue; when there are multiple present in the colon then it is called diverticulosis. This condition is caused by increased bowel pressure (from a chronically fiber-deficient diet), but is usually asymptomatic or with the sole symptom of painless hematochezia. However, when outpouchings become inflamed, the condition is called diverticulitis, and can manifest as LLQ pain, nausea, vomiting, constipation, and diarrhea. CT scan or other imaging is required for diagnosis. If mild, treatment can be achieved with diet modification and pain relief. If severe, antibiotics are recommended to prevent complications like abscess formation.

Lower Quadrant (Both/Either)

Ectopic Pregnancy

Egg-top Pregnant-woman

Any pregnancy that occurs outside the uterus (fallopian tube, ovary, peritoneal cavity) can cause abdominal pain. Complications include infertility and death if fallopian tube rupture triggers internal hemorrhage. Patients can present with severe lower quadrant abdominal pain, especially if fallopian tube rupture has already occurred. Serum hCG that is low for time of gestation and transvaginal ultrasound can be used for diagnosis. Treatment can be non-surgical with methotrexate for a stable ectopic pregnancy, but if risk of rupture is high or has already happened, surgery may be necessary.

Ovarian Torsion

Ovary Twisted

Benign ovarian cysts, such as follicular cysts, or ovarian tumors, such as fibromas, often facilitates ovarian torsion. This is because the enlarged ovary is more prone to being flipped and tangled around the fallopian tube and ovarian artery, compromising the blood supply and leading to a fertility-and-life-threatening condition. Torsion can present with sudden abdominal pain in either lower quadrant. Diagnosis can be made with ultrasound, and treatment is emergent surgery.

Renal Calculi

Kidney Cow-captain

More commonly known as kidney stones, renal calculi occur in a variety of forms. From most to least common are: calcium oxalate/phosphate stones, ammonium-magnesium-phosphate (struvite) stones, uric acid stones and cystine stones. Each type have their own respective causes, but all classically present with colicky lower quadrant pain and hematuria with CVA tenderness on physical exam. CT or ultrasound imaging can be used to assist with diagnosis. Treatment varies depending on type and size; if <5 mm then the stone will most likely pass spontaneously with adequate hydration. If the stone is larger, other therapies include lithotripsy or surgical removal.

Pyelonephritis

Pillar with kidney-on-fire

If a lower urinary tract infection (UTI) goes untreated, it is possible for the infection to ascend to the kidneys, causing pyelonephritis. Most commonly caused by E. coli, patients present with flank pain or lower quadrant abdominal pain on the affected side, with fever, chills, nausea, vomiting, and dysuria. Physical exam will be positive for unilateral or bilateral costovertebral angle (CVA) tenderness. Urinalysis is obtained to look for WBCs and signs of bacteria in the urine. Depending on clinical severity, it can be treated with IV or oral antibiotics, such as ciprofloxacin or ceftriaxone.