Question 2 Key

Develop a differential diagnosis for this patient. Provide at least three potential diagnoses, identify the one you think is the most likely diagnosis, and provide your reasoning. The reasoning would include which features of the patient's history and physical findings "fit" or "don't fit" with each potential diagnosis, and why you believe the most likely diagnosis best explains the patient's illness. You will be graded on your reasoning, not on whether or not you achieve the correct diagnosis or differential. You may use additional resources other than course materials. Please provide a reference if you do use an outside resource.

Important aspects of the history to consider are the location, quality, and time course of the development of pain, other symptoms, and patients age, gender, and other lifestyle/risk factors. Important exam findings include a slightly elevated temperature, rapid pulse, and the abnormal exam findings.

The location of the pain suggests involvement of structures in the left lumbar and inguinal region, or structures that might refer pain to this area. These structures include the descending colon and rectum, the left kidney and ureter, the bladder and prostate, the abdominal wall, the parietal peritoneum. Although portions of the small intestine are located in this area, these are mid-gut structures, and pain will initially be felt in the peri-umbilical area.

The quality of the pain—initially dull and poorly localized suggests visceral pain arising from involvement of an intra-abdominal or retro-peritoneal viscera or visceral peritoneum. The progression to sharp, localized pain indicates subsequent involvement of the parietal peritoneum (innervated by somatic nerves). The steady nature of the pain make obstruction of a luminal structure (colon/intestine/ureter) less likely. The time course suggests an acute illness, but the progression of symptoms argues against a vascular process, which tend to quickly progress to maximal intensity over minutes to hours, instead of days. The fever indicates an inflammatory process (infection, ischemia leading to necrosis, tumor). The anorexia and nausea are consistent with an intra-abdominal process, but are not specific for this. The altered bowel habits suggest an intestinal or colonic process, but are not specific for this either. The absence of blood in the stool is important to consider, as is the lack of preceding symptoms. The absence of GU symptoms and of flank and/or back pain lessens the likelihood of this illness arising from the GU tract. The patient's age (is 65 elderly?—I guess it depends on how close you are to 65) increases the likelihood of diverticular disease, colon cancer, and vascular disease (especially since he has hypertension). Male gender makes many of the conditions that could present in this manner in a female (ovarian tumor, ovarian torsion, pelvic inflammatory disease, ectopic pregnancy, infarction of uterine leiomyomata) impossible.
The exam suggests an inflammatory process (fever), and the local abdominal findings greatly increase the likelihood that the process is arising from intra-abdominal or abdominal wall structures in the left lumbar region.

**The list of following diagnosis includes all of the diagnoses that were discussed by students on the exam. (I hope I have not left any out). It is not an exhaustive list of diagnoses for this patient's illness, but it does represent likely diagnoses.**

**Diverticulitis** – location and quality of pain, gradual onset, associated GI symptoms (anorexia, nausea, altered bowel habits—patient can experience loose stools and/or constipation), absence of GU symptoms, low-grade fever, decreased bowel sounds and tenderness in lumbar area. Rebound tenderness and guarding indicate peritoneal inflammation, perhaps from a ruptured diverticulum. GU symptoms can occur with diverticulitis, but are uncommon. Common illness. This is the likely diagnosis.

**Peritonitis**– this diagnosis is suggested by the location and quality of pain, the low-grade fever, the anorexia and nausea, and the physical exam findings. One must also consider the likely source of peritonitis, which is unlikely to arise without involvement of another structure, (in the absence of ascites or a break in the integrity of the peritoneum caused by trauma or an indwelling catheter).

**Intra-abdominal abscess** – location and quality of pain consistent, associated fever consistent, GI symptoms could be consistent, decreased bowel sounds, tenderness all consistent, but no illness to increase likelihood, no recent surgery. Most likely to occur in setting of diverticulitis or diverticula. (or following surgery or other acute abdominal illness) Less common illness.

**Colon Cancer, with perforation** - location, quality of pain, associated GI symptoms, absence of GU symptoms, low-grade fever, decreased bowel sounds, tenderness with guarding; but no prior h/o of GI symptoms, but nl rectal exam. Common illness, uncommon presentation.

**Colitis (inflammatory bowel disease – Crohn’s or Ulcerative colitis)**—location and quality of pain, gradual onset, associated GI symptoms, absence of GU symptoms, low-grade fever, decreased bowel sounds, tenderness with guarding; but no prior history, no real diarrhea or bloody stools, perhaps more cramping in colitis. Uncommon illness, uncommon presentation.

**Bowel obstruction (colon)**—location of pain (although would often begin in suprabubic area), nausea, other GI symptoms, including absence of bowel movements, but quality of pain is not characteristic, and might expect some vomiting. Fever, Degree of tenderness, with peritoneal signs, suggest fairly advanced obstruction. Relatively uncommon illness.
Inguinal or femoral hernia, incarcerated or strangulated—location of pain; quality of pain, but would expect more cramping, associated GI symptoms; but no h/o hernia; Fever; Tenderness on exam OK, but no hernia noted, although could have been strangulated, and then reduced spontaneously. Common illness, uncommon presentation.

Abdominal wall hernia—see above—Uncommon illness and presentation

Gastroenteritis—Time course of illness not consistent—absence of significant vomiting; persistence of pain after resolution of diarrhea; focal nature of pain and of exam unusual. Common illness, somewhat uncommon presentation

Colonic ischemia (ischemic colitis, affecting the sigmoid colon and rectum)—Pain location consistent, nature of pain consistent, although possibly might be more severe and would be more acute in onset. No associated bloody stools, but does have other GI symptoms. Exam consistent, although with degree of tenderness consistent with peritonitis might expect patient to be more ill and to have blood in stool or on rectal exam. Uncommon illness, uncommon presentation.

Sigmoid volvulus Location of pain consistent, although quality of pain in volvulus usually more crampy. Onset would often be more abrupt, and would frequently be preceded by episodic bouts of crampy pain. Nausea and anorexia fit, but vomiting would also be expected. Fever and tenderness consistent. Change in bowels also consistent. Would expect more distention, and some asymmetry of abdomen on inspection, do to the enlarged loop of bowel.

Irritable Bowel Syndrome Pain is not consistent—usually IBS pain more generalized and crampy. Onset of IBS would be very unusual in a 60-year-old. 60-year-olds can have IBS, but have usually had symptoms for many years. Fever, decreased bowel sounds, and rebound tenderness would be highly unlikely in a patient with IBS.

Appendicitis. Quality of pain, progression of pain consistent, although appendicitis often progresses more rapidly. Anorexia and nausea and fever also consistent. Location is unusual. Could have referred pain in left lumbar and inguinal area, but would usually have pain on right as well. Could have situs inversus (rare), or a cecum and appendix that is in unusual location.

Urinary tract infection/pyelonephritis—location, pain consistent, although not classic. GI symptoms possible, but less likely. No GU symptoms. Abdominal exam not consistent, no CVA tenderness. Common illness, uncommon presentation
**UTI – prostatitis**—pain not classic, but possible; GI symptoms possible, but less likely; no GU symptoms; no pain on rectal exam. Common illness, uncommon presentation.

**Nephrolithiasis (kidney stone) with obstruction and infection**—location and pain quality and characteristics possible but not “classic.” Pain would typically be more abrupt and more severe. GI symptoms possible, but not classic. Absence of GU symptoms consistent, but not classic. Abdominal wall tenderness possible, but again, not classic. Somewhat common illness, uncommon presentation.

**Nerve root irritation** (lower thoracic/upper lumbar disc or arthritic disease—T10 to L1 dermatome). Pain quality not typical for neurogenic (arising from nerve damage) pain; location not clearly dermatomal (in distribution of peripheral nerves arising from a single spinal cord level). GI symptoms would be unusual, as would fever (unless inflammatory process leads to nerve root irritation, but then would expect more back pain). Common illness, uncommon presentation.

**Vascular accident** (ruptured/leaking aneurysm). Typically this involves an aortic aneurysm, and pain tends to be more central, with radiation to back. Pain in left lumbar and inguinal area could involve leaking of an iliac artery aneurysm, but would expect pain to be more abrupt in onset, and would typically be more severe, with a much shorter course before patient would present. The GI symptoms would tend to point you away from this diagnosis. Ruptured iliac artery aneurysms are also uncommon.

**Initial evaluation of this patient would likely include a urinalysis, a blood count, a complete chemistry profile that would include “belly labs”**—including liver function tests, amylase and lipase (these latter two for pancreatitis). In the ER this patient would receive a CT scan of the abdomen. In an office setting, the diagnosis would often be made clinically, with antibiotic therapy initiated (either as an outpatient or inpatient), with further imaging based on overall severity of illness based on clinical picture and lab results and response to therapy.