

CLINICAL VIGNETTE

Acute Abdominal Pain in the Elderly

Roswell Quinn, MD PhD

Case Report

An 86-year old woman presented to the emergency room with dyspnea on exertion and fatigue. She had a history of congestive heart failure with preserved ejection fraction, atrial fibrillation on anticoagulation, hypertension, and prior transient ischemic attack. Home medications include metoprolol, warfarin, furosemide, and lisinopril. She frequently forgets her home medications and has not been taking her prescribed diuretic for over a year.

The patient reported 1 week of symptoms. She described being able to walk to the mailbox at baseline but was no longer able to do this and was unable to climb a flight of stairs. She became short of breath walking from room to room. Her exercise tolerance has declined over several years. The dyspnea is associated with dry cough, weakness, 5 pound weight gain, anorexia, and two loose stools. She had an episode of back pain located between her scapula 1 week ago that resolve spontaneously.

In the Emergency Room, the patient's vitals included: temperature 37.4, heart rate from 83 to 164, blood pressure 125/68, oxygen saturations 100% on room air with a respiratory rate of 16. Physical exam was notable for fine bibasilar crackles without increased work of breathing. JVP was elevated 9cm above the sternal angle. Heart sounds were normal with tachycardia and irregular rate, and there was trace-pitting edema of the bilateral lower extremities. Abdominal exam was benign. Laboratory testing included white blood cells 18K, hemoglobin 11.9, sodium 133, potassium 3.5, chloride 100, bicarbonate 20, BUN 32 creatinine 1.1, INR 2.6, BNP 638, troponin I negative. She received 1L on normal saline, 5mg of IV metoprolol times three, and underwent a CT angiogram of the chest that was negative for consolidation, pulmonary embolism, or effusions.

After admission to the internal medicine service, the patient received intravenous furosemide

along with her home metoprolol, lisinopril, and warfarin. She was seen by infectious diseases and ACS work was negative. The morning following admission the patient reported to the team that her prior back pain radiated to the RUQ. Abdominal ultrasound revealed a perforated gallbladder. The patient's heart failure was medically optimized and an uncomplicated cholecystectomy was performed prior to discharge.

Discussion

Acute abdominal pain in older adults can present a diagnostic and therapeutic challenge. Physiologic changes with age can predispose individuals to abdominal pathology, such as biliary disease¹. Yet, older adults often have nonspecific symptomatology, present for evaluation later, have complex medical histories and coexisting disease, and can be poor surgical candidates. As a result, when compared to patients under 65 years old, those greater than 65 with acute abdominal pain have increased concurrent illnesses, longer hospital stays, more misdiagnosis, greater delays to surgery². This creates an unfortunate situation in which diagnostic accuracy is low, and mortality is high in this special population³.

Acute abdomen pain refers to new abdominal pain that is less than seven days old. The differential diagnosis of an acute abdomen remains broad in older adults. Along with common causes of an acute abdomen (cholecystitis, appendicitis, small bowel obstruction, pancreatitis, peptic ulcer disease, etc.) there are age specific considerations that require attention. These include conditions associated with age-related pathophysiology such as mesenteric ischemia, large bowel obstruction, diverticulosis, and aortic abdominal aneurysm. In addition, illnesses prevalent in the elderly - urinary tract infection, myocardial infection, or pneumonia - can present with abdominal pain.

Acute abdominal pain in the elderly can be challenging to diagnose. Patients frequently have atypical, seemingly benign, or even asymptomatic presentations. Research has demonstrated this for bowel perforation, appendicitis, cholecystitis, intra-abdominal infections, and peptic ulcer disease⁴⁻⁸. Morphine, so frequently used to treat abdominal pain in emergency rooms, can mask physical exam findings, specifically rigidity, in older adults with surgical abdomens⁹. One researcher has concluded that the physical exam could not reliably predict or exclude significant disease in older patients with acute abdominal pain¹⁰.

Initial diagnostic testing also fails to establish clear diagnoses in older patients with abdominal pain. White count, hemoglobin, liver function tests, and even lactate have not differentiated between surgical and non-surgical disease in geriatric inpatients when examined retrospectively¹¹. Unfortunately, newer diagnostic and surgical approaches have not improved outcomes in this population.¹² Misdiagnoses in this high-risk population have unfortunate outcomes. One small study found the mortality rate of patients over 80 years old with

acute abdominal pain who were misdiagnosed was 59%¹³. A similar study found the mortality rate to be three times greater in misdiagnosed older adults when compared to their younger counterparts¹⁴.

The above differences in presentation and diagnosis of older adults with acute abdominal pain place this group at high risk for poor outcomes. When compared to individuals under 65 years old, older patients with abdominal pain can have double the time from admission to surgery³. Delays in presentation, diagnosis, and intervention –as seen in our case– confer increased morbidity. For example, a greater number of perforations have been seen in older cohorts with appendicitis¹⁵. When surgical interventions do occur earlier, outcomes remain poor. Emergent laparotomy in patients over 80 have high levels of morbidity (70% with life threatening post-operative complications) and mortality (45%)¹⁶. These unfortunate outcomes warrant a high level of suspicion and diagnostic acumen in adults greater than 65 years of age presenting with new abdominal pain that is less than last seven days in duration.

KEY POINTS

- Acute Abdominal Pain refers to new pain less than 7 days old.
- In patients over 65 the differential diagnosis should be expanded to include age-related abdominal pathologies and common non-abdominal pathologies.
- Older adults present later, have atypical presentations, and are more frequently misdiagnosed.
- Delays to surgery, length of stay, morbidity and mortality are higher in older adults with acute abdominal pain.

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