Case Report:

Connecting the dots – Acute abdomen, ST elevation and a consolidating lung mass

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Introduction

Community acquired pneumonia is a commonly treated disease and yet may present in very unfamiliar ways that if missed may result in unnecessary testing, procedures and potential harm. Encouraging reporting and discussion of these atypical presentations may help increase clinical suspicion and timely diagnosis.

Case

We present a 38 year old male with no prior medical history who came to the ED with a three day history of severe, cramping lower abdominal pain. This was intermittent, non-radiating, and was exacerbated with movement. Associating symptoms were anorexia, constipation, fever, chills, nausea and retching. He denied use of tobacco, alcohol or recreational drugs.

Physical exam revealed an acutely ill patient who was febrile (38.8C), with pulse 89 beats/min, respiratory rate 18 cycles/min, BP 164/85 with orthostatic changes and oxygen saturation (room air) 98%. On abdominal exam, there was generalized abdominal tenderness with rigidity and guarding. Respiratory exam was normal. The patient was therefore worked up for an intra-abdominal cause of acute abdomen which included acute appendicitis. Labs drawn showed white blood cell count 11300/microL without bands and hemoglobin 12.9 g/dl. CT scan of the abdomen revealed normal abdominal viscera and minimal abdominal free fluid. However, a “mass like opacity” in the right lower lobe of the right lung was reported. Meanwhile, a 12 lead EKG showed left ventricular hypertrophy, with significant ST elevation in the anterior leads, pathological q waves, T wave inversion in the lateral chest leads as well as reciprocal changes in the inferior leads. Cycled troponins were negative.



Figure 1: EKG

Review of systems by the admitting team highlighted a history of intermittent productive cough with yellow sputum one day prior to presentation. Dullness to percussion over right posterior lower lung fields, was also noted on exam. A CT scan of the lung confirmed right lower lobe consolidation. Pneumonia hence became the diagnosis, with an atypical presentation of acute abdomen.

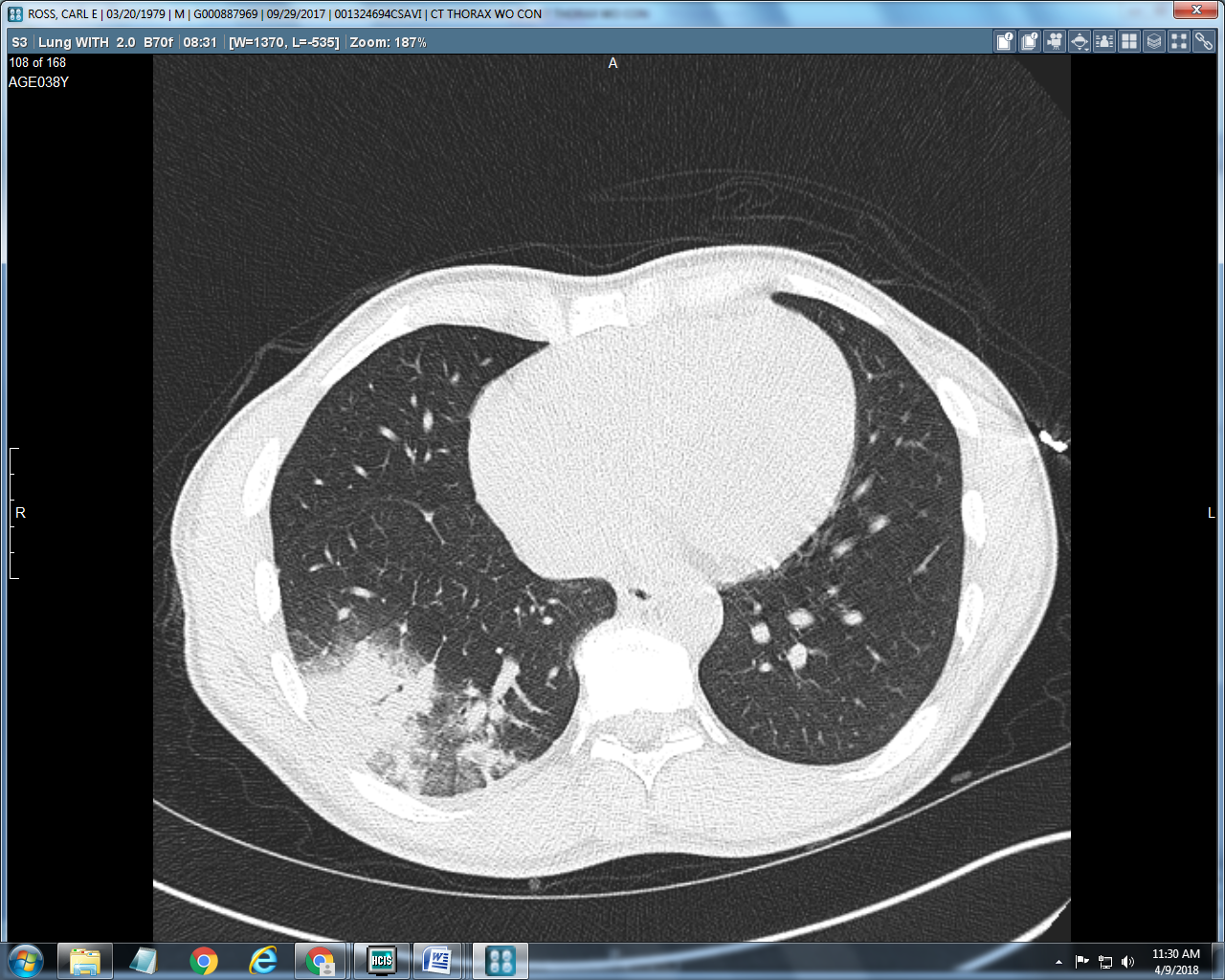


Fig 2: Chest CT Showing Consolidation in Lower Lobe of Right Lung

Further investigations were as follows: A CT scan of the lung (Fig 2) confirmed consolidation of the lateral segment of the right lower lobe. The patient developed crepitations on day two admission which resolved on day four admission. The patient was passing flatus during admission with return of bowel habits by day two admission, with full resolution of abdominal pain on day four of admission. Repeated EKG’s were similar, with some progression of ST elevation, while cycled troponins were negative. A transthoracic echocardiogram revealed no ventricular wall motion abnormalities, with normal ejection fraction and no valvular abnormalities. Serological and microbiological tests for legionella, mycoplasma IgG and IgM, influenza A and B, as well as blood cultures were negative. Sputum cultures were excluded this admission. The patient was treated empirically with ceftriaxone and azithromycin during his five-day hospital stay with intravenous normal saline to correct his orthostatic hypotension, which was likely due to his anorexia. He was discharged to complete a week’s course of cefpodoxime with a two week follow up as an outpatient, which the patient did not keep.

Discussion

The typical presentation of pneumonia, irrespective of type, or organism involved is that of respiratory symptoms (cough, sputum, shortness of breath) with or without fevers and chills. Extra-pulmonary symptoms may occur depending on the organism involved, however they are usually not the predominant feature and usually proceed or occur with the respiratory symptoms. In children, pneumonia is the most common cause of an extra-abdominal cause of acute abdomen, however this presentation occurs in 2-5% of pneumonia cases. For adults, very few case reports have been presented of pneumonia presenting in this way – however older reports estimate 8% of pneumonia patients may present this way1. With such presentations, respiratory symptoms do not always precede abdominal findings, and in some cases, may not become fully prominent until later in the illness1,2,3. As there are more common causes of acute abdomen, it is not surprising that pneumonia in the past has been mistaken as surgical causes of acute abdomen, leading to unwarranted emergency surgeries1. With the uninhibited use of imaging this may have become less common, however even with such, findings of pneumonia such as in this case can be incidental2,3. It up to the physician therefore to exercise a great sense of clinical suspicion when investigating the cause of acute abdomen, including a thorough review of systems and considering involving a chest X-ray when the presentation is atypical.

Cardiac complications presenting as EKG abnormalities can also be an uncommon presentation of pneumonia, which again can vary depending on the organism. A study reflected that the most common EKG findings maybe non-specific ST changes, however arrhythmias and other conduction abnormalities may result4. It must also be highlighted that cardiac aberrations relating to pneumonia are not exclusive to atypical organisms like mycoplasma pneumonia alone, as streptococcal pneumonia CAP can cause cardiac abnormalities as well5, which can be sometimes self-limiting. This again emphasizes the chameleon potential of community acquired pneumonia. It also highlights in general the clinical acumen to place abnormal investigations such as these into context, rather than making a diagnosis based on the EKG alone (Note that in this patient, although the EKG findings were significant to suggest a myocardial infarction, it was not entertained due to low pretest probability as well as a normal troponin level).

In conclusion, the atypical presentations of pneumonia can be a diagnostic complexity which maybe underreported. As an extra-pulmonary cause of acute abdomen, it should be considered in the event the presentation is atypical or other causes has been ruled out. Cardiac manifestations are also possible and it is not limited to atypical organisms – the management of EKG abnormalities as with other potential alarming signs should not be approached with isolation but in the context of the patient.

References

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