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Massive Painless Aortic Dissection Masquerade as Lung Cancer with Pneumonia

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Abstract

We report a patient who presented with productive cough with dyspnea and change of voice who initially diagnosed as pneumonia. Later was found to have upper chest mass causing vocal cord paralysis suspected lung cancer but eventually turned out to be painless aortic dissection causing ortner syndrome. Left vocal cord paralysis is a concerning sign for painless aortic dissection even in patients with elevated risk of lung cancer such as old age and smoking. CT angiogram is usually the to go test in most scenarios, but if not appropriate due to contraindication such as renal dysfunction, ultrasound or MRI can be reliable alternative tests to expedite diagnosis and treatment.

Keywords: Aortic dissection • Ortner syndrome • Pneumonia

Introduction

Aortic dissection is relatively uncommon and typically presents acutely as anterior chest pain in ascending aortic dissection or back pain when the dissection progresses distal to the left subclavian artery. A minority of Aortic Dissection can be asymptomatic. It is usually a catastrophic illness that can cause hemodynamic compromise. Early and accurate diagnosis and treatment are crucial for survival.

Ortner syndrome is a rare presentation of aortic dissection causing laryngeal nerve compression. It is also known as cardio-vocal syndrome. Hoarseness occurs as a result of recurrent laryngeal nerve involvement. Due to the long course of the left recurrent laryngeal nerve and association of it to the nearby cardiovascular structures in the mediastinum, left vocal cord palsy is most commonly reported [1].

Some report claimed 10% of aortic dissections are painless [2]. Others in series report of 235 patients claimed that 33% of the patients denied pain or discomfort on presentation [3].

Case Presentation

71-year-old female with history of heart failure preserved ejection fraction, coronary artery disease, aortic aneurysm repair, COPD not on home oxygen, smoking, hypertension, diabetes mellitus, hyperlipidemia presented to the emergency department with worsening dyspnea, productive cough with whitish sputum, change of voice for 2 weeks. Patient denied any fever, chills, chest pain.

Patient was seen by her primary care physician, diagnosed pneumonia, and treated with oral antibiotics for 2 weeks without improvement. In emergency room found to have acute hypoxic respiratory failure with oxygen saturation in 80% and started on nasal cannula oxygen 2 liters/min. Physical exam showed rales and fine crackles in both lungs base but otherwise within normal limits. Was also found to have leukocytosis 17.1 × 103/mcL, tachycardia 106bpm. Meets SIRS (Systemic Inflammatory Response Syndrome) criteria. Chest X-ray showed bilateral lung opacities, left greater than right (Figure 1). NT-proBNP 2172pg/mL.

Patient was admitted under working diagnosis of acute hypoxic respiratory failure secondary to sepsis secondary to community pneumonia with acute on chronic heart failure exacerbation component. Patient was treated with Vancomycin and cefepime because failed oral antibiotic outpatient. Was initially also on Azithromycin but later discontinued due to negative urine streptococcus and legionella antigen. Respiratory panel negative received IV lasix and later transitioned back to PO torsemide home medication. Cardiac Echo was done and showed ejection fraction 55-60%, Grade II diastolic dysfunction otherwise within normal limit. For change of voice patient underwent non-contrast CT chest and found large mass-like structure in the anterior superior mediastinum. Consolidation in the lingual left lower lung lobe and medial portion of the right

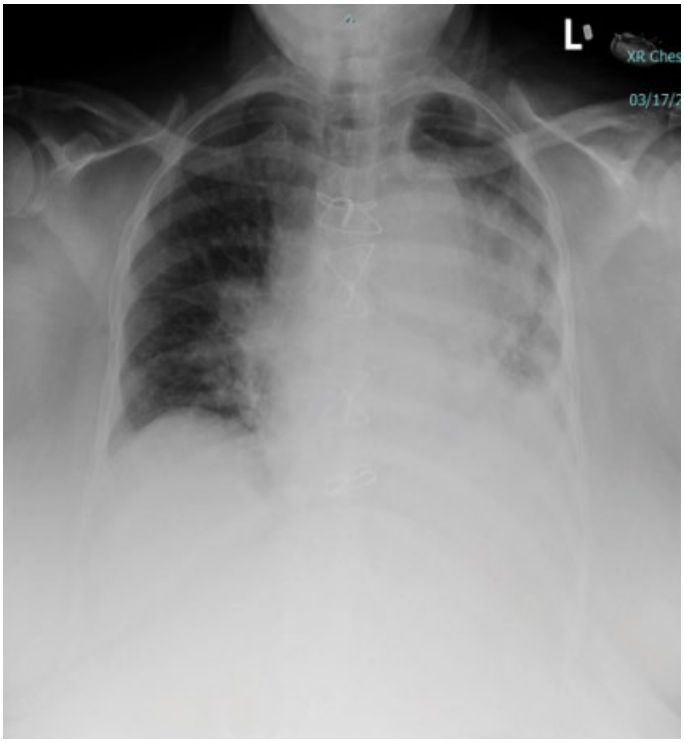

Figure 1. Chest X-ray showed bilateral lung opacities, left greater than right.

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upper lobe (Figure 2). But due to patient worsen renal function with increased creatinine to 1.28mg/dL no CT contrast study was done on admission.

Otolaryngology was consulted for change of voice. Performed flexible laryngoscopy showed left sided vocal cord paralysis which could be secondary to left lung mass compressing on the Laryngeal nerve. And recommended thoracic surgery and pulmonology to evaluate lung mass. Pulmonology consulted suggested likely lung carcinoma considering smoking history and lung mass. Recommended interventional radiology for biopsy, if not diagnostic can plan for bronchoscopy and biopsy. Thoracic surgery consulted, based on the patient's presenting symptoms, smoking history, imaging studies and results of laryngoscopy the most likely diagnosis is carcinoma of the lung involving the left recurrent laryngeal nerve. Recommended to get CT scan of the chest abdomen pelvis and brain with contrast to better characterize her thoracic pathology and determine the presence or absence of metastatic lesions.

Patient was sent to interventional radiology to prepare for biopsy of mass. In that time patient creatinine improved and close to baseline although still elevated. It was assessed and determined that the benefit of giving CT contrast to better visualize the mass outweighed the risk of exacerbating renal dysfunction. CT chest with contrast was done in radiology department. Showed massive ascending aortic pseudo-aneurysm extending into the anterior superior mediastinum measuring 9.8 × 14.0 cm, with small communication from the anterior aspect of the ascending aorta. Type B dissection beginning in the post left subclavian aorta spiraling into the abdominal aorta with true lumen perfusion of the visualized superior mesenteric artery and celiac axis. Additionally small pulmonary emboli right lower lobe left basilar consolidation and atelectasis (Figure 3).

Upon the finding of aortic dissection, subcutaneous heparin and aspirin was discontinued. Thoracic surgery discussed with Vascular Surgery determined due to patient complex condition with pseudo-aneurysm arising likely from the distal anastomosis of previous aortic arch repair, patient might have had a previous type A dissection and a current type B dissection, patient might have had a hemiarch repair for her original type A dissection approximately 10 years prior. Vascular Surgery recommended impulse control in the form of reducing heart rate and blood pressure with respect to her type B dissection. However pseudo-aneurysm from the aortic arch is a pressing matter which will require cardiac surgery intervention. Because patient previous aortic aneurysm repair was done in another hospital in the region, decision is made to transfer patient back to same hospital for emergent cardiac thoracic surgery intervention.

Discussion

Although the typical presentation of aortic dissection is chest pain, tachycardia, dyspnea, hypertension. About 10-30% of aortic dissection can present painless. Leading to risk of delay in diagnosis and treatment. Caution should be taken to catch the silent presentation of aortic dissection. Patient in our case has atypical presentation for aortic dissection due to the lack of chest pain but with cough and sputum production, leukocytosis, pulmonary infiltration in chest x-ray and non-contrast CT strongly pointing towards pneumonia. The history of smoking and large upper chest mass with vocal cord paralysis also skewed clinician attention more towards lung cancer.

The presence of renal dysfunction has led to CT angiogram not getting done immediately on admission. For future practice under these circumstances,

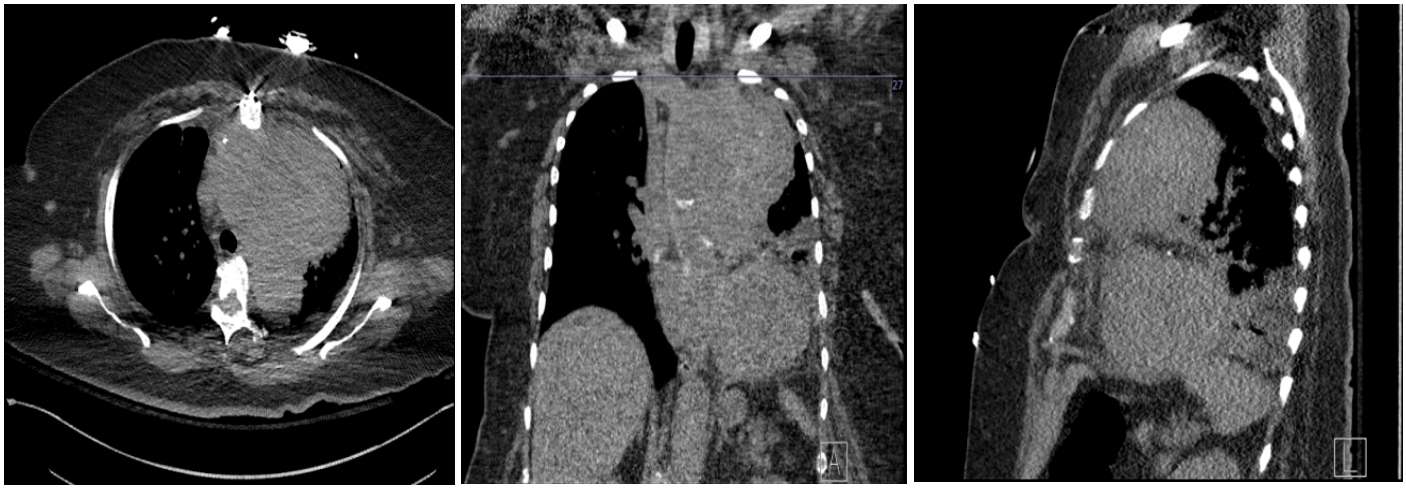

Figure 2. Consolidation in the lingual left lower lung lobe and medial portion of the right upper lobe.

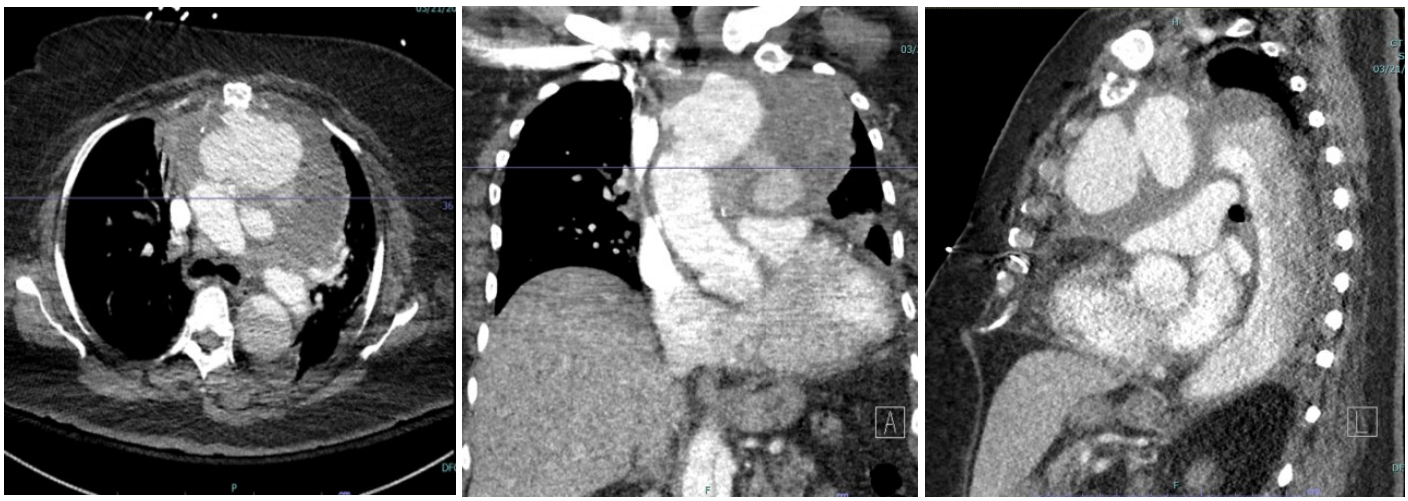

Figure 3. Small pulmonary emboli right lower lobe left basilar consolidation and atelectasis.

improvements on promptness of diagnosis and treatment can be achieved by involving ultrasound or MRI technique [4].

Overall, Aortic CT angiogram and MRI are superior to ultrasound for the imaging of aortic dissection location and morphological structure because of a greater field of view. Transthoracic Echocardiography (TTE), vascular ultrasound, Transesophageal Echocardiography (TEE), intravascular ultrasound and contrast-enhanced ultrasonography are complementary to aortic multi-slice spiral computed tomography angiography for diagnosis, treatment and prognostic evaluation [5].

TTE can assess several aortic segments, but is best for aortic root and proximal ascending aorta [6]. There are reports indicating sensitivity for ascending aorta dissection was 78–90% but 31–55% in descending aortic dissection [7]. Unfortunately in our case, our TTE focusing on assessing cardiac function did not detect the massive aortic dissection.

According to certain research, adding contrast to TTE can increase detection capability of aortic dissection. Report suggested contrast TTE can increase sensitivity and specificity for detecting type A aortic dissection to 93 and 97% in type A aortic dissection. As for type B dissection the sensitivity 84% and specificity 94% both are also increased although not as good as type A [8].

In our case our TEE was done without contrast, potentially limiting the ability to visualize aortic dissection. For future practice ordering TTE and emphasize use of contrast could improve diagnostic power of TTE in hospital settings.

There also been report on successful utilization of Point-of-Care Ultrasound for large aortic dissection diagnosis and expedited diagnosis and treatment for patient [9].

MRI technique is also a good alternative for aortic dissection imaging. Even the traditional Electro Cardio Gram (ECG)-gated spin-echo sequences. It can determine aortic dimensions accurately and detect dissections. Rapid breath hold MRI techniques is an alternative protocol with less susceptible to respiratory artifact than conventional spin-echo MRI. Conventional MRA without contrast is great in detecting aortic aneurysms and dissections; it is superior to spin-echo MRI to identify position of the aortic abnormalities to major branch vessels [10].

Meanwhile, our case is also a reflection on 2 commonly seen clinic practice bias. Authority Bias and Anchoring bias. Since the patient was seen by ENT, Pulmonary, Thoracic surgery all suggested most likely diagnosis to be lung cancer, primary team did not question the recommendation made by consultant specialists. Subsequent works up were anchor onto the impression of patient having lung cancer.

Conclusion

In rare case, massive aortic dissection can present painlessly and masquerade as lung cancer with vocal cord dysfunction. Even when patient has elevated risk for lung cancer, painless aortic dissection should still be considered in differential diagnosis, especially when left vocal cord paralysis is present. CT angiogram is usually the test of choice for diagnosis due to high speed and high accuracy, but if not applicable when there are contradictions such as renal dysfunction, ultrasound and MRI is good alternative test to pursue in these scenarios. General internal medicine practice should be cautious with common clinical bias. In our case, Authority Bias and Anchoring bias were believed to have contributed to a delayed recognition of clinical situation.

References

1. Hammad, Nour, Ahmad Jabri, Zaid Shahrori and Faris Haddadin, et al. "Ortner's syndrome: A rare case of hoarseness secondary to chronic aortic dissection." *SAGE Open Med Case Rep* 10 (2022): 2050313X221108651.
2. Khan, Ijaz A., Norrapol Wattanasauwan and Abdul W. Ansari. "Painless aortic dissection presenting as hoarseness of voice: Cardiovocal syndrome: Ortner's syndrome." *Am J Emerg Med* 17 (1999): 361-363.
3. W. W. G. "Dissecting aneurysms of the aorta." Textbook of surgery: the biological basis of modern surgical practice. 15 (1997): 1647–1654.
4. Mussa, Firas F., Joshua D. Horton, Rameen Moridzadeh and Joseph Nicholson, et al. "Acute aortic dissection and intramural hematoma: A systematic review." *Jama* 316 (2016): 754-763.
5. Liu, Fengju, Lianjun Huang, Fengju Liu and Lianjun Huang. "Usefulness of ultrasound in the management of aortic dissection." *Rev Cardiovasc Med* 19 (2018).
6. Evangelista, Arturo, José Manuel Rabasa, Victor X. Mosquera and Antonio Barros, et al. "Diagnosis, management and mortality in acute aortic syndrome: Results of the spanish registry of acute aortic syndrome (RESA-II)." *Eur Heart J Acute Cardiovasc Care* 7 (2018): 602-608.
7. Evangelista, Arturo, Frank A. Flachskampf, Raimund Erbel, Francesco Antonini-Canterin, et al. "Echocardiography in aortic diseases: EAE recommendations for clinical practice." *Eur J Echocardiogr* 11 (2010): 645-658.
8. Erbel, R., W. Daniel, C. Visser and R. Engberding, et al. "Echocardiography in diagnosis of aortic dissection." *Lancet* 333 (1989): 457-461.
9. Wisbeck, Alexander W., Steven M. Field and Michael C. Cooper. "Diagnosis of a large type-A aortic dissection using point-of-care ultrasound." *J Emerg Med* 60 (2021): 112-114.
10. Hartnell, George G. "Imaging of aortic aneurysms and dissection: CT and MRI." *J Thorac Imaging* 16 (2001): 35-46.

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