May 2015 Pulmonary Case of the Month: Pneumonia with a Rash

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History of Present Illness

A 77-year-old man underwent a thoracic CT scan for follow up of a known thoracic aneurysm. However, he had been feeling tired for about a week with a cough, night sweats and fever. He had no shortness of breath, wheezing or known history of lung disease.

Past Medical History, Social History and Family History

He has a history of hypertension and a known thoracic aortic aneurysm. There was a surgical repair of his right clavicle after a motor vehicle accident. He is single and has lived in Arizona for over 50 years. He just returned from a trip to California where he visited Disneyland. He does not smoke. Family history is noncontributory.

Current Medications

- Dutasteride
- Levothyroxine
- Atorvastatin

Physical Examination

His physical examination was reported as unremarkable. SpO2 was 95% on room air.

Radiography

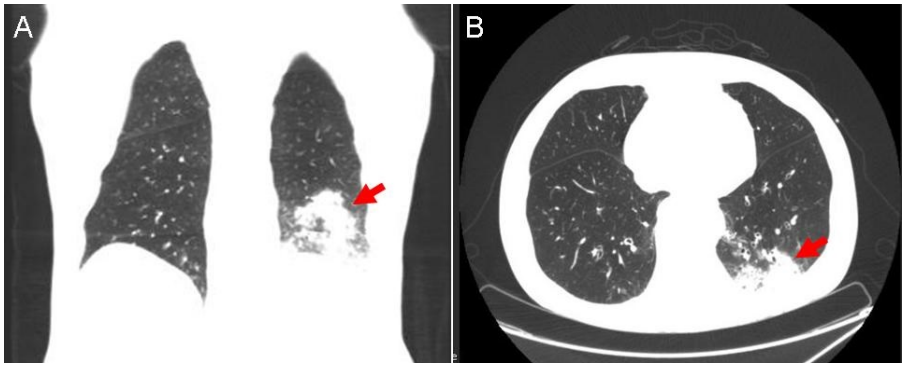

Figure 1. Representative images from his thoracic CT scan showing a left lower lobe consolidation (red arrows). Panel A: coronal projection in lung windows. Panel B: axial view in lung windows.

Which of the following is appropriate at this time?

1. Begin empiric antibiotics
2. Bronchoscopy with bronchoalveolar lavage
3. Sputum Gram stain and culture
4. 1 and 3
5. All of the above

Correct!
4. 1 and 3

The patient has some symptoms suggestive of pneumonia but does not appear terribly ill. In this situation a sputum Gram stain and culture and empiric antibiotics is appropriate. Although bronchoscopy with bronchoalveolar lavage can be used to obtain lower respiratory tract cultures, it is invasive and seems overly aggressive at this time in this non-immunocompromised patient.

A sputum Gram stain was unremarkable and the patient was begun on levofloxacin. His sputum culture was eventually reported as showing no growth. Three days later he calls and complains of a rash (Figure 2).

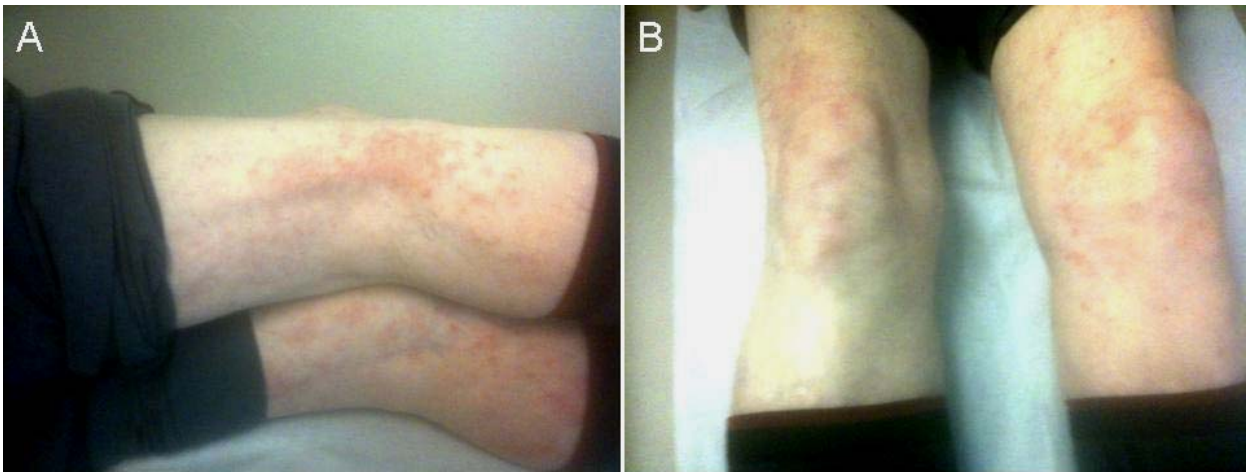

Figure 2. Photographs of the patients macular rash. The rash also extended into the groin area.

Which of the following is the ***most likely cause*** of the patient's rash?

1. Coccidioidomycosis
2. Drug rash from the levofloxacin
3. Measles
4. Rocky mountain spotted fever
5. Sarcoidosis

Correct!
1. Coccidioidomycosis

All of these diseases can be associated with a rash. Of those listed a drug-induced rash would probably be most common. However, the rash combined with the pneumonia and the patient's Arizona residence is highly suggestive for coccidioidomycosis or Valley fever. The rash associated with Valley fever is most often described as a painful rash over the shins and is associated with a number of lung diseases, most commonly sarcoidosis. However the rash can be seen in other areas and does not necessarily have to be painful. There was a recent outbreak of measles which originated from an infected patient at Disneyland. Rocky Mountain spotted fever is very rare in the Southwest. Neither are likely in this clinical situation.

Which of the following is ***true regarding coccidioidomycosis***?

1. Coccidioidomycosis is a rare cause of pneumonia in Arizona
2. Coccidioidomycosis should be treated immediately with amphotericin B
3. Coccidioidomycosis should be treated immediately with fluconazole
4. The rash associated with coccidioidomycosis is called erythema nodosum
5. The rash is secondary to cutaneous infection with *Coccidioides immitis* or *posadasii*

Correct!

4. The rash associated with coccidioidomycosis is called erythema nodosum

The rash is called erythema nodosum and as discussed above is associated with a number of lung disorders. It is immunologic reaction and does not represent cutaneous infection and does not need specific treatment. Coccidioidomycosis can be observed as long as the infection is localized to the lungs but can be treated with fluconazole or amphotericin B in cases of dissemination (1). Coccidioidomycosis is very common in Arizona accounting for as many as one-third of pneumonias (2).

Our patient's coccidioidomycosis serology returned a few days later and was positive. He was begun on therapy with fluconazole and his rash quickly resolved. Therapy is planned for about 3 months.

References

1. Limper AH, Knox KS, Sarosi GA, Ampel NM, Bennett JE, Catanzaro A, Davies SF, Dismukes WE, Hage CA, Marr KA, Mody CH, Perfect JR, Stevens DA; American Thoracic Society Fungal Working Group. An official American Thoracic Society statement: Treatment of fungal infections in adult pulmonary and critical care patients. Am J Respir Crit Care Med. 2011;183(1):96-128. [CrossRef] [PubMed]
2. Hector RF, Rutherford GW, Tsang CA, Erhart LM, McCotter O, Anderson SM, Komatsu K, Tabnak F, Vugia DJ, Yang Y, Galgiani JN. The public health impact of coccidioidomycosis in Arizona and California. Int J Environ Res Public Health. 2011;8(4):1150-73. [CrossRef] [PubMed]