

COCCIDIOIDOMYCOSIS IN A YOUNG MIGRANT PATIENT WITH NEW ONSET TYPE 1 DM

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INTRODUCTION:

Coccidioidomycosis is a common fungal disease in the southwestern parts of United States, Northern Mexico and parts of South America with the highest number of cases found in Southern California and Arizona. The disseminated form of coccidioidomycosis is more common in African-Americans, Hispanics, Filipinos, pregnant and immuno-compromised patients (1). This case highlights the importance of the early diagnosis of coccidioidomycosis in non-endemic areas such as the Pacific Northwest. Diabetes is among other comorbid conditions that carries an increased risk of progression to disseminated coccidioidomycosis (2).

CASE:

We report the case of a 29-year-old male patient who presented to emergency department (ED) with complaint of 4 days shortness of breath, fever and chills. Exam findings were significant only for tachycardia and tachypnea. Chest x-ray demonstrated a right lower pulmonary infiltrate consistent with community-acquired pneumonia, and he was given a one-time dose of intravenous ceftriaxone and discharged home on oral antibiotics. He returned to ED following day with progressive respiratory compromise requiring intubation with mechanical ventilation. He was placed on intravenous vancomycin and meropenem. Blood cultures, sputum cultures, and respiratory viral panel PCR including COVID-19 were negative. Urine legionella and streptococcal pneumoniae antigens were also negative. CT angiogram chest was pertinent for bilateral lower lobe opacities.

Patient underwent bronchoscopy with bronchoscopic alveolar lavage sampling which grew *Coccidioides*. A serum *Coccidioides* complement fixation titer of 1:16 was concerning for disseminated disease. The patient was also found to have skin findings concerning for disseminated disease. The patient was treated with liposomal Amphotericin B and high dose IV Fluconazole. The patient improved clinically and was able to wean off the ventilator after lengthy hospitalization. Once the patient was extubated the patient reported that he previously worked as an agriculturist in Arizona and is now living in Washington state. The patient during his admission was also found to have newly diagnosed diabetes mellitus with a hemoglobin A1c of 11 g/dl. Repeat imaging has demonstrated gradual improvement and he remains on oral fluconazole with anticipated completion at 12-18 months course of antifungal therapy.



Figure 1: This image shows rash in our patient with disseminated coccidioidomycosis.

DISCUSSION:

Most patients exposed to *coccidioides* are asymptomatic. Symptomatic patients have symptoms which are not easily distinguishable from community acquired pneumonia. For patients who are not responding to antibiotic therapy for CAP and belong to non-endemic areas for coccidioidomycoses with positive risk factors or have a positive travel history to endemic areas should be investigated for coccidioidomycoses. Prompt initiation of treatment such as amphotericin B and azole anti-fungals can improve prognosis. Some cases may require surgical debridement and resection(4). The most common cause of dissemination of disease is underlying immunocompromised state. Sixty percent of infected people are asymptomatic at presentation while forty percent have mild symptoms such as cough, fever, fatigue, dyspnea and non specific joint pains. This can make early diagnosis challenging(3).

CONCLUSION:

Patients who fail improve with conventional antibiotics for Pneumonia and may have traveled through or lived in an endemic areas should raise concern for Coccidioidomycosis. Early diagnosis and management can decrease patient morbidity and mortality, hospital admissions, healthcare cost, and use of unnecessary empiric antibiotics.

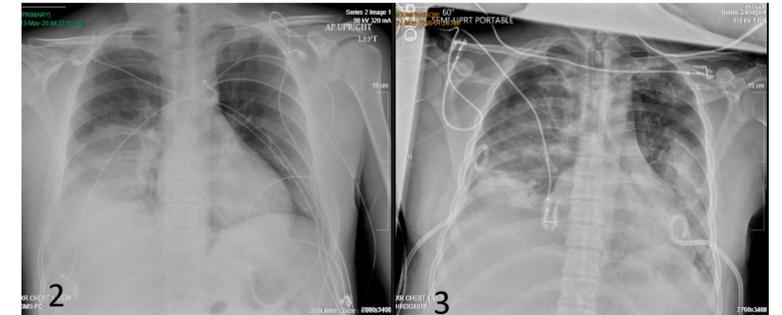


Figure 2 and 3 shows small bilateral pleural effusions, right greater than left.

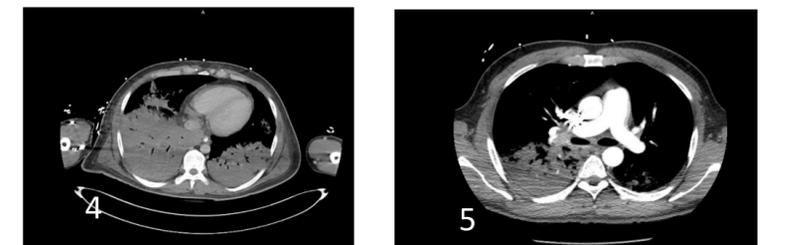


Figure 3 and 4 shows large bilateral consolidations which are substantially worsened compared to prior CT scan findings. Heterogeneous hypodensity in the right lower lobe may represent a pulmonary abscess.

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