



# Disseminated Coccidioidomycosis

Mohit Bhatt DO, Anita Bajpai MD, Derrick Nguyen DO, Attending: Dr. Pang DO

RUHS/UCR Family Medicine Inpatient Team



## Introduction

Coccidioidomycosis is primarily an infection of the lungs but in severe cases, the infection can spread to various parts of the body. Coccidioidomycosis has a regional distribution across the Southwestern United States, Mexico, Central, and South America. This case pertains to a 35-year-old previously healthy, immunocompetent, male who presented with a cough after exposure to mold. Within 3 months of exposure, the patient experienced a disseminated coccidioidomycosis infection with multi-organ involvement.

## Case Presentation

**Background:** 35-year-old male with no past medical history presented to the clinic with 3 months of shortness of breath and cough. Confirmed exposure to mold at work. Initially developed cough and diagnosed with pneumonia. Presents to ED 3 months after initial onset of symptoms with 30 lbs weight loss, fevers, myalgias and various skin lesions.

### Pertinent Physical Exam:

**Psychiatric:** Mood and affect normal.

**Cardiovascular:** Tachycardia, normal heart sounds.

**Pulmonary/Chest:** Effort and breath sounds normal. No respiratory distress, wheezing, rales

**MSK:** Tenderness (L elbow and L ankle) and edema/warmth (L elbow and L ankle), Decreased ROM of L elbow and L ankle, increased warmth

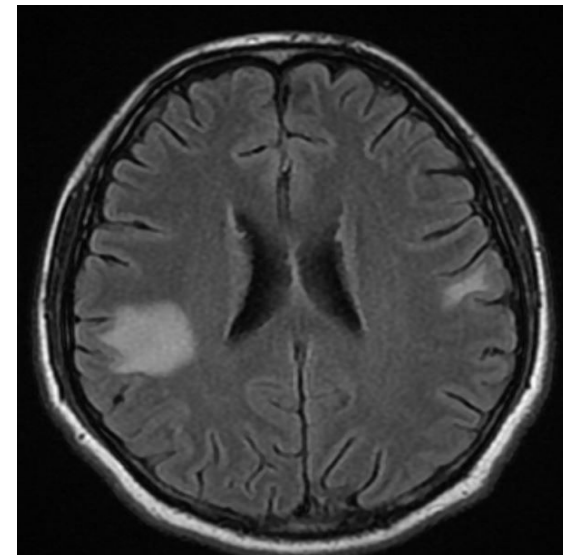
**Neurological:** A&O x3. He has normal sensation. GCS 15.

**Skin:** Various open skin lesions of different ages noted: R eyebrow, back, abdomen, L leg, cervical adenopathy (R supraclavicular LAD present)

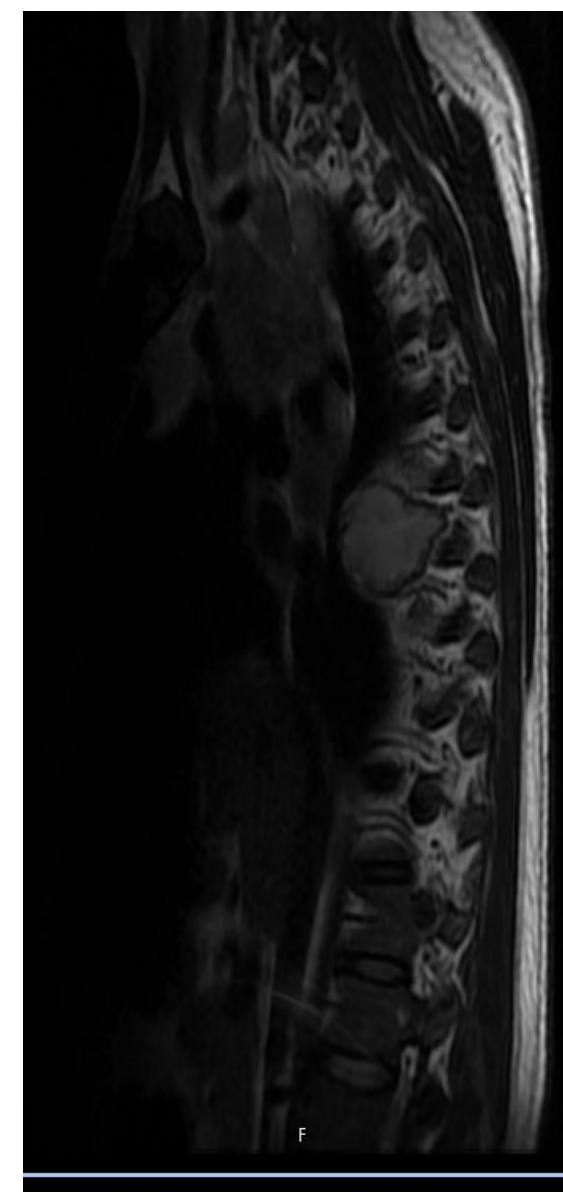
### Labs:

- Negative: RPR, HIV, Hep C, Quantiferon
- Positive Coccidiomycosis Ab titer 1:256
- LP: CSF WBC- 49, protein- 80, glucose -32 and CSF culture demonstrated no growth

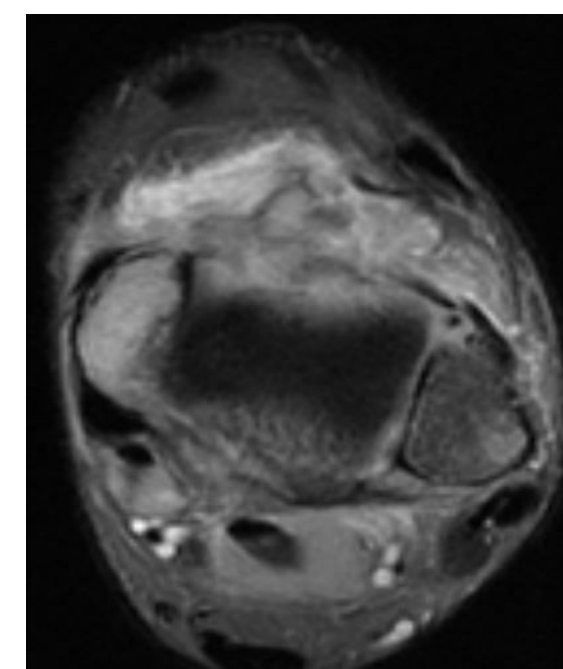
## IMAGING



MRI Brain with and without Contrast: greater than 10 interaxial masses involving bilateral hemispheres the largest measuring up to 8mm in the right parietal lobe supramarginal gyrus.



MRI Thoracic Spine Multiple: enhancing fluid collections in paraspinal regions at T7-T10. Marrow replacement at T7-T8 with intervening disk fluid.



L ankle MRI demonstrated complex effusion with soft tissue edema.

## DIFFERENTIAL

- Tuberculosis
- Wegner Granulomatosis
- Pneumonia
- Histoplasmosis
- HIV

## TX COURSE

After failing Fluconazole 800mg daily therapy the patient was started on Amphotericin B 300mg daily for 14 days. Despite treatment with Amphotericin B the patient continued to have worsening lesions on repeat imaging and new onset LLE weakness and hyperreflexia. The patient was started on daily Voriconazole and dexamethasone therapy with eventual steroid taper. The patient also received 7 scheduled intrathecal injections of Amphotericin with improvement in his weakness. Patient's symptoms continued to improve and was discharged on Voriconazole 200mg BID with close follow up and monitoring with ID clinic.

## DISCUSSION

Most people who get infected with Coccidioidomycosis will be asymptomatic. Mild flu-like symptoms such as fever, fatigue, and night sweats as well as myalgias/artralgias and rashes can occur for weeks to months which typically self-resolve. Some associated risk factors for symptomatic and/or disseminated coccidioidomycosis include immunosuppression, pregnancy, organ transplantation, hemodialysis, and certain ethnicities such as: African American, Native American, Filipino, or Hispanic. There are some studies indicating there may be a genetic component in the severity of coccidioidomycosis infection. Appropriately functioning IL-12, IFN-gamma, and STAT3 mediated immunity are shown to have protective factors against coccidioidomycosis.

In the case of this patient, his only known risk factor for coccidioidomycosis was Hispanic ethnicity. Further testing could include titers of the complement-fixation antibody (to determine disease severity) and looking into interleukin-12 abnormalities. Patients with disseminated coccidioidomycosis will often need life long antifungal therapy.

## REFERENCES

- Akram, S., & Koirala, J. (2021, January 31). *Coccidioidomycosis*. Ncbi.Nlm.Nih.Gov. <https://www.ncbi.nlm.nih.gov/books/NBK448161/#:~:text=The%20spherules%20grow%20to%20the%20size%20of%2075%20microns%20in%20diameter.>
- Ampel N. M. (2015). THE TREATMENT OF COCCIDIOIDOMYCOSIS. *Revista do Instituto de Medicina Tropical de Sao Paulo, 57 Suppl 19(Suppl 19)*, 51–56. <https://doi.org/10.1590/S0036-46652015000700010>
- Ampel NM, Giblin A, Mourani JP, Galgiani JN. Factors and outcomes associated with the decision to treat primary pulmonary coccidioidomycosis. *Clin Infect Dis.* 2009;48:172–8. 10.1086/595687