Management of Disseminated Nocardiosis in an Immunocompromised Patient Using Multi-Drug Therapy

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BACKGROUND

Nocardiosis may cause fatal infections in immunocompromised and immunocompetent patients. While there are many different species, *Nocardia farcinica*, has been a clinically important cause but less frequently identified species. We present a case of an immunocompromised patient successfully treated with a multi-drug regimen for disseminated nocardiosis due to *Nocardia farcinica.*

CASE PRESENTATION

Patient is a 65-year-old male who presented with fevers, chills, symptomatic anemia, and new left lower extremity weakness associated with spasms over several days prior to arrival. He had a history of severe Autoimmune Hemolytic Anemia (AIHA) and was on high dose corticosteroids. He had also received rituximab, cyclophosphamide previously, and recently undergone splenectomy.

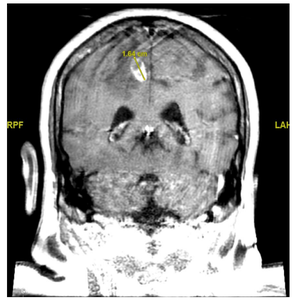

Figure 1. MRI Brain
A peripherally enhancing mass lesion is identified within the right posterior frontal lobe with moderate edema; possible metastasis.

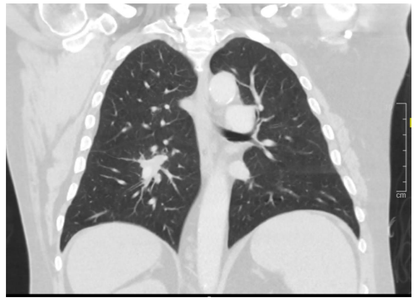

Figure 2. CT Chest
Innumerable new spiculated pulmonary nodules and masses throughout the lungs, largest in the RLL. Findings are most consistent with pulmonary metastatic disease

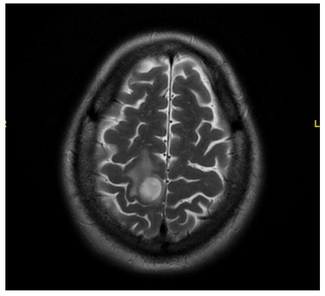

Figure 3. MRI Brain
Re-evaluation of Mass lesion measures approximately 1.5 x 1.6 x 2.0 cm, overall increased in size when compared to prior lesion.

RESULTS

Imaging of lungs and brain as shown (Fig 1 & 2). He underwent lung biopsy of lung lesion which revealed branching filamentous bacilli. Blood cultures and tissue grew *Nocardia farcinica*. The specimen was sent to reference laboratory for susceptibility testing. He was initially treated with Imipenem and IV Bactrim. Subsequently, clinical exam findings were unchanged and repeat MRI brain (Fig. 3) showed enlarging frontal mass. Linezolid and IV Amikacin were added to the regimen based on susceptibility results. Patient was discharged home with Linezolid, IV Bactrim and IV Amikacin as there was national shortage of Imipenem. He returned to hospital shortly after discharge with severe hemolytic anemia, suspected to be due to Bactrim administration. The patient was later discharged home on Amikacin, Linezolid, and oral Moxifloxacin, in stable condition without surgical intervention and with improved left lower extremity weakness. He remained improved on a regimen of Amikacin, Linezolid once-daily and Moxifloxacin.

CONCLUSIONS

- Disseminated Nocardiosis is known to cause fatal pulmonary and CNS infections in immunocompromised patients.
- It requires aggressive therapy usually with multiple antibiotics.
- *Nocardia farcinica* infections are particularly clinically complex given the organism's multiple inherent resistance mechanisms, virulence, interpretation of in vitro susceptibility testing, and possible adverse effect profile of treatment regimen.
- Difficulties in procurement of imipenem for outpatient parenteral antibiotic therapy made availability of a safe outpatient antibiotic regimen challenging.