



# 05/3/24 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: Zachary Owens Case Discussants: Rabih Geha (@Rabihmgeha) and Reza Manesh (@DxRxEdu)



## CC: Altered mental status

**HPI:** 53 y/o male s/p bilateral lung transplant 10 years ago for IPF and ESRD, now presenting with AMS.

1 month prior pt was hospitalised for fevers and dyspnea, found to have a RML cavitary lesion on chest CT. Diagnosed as Nocardia pneumonia and bacteremia, treated with Bactrim.

**PMH:** Pul. Fibrosis due to Sarcoid. Bilat. Lung transplant. ESRD from CNI induced nephrotoxicity, HTN

**Meds:** Tacrolimus, MMF, prednisone 5mg, labetalol

**Fam Hx:** none

**Soc Hx:** Currently on disability, lives with family.

**Health-Related Behaviors:** No tobacco, alcohol, or illicit substance use. No recent travel hx, No other risky behaviors.

**Allergies:** none

**Vitals:** T: 98.5 F HR: 80 BP: 127/73 RR: 14, SPO2: 95% on 2LNC

**Exam:**

**Gen:** NAD, resting comfortably

**HEENT:** wnl, **CV:** wnl, **Abd:** wnl

**Pulm:** CTAB with normal work of breathing

**Neuro:** alert but disoriented, impaired heel-shin testing, bradykinetic on finger tapping, low amplitude postural tremor, CN wnl, strength, sensation, reflexes wnl

**Extremities/skin:** no skin lesions or joint lesions

**Notable Labs & Imaging:**

**Hematology:** WBC:4.9 (25 on previous admission) Hgb: 7 (chronic) MCV: 99 Plt: 148

**Chemistry:** Na: 133 K: 3.6 Cl: 93 HCO3: 27 BUN: 57 Cr: 8.1 Glucose: 82 Ca: 7.7 Mag: 1.9, AST: wnl ALT: wnl Alk-P: 99 Albumin: 3 Total Protein: 5.2, TSH nl

**Negative:** HIV Ag ab test, Serum Crypto Ag, 1,3 beta d glucan, Galactomannan, Toxo IgG, EBV DNA PCR negative, Blood cultures: Nocardia

**Imaging:**

**MRI Brain:** 2 cm enhancing left basal ganglia lesion w/ mild vasogenic edema and slight midline shift. No prior images.

**CT chest w/o contrast:** small peripheral RML opacity w/ some architectural changes with overall improvement from prior.

**Hospital course:** Lesion was too deep for brain biopsy, LP was not performed, high suspicion of CNS Nocardia and risk of herniation with inc. ICP.. Pt started on meropenem and linezolid, bactrim continued for 10 days with no improvement..

**MRI Brain done again:** L basal ganglia lesion increased in size now w/ rim-enhancement. 2 new lesions seen in R parietal lobe. Overall stable vasogenic edema w/ midline shift

**Diagnostic test:** Brain biopsy: EBV-positive Large B Cell Lymphoma

**Dx:** CNS Lymphoma/ Post-transplant lymphoproliferative disorder (PTLD)

**Problem Representation:** 53 y/o male s/p bilateral lung transplant 2\* to sarcoidosis, PMH of ESRD, Nocardia bacteremia now presents with AMS. Physical exam revealed postural tremors and bradykinesia, Brain CT showed enhancing lesion in L basal ganglia and CT chest showed a RML opacity.

**Teaching Points (Anmolpreet):**

**I] AMS:** tempo is the key! Primary problem in the brain or systemic ds affecting brain? **MIST:** Metabolic, Infectious, Structural/Neurologic, Toxic → **Reviewing med list, Complete Metabolic Profile, NH3**

**II] s/p transplant:** - OVERSUPPRESSION/UNDER SUPPRESSION → Direct toxicity from immunosuppressive meds (eg:Tacrolimus can cause TMA or PRES) or ds. consequent of the immunosuppression, involvement of lungs directly, GVHD (which predominantly can affect skin, GIT too) **ESRD on dialysis :** increases risk of Thiamine deficiency as well!

**III] Nocardia :-** soil borne organism! Has tendency to affect skin, lungs and brain(can cause brain abscesses)

**IV] Sarcoidosis :** (diagnosis of exclusion) granulomas affecting the lungs with other extrapulmonary symptoms!

Sarcoidosis increases the risk of **lymphoma** and **cryptococcal disease**.

**V] Presence of multiple focal neurologic symptoms → MRI brain with and without contrast** and looking at the systemic fingerprints would help.

**VI] In an immunosuppressed patient, serologic tests are of little value.** Galactomannan can cross react with other fungi/moulds and beta-D-glucan isn't able to detect many fungi eg: cryptococcus, blastomyces, mucor, rhizomes.

**VII] Tremor** could be 2/2 Tacrolimus neurotoxicity or a cerebellar tremor?

**VIII] Brain mass:** infectious/cancer? (idea based on diffusion restriction) Is it restricted to brain/systemic? Is lung opacity related to that? Have we assessed the skin to completely understand? → lungs, liver, skin, spine need to be looked for. **Was Nocardia completely treated?**

**IX] Tumors to brain:** MRCT → Melanoma, RCC, Choriocarcinoma, Thyroid! **Next steps:** imaging abdomen/PET-CT?? LP? LDH(considering lymphoma)? Vasogenic edema with midline shift: we consider giving dexamethasone and consulting neurosurgery.