

10th Euro-Global Conference on **Infectious Diseases** & 5th International Conference on **Histopathology & Cytopathology**

September 27-29, 2018 Rome, Italy

A case report on *Listeria monocytogenes* meningoencephalitis/cerebritis, acute disseminated encephalomyelitis and *Cytomegalovirus* bacteremia in an immunocompromised patient on steroid therapy

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Listeria monocytogenes is an opportunistic pathogen that affects immunocompromised patients and has a very high mortality rate. Central nervous system (CNS) infection and bacteremia are the foremost clinical manifestations in susceptible hosts. Infection with multiple pathogens is not common but still possible especially in the immunocompromised. Presenting a case of a 57 year old woman admitted for sepsis from meningoencephalitis: bacterial vs. fungal vs. viral etiology and pneumonia in an immunocompromised; R/O stroke; probable glomerulonephritis; pancytopenia from sepsis and blood loss; and lower gastrointestinal bleeding. She presented three months ago with persistently elevated blood creatinine and proteinuria and was diagnosed with non-biopsy proven glomerulonephritis. Treatment with oral prednisone 60 mg total per day was given for seven weeks up to day admitted. She had hematochezia days prior and then had high grade fever and inability to speak. Physical examination was notable for pallor, negative signs of *Cytomegalovirus* (CMV) retinitis on funduscopy, Broca's aphasia, nuchal rigidity and very minimal right-sided decrease in muscle tone. Blood analyses showed low hemoglobin and platelet with normal white blood cell (WBC) count, creatinine was elevated. Electroencephalogram findings show diffuse, mild encephalopathy of non-specific etiology and plain brain CT findings of small rounded density in the left frontal lobe. Non-contrast Brain MRI revealed multiple hyper intense lesions in T2/FLAIR over the deep and sub-cortical white matter of the bilateral frontal lobes, left temporal lobe and right occipital lobe and left capsule-ganglionic region, largest measuring 2.4x2.5x3 cm seen in the periventricular left frontal lobe with minimal mass effect. Cerebrospinal fluid (CSF) analysis: colorless clear fluid with red blood cells (RBC) 990 cells/ul; WBC 650 cells/ul (62% lymphocytes, 38% neutrophils); protein 3,296 mg/L; glucose 2.4 mmol/L; cryptococcal antigen latex agglutination system, TB-PCR, acid fast stain, India ink tests were all negative; viral tests for CMV, herpes simplex, varicella zoster, Dengue and Japanese encephalitis were all negative. Empiric anti-infection treatment was started with intravenous ceftriaxone, vancomycin, metronidazole and acyclovir. Prednisone oral was continued to prevent adrenal insufficiency. CSF and blood cultures were positive for *Listeria monocytogenes* on the third hospital day. The antimicrobial regimen was shifted to ampicillin and meropenem. Marked clinical improvement was evident for 1-2 days after anti-infectives were shifted. Blood CMV PCR was positive thus ganciclovir was started. On the 12th hospital day, there was worsening of pneumonia, meropenem was shifted to cefepime and metronidazole. On the 16th hospital day, she had recurrence of Broca's aphasia. Non-contrast brain MRI showed decrease in size of previous multiple lesions but new tiny sub cortical white matter FLAIR hyper intense foci were seen in the right frontal area. Repeat CSF analyses were normal except for low IgG 4.91 g/L. Acute disseminated encephalomyelitis (ADEM) treatment with dexamethasone was effective and improved speech production after three days. Gastrointestinal bleeding from a jejunal angioectasia seen in enteroscopy was controlled with cauterization. On follow-up after a month, she is coherent and conversant, able to ambulate with support. The authors conclude that early detection and treatment of *Listeria* infection is essential for a good prognosis. Infection with multiple pathogens should be watched out for in susceptible hosts. ADEM may develop post CNS infection and should be watched for.

Biography

Roberto Salvino is a Physician at the Asian Hospital and Medical Center and is actively involved in the training of Internal Medicine Residents. He was a Former Member of The Board of Council of the International Society for Infectious Diseases during 2008-2014. He is a Diplomat of the American Board of Internal Medicine. He is a member of various medical societies such as the American College of Physicians, European AIDS Clinical Society, and American Society for Microbiology, Philippine Society for Microbiology and Philippine Society for Microbiology and Infectious Diseases. He is an executive with a diverse experience in the fields of academic, clinical medicine, pharmaceutical medicine and corporate governance.

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