A Rare Cause of Fever, Chills, Myalgias and Diarrhea in an Immunocompetent Host

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Introduction

Cytomegalovirus (CMV) infection is usually asymptomatic in the healthy immunocompetent host. Despite seventy percent of U.S. adults having been infected with CMV, severe disseminated infection is typically only seen in congenital infections and infections in immunocompromised hosts, such as transplant patients and in patients with acquired immunodeficiency syndrome (AIDS). We report a case of disseminated infection in an immunocompetent patient.

Case Presentation

History

- A 50 y/o female schoolteacher with a no significant PMH presented to the ED with one week onset of fever, chills and myalgias. After a 3-day hospital stay and workup she was discharged with the diagnosis of flu.
- She subsequently was seen as an outpatient and given empiric antibiotics for UTI or pyelonephritis that had no effect on her fevers to 104 F.
- The patient was readmitted with fevers, rigors, abdominal pain, nausea, non-bloody emesis and diarrhea. She also reported headaches with the fevers. Patient denied any sick contacts or recent travel.

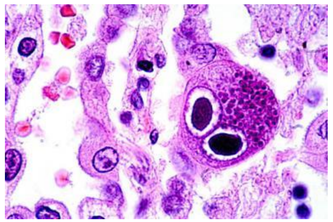
Physical Exam

- Vitals- T-101.4 F Tmax-101.6 F BP-122/70 Pulse- 93 O2 Sat 94% on RA
- HEENT- No palpable nodes
- Lungs-CTA
- Heart- Regular Rhythm, no murmurs.
- Abdomen- soft, non-tender, no masses or hepatosplenomegaly on exam
- Skin- no rash

Hospital Course

- During her hospital stay the patient underwent an extensive workup to determine the cause of her fevers and chills. (see additional studies)
- Finally after at the end of the workup she was found to be have positive titers for CMV IgM and IgG.
- Her CMV DNA PCR revealed a high virion copy number (5949) and an immunoglobulin panel revealed elevated IgM at 421.
- She was subsequently treated with Valganciclovir 900 mg BID and discharged home with improvement in her clinical condition and liver transaminases.

H & E Stain Showing Typical CMV Owl-Eye Inclusion Bodies[3]



Additional Studies

Imaging & Other Studies

- CXR was negative
- CT of the Chest W/CTA revealed scattered nodules in the left lung with a focus on the left upper lobe and tiny bilateral pleural effusions.
- Abdominal Ultrasound revealed a mildly enlarged liver and hepatobiliary sludge with no stones and the patient was noted to have a positive sonographic Murphy's sign.
- CT abdomen and pelvis revealed mild splenomegaly and scattered bilateral inguinal lymph nodes.
- Echocardiogram- Normal with no evidence for thrombus or vegetation
- Bone Marrow Biopsy- Negative
- Hepatobiliary Nuclear Study: EF 17%, delayed gallbladder emptying may represent chronic cholecystitis.

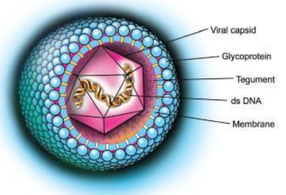
Labs

- Initial CBC on readmission- WBC-5.0 Hgb 9.9 Plt-174 normal diff
- Initial CMP on readmission- ALT- 96 (H), AST-127(H), Alk Phosph-130(H), Alb 2.8 (L) Normal Na, K+, Cl, CO_2, Protein, Total Bili, and eGFR.
- Negative Blood and Urine cultures
- Negative C diff PCR studies
- Negative HIV, HSV 1 & 2, and acute Hepatitis Panel
- Negative EBV including EBV quantitative qPCR
- Negative Cocci, Resp Virus panel
- Negative Influenza, RSV, Parvo B19, West Nile Virus, Enterovirus
- Negative CSF studies
- Positive Mycoplasma IgG 2.67 but Negative Mycoplasma IgM 196
- Negative Cold hemagglutinins
- Negative AFB Culture and Smear & Quantiferon Gold testing
- Negative RPR
- Negative Stool culture; Giardia and Cryptosporidium negative
- Negative Malarial smears
- Negative Brucella IgG and IgM, Q Fever IgG and IgM, RMSF IgG and IgM
- Positive sedimentation rate 60 H
- Positive CMV titers IgG and IgM 421(H)
- CMV DNA PCR- 5949 virions

Discussion

- Cytomegalovirus is a double-stranded DNA virus, from the Herpesviridae family. Transmission of this virus occurs via sexual contact, breast milk, respiratory droplets, blood transfusions, and vertical transmission. Typical CMV infections cause a subclinical, mononucleosis-like self- limiting syndrome. In these cases symptoms can include malaise, fever, mild-liver function abnormalities and lymphocytosis with atypical lymphocytes (occurring in 10% of immunocompetent adults).[1]
- Disseminated CMV and/or complications of a CMV infection rarely occur in an immunocompetent host.[2] Previous case reports on immunocompetent patients with severe CMV infection have also had a diagnosis of hepatitis or colitis as did our patient. These patients can present with bloody diarrhea and abdominal pain. CMV can also cause pneumonitis and CNS involvement what may include polyradiculopathy, transverse myelitis and subacute encephalitis.
- Known risk factors for reactivation of a prior CMV infection include the first 100 days status post tissue or bone marrow transplant and HIV/AIDS (CD4+ <100/mm3) or with a viral load > 10,000 copies). CMV infection in utero can result in congenital abnormalities involving but not limited to sensorineural hearing loss, chorioretinitis, and periventricular calcifications. CMV retinitis is associated with CD4+ <50/mm3.
- Our patient tested negative for any disease or condition that would place her in an immunocompromised state.
- Although rare, our case demonstrates that one should consider the diagnosis of disseminated CMV in the differential of unknown causes of fever, chills, and diarrhea with elevated liver enzymes even in an immunocompetent host.

CMV Structure[4]



HCMV Human Cytomegalovirus

References

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