

Case of Cytomegalovirus Colitis: A Rare Cause of Abdominal Pain and Diarrhea in an Adult Patient

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ABSTRACT

Cytomegalovirus (CMV) is common in immunocompromised patients and in patients taking immunosuppressants. Infection with CMV can manifest as an exacerbation of mucosal inflammation. Whether CMV is an active pathogen or “an innocent bystander” in the exacerbation of ulcerative colitis remains controversial. Though rare, still CMV colitis must be considered in the differential diagnosis in immunocompetent patients in whom there is no relief in diarrhea or abdominal pain with antibiotics. If not diagnosed promptly there can be a bowel perforation leading to poor prognosis. In unexplained diarrhea cases, endoscopic biopsy and measurement of CMV immunoglobulin (Ig) M antibody level are warranted.

We present a case study of a 51-year-old male with complaints of loose motions, abdominal pain, and generalized weakness. He was not on immunomodulators like steroids and was managed as a routine case of infective bacterial diarrhea. Initially, the patient's symptoms resolved but later because of drowsiness and abdominal distension, he had to be shifted to the intensive care unit (ICU). His endoscopic biopsy was done which was suggestive of CMV colitis. He was prescribed ganciclovir—intravenous (IV) and considerable improvement was seen. The patient was discharged in a hemodynamically stable condition. From this case one can conclude that CMV colitis in immunocompetent hosts is rare but strong clinical vigilance can help in preventing further worsening of symptoms.

Keywords: Case report, Cytomegalovirus colitis, Diarrhea in immunocompetent, Endoscopic biopsy.

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INTRODUCTION

Cytomegalovirus (CMV) is a double-stranded deoxyribonucleic acid virus belonging to the human herpesvirus family. In healthy subjects, CMV colitis is a self-limited disease or without any manifestation but there are chances that it may cause chronic infection or a life-long carrier state with reactivation happening sporadically.¹ CMV resurrection is generally seen in a severe form of corticosteroid-resistant ulcerative colitis. The symptoms of patients are very nonspecific, including diarrhea, pyrexia, abdominal pain, haematochezia, and significant weight reduction. Hematochezia and diarrhea are the most common manifestations in these patients. Therefore, strong speculation is mandatory and laboratory workup is essential in detecting CMV colitis. Early diagnosis and treatment are beneficial in sick and critical patients.

CASE DESCRIPTION

A 51-year-old male, chronic smoker and alcoholic, was presented with a history of loose motions, abdominal pain, and generalized weakness for a few days. He was not on any immunomodulators. Initially, he was admitted to the ward and his laboratory parameters were within normal range. Ultrasonography (USG) abdomen was showing features of inflammatory bowel disease (IBD) and computed tomography (CT) abdomen was also suggestive of similar features with few prominent mesenteric lymph nodes. As recommended by a gastro physician upper gastrointestinal endoscopy and sigmoidoscopy with biopsy were done which was suggestive of diffuse colitis (infective/IBD). Blood cultures drawn on admission did not reveal any growth. Initially, he was treated as a case of esophageal candidiasis, IBD, and alcoholic liver disease. He was shifted to ICU because of drowsiness and abdominal distension. USG abdomen was repeated which was suggestive of diffuse caecum and proximal ascending colonic wall thickening with

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gaseous bowel loops. To conclude the diagnosis colonic biopsy was taken again and the report was suggestive of CMV colitis. CMV viral load was sent which was elevated. The patient was administered antiviral ganciclovir for a total of 4 weeks for which he was given IV for initial 2 weeks followed by oral ganciclovir for 2 weeks along with supportive nutritional supplements and blood products. The patient showed improvement after the management and was discharged in a hemodynamically stable condition.

DISCUSSION

Cytomegalovirus (CMV) causes a primary infection followed by a dormant phase. There are high chances of recurrence if the virus reactivates due to the immune system getting weak by immunosuppressive drugs or in the geriatric age group. CMV infection is common as it can spread by close contact and through body fluids. CMV IgG-positivity ranges between 40 and 100% increasing with age.

Several studies have clearly described that CMV infection is more common in immunocompromised individuals for example in patients taking steroids, immunosuppressants, those having renal disease, or acquired immunodeficiency syndrome, etc. Certain meta-analyses have shown infection in immunocompetent patients.² Interestingly, age above 55 years was associated with poor outcomes. Endoscopy and biopsy are the most essential diagnostic modalities when CMV colitis is suspected.

The entire digestive tract can be involved in infection, however, in an immunocompetent host, the colon is the most usual location. The patient with CMV colitis can present with low-grade pyrexia, abdominal pain, anorexia, generalized weakness, and also with watery diarrhea, and hematochezia. Bowel perforation and mucosal hemorrhage are considered to be life-threatening conditions.³ After initial diagnostic tests like USG (abdomen + pelvis) and contrast-enhanced CT abdomen, colonoscopy helps detect overall CMV-related findings. The most frequently identified colonoscopic findings are well-demarcated ulcerations, infiltrative changes, and pseudomembrane formation.⁴ Owl's eye inclusion bodies are specific on microscopic examination for supporting the infection with CMV. However, histology is not reliable because of low sensitivity. Immunohistochemistry or simple hematoxylin and eosin staining has a better sensitivity as compared to histology. Owl's eye inclusion bodies and the polymerase chain reaction (PCR) detection of CMV in the gut go hand in hand in identifying CMV.

The typical mechanism of how CMV colitis occurs is still not well understood. The hypothesis has been put that CMV can replicate in the endothelial cells of blood vessels leading to vasculitis, ulcer formation, and small bowel thrombosis leading to ischemic colitis, mucosal hemorrhage, or intestinal perforation and carries a poor prognosis.⁵

Endoscopic findings in our patient mimicked IBD and ischemic colitis. However, when the patient did not improve led us to think of other possible diagnoses. A controlled IBD can worsen by CMV colitis or steroid use which can cause uncontrolled colitis. Thus steroids should be used with due precautions when CMV is suspected. A retrospective study of 12 patients showed similar findings and detection as early as possible led to a positive result.

Cytomegalovirus (CMV) colitis can occur in two ways—primary and secondary. The primary mechanism in which the virus itself multiplies and causes inflammation in endothelial cells leading to vasculitis and ulceration. The secondary mechanism is where the host is already having IBD or ischemic colitis leading to mucosal injury which ultimately causes local immune suppression.

Several drugs are being used as systemic therapy which include ganciclovir, valganciclovir, foscarnet, and cidofovir which are studied well in immunocompromised hosts about their effects

as well as side effects. However, in immunocompetent patients, their clinical effect is still not extensively studied or proven. The dosing and the time up to which they have to be given are also not very clear. At present, ganciclovir is the drug of choice for CMV infection in immunocompetent patients. By giving a combination of ganciclovir and foscarnet the outcome of CMV colitis patients improves drastically. Thus all immunocompetent patients should be given antiviral therapy to have good outcomes.

In our case after initiating ganciclovir therapy, there was marked clinical improvement, with considerable healing of ulcers as seen during the colonoscopy. No serious side effects of ganciclovir were observed.

CONCLUSION

Cytomegalovirus (CMV) infection is expected in immunosuppressed patients but a high index of suspicion is justified particularly in immunocompetent patients whose diarrhea does not resolve with conventional treatment. The diagnosis can be established by biopsy and PCR testing. Appropriate treatment on time can avoid complications and ultimately decrease mortality. This case description is presented to increase knowledge about CMV colitis in the medical community and keep it as a possibility even in immunocompetent patients when routine etiological workup has been completed.

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