

Case report

Systemic cytomegalovirus masquerading as a colorectal mass in a patient with undiagnosed HIV/AIDS

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ABSTRACT

Introduction: Cytomegalovirus (CMV) infection is common among patients with human immunodeficiency virus (HIV) infection. Gastrointestinal (GI) involvement with tumor like lesion is a rare presentation. Our patient presented with rectal pain and findings concerning for malignancy. Subsequently our patient was diagnosed with acquired immunodeficiency syndrome (AIDS), CMV viremia and CMV proctitis.

Case: A 37-year-old man who reported having sex with men presented with severe proctalgia and hematochezia. Imaging showed irregular rectal wall thickening concerning for malignancy. Sigmoidoscopy revealed a circumferential necrotic lesion suspicious for malignancy. Surprisingly, biopsy showed a cytopathic effect compatible with CMV infection. In addition to testing positive for CMV, patient was newly diagnosed with HIV/AIDS, hepatitis C, syphilis, and gonorrhea. CMV infection was treated with ganciclovir, which resulted in a significant response. Ganciclovir was later replaced with valganciclovir. Valganciclovir was continued and antiretroviral therapy (ART) was started as an outpatient and with resolution of symptoms.

Discussion: CMV infection is one of the most common opportunistic infections among patients with HIV infection. Several cases of CMV colitis were reported among immunocompromised patients. Our patient's presenting symptoms and direct visualization of rectal lesion were not only deceptive but also unique. As what looked like a rectal malignancy was later diagnosed as tissue invasive CMV by biopsy. Invasive CMV infection should be managed with ganciclovir.

Conclusion: GI CMV as the initial presentation of HIV is rare. Moreover, CMV proctitis can masquerade as a rectal cancer and clinicians should be aware of this rare presentation of CMV.

Introduction

CMV is the largest virus among the herpes virus family [1]. CMV is ubiquitous and its seroprevalence among the United States population is around 50 % [2]. CMV infection is common among patients living with HIV infection. An overwhelming number of patients with CMV have retinal involvement and visual symptoms. Gastrointestinal involvement of CMV is relatively less common. The aim of this case report is to present a patient who had a perirectal mass concerning for a neoplasm who was ultimately diagnosed with CMV proctitis in setting of HIV infection and advanced AIDS.

Case

A 37-year-old man who has sex with men, with a past medical history of rectal hemorrhoids presented to the hospital complaining of rectal pain. The pain was 10 out of 10 in severity, episodic, localized in the rectum, aggravated by defecation, and relieved by bowel rest. The pain was associated with bloody bowel movements (hematochezia). These were described as stool coated with blood. He had 2 similar episodes, 2 months prior to hospital admission. He was evaluated at an outside facility, diagnosed with hemorrhoids, and treated with suppositories. No other significant findings on review of systems.

With respect to social history, the patient was last sexually active with a male partner 1 year prior to admission. At that time, he was tested

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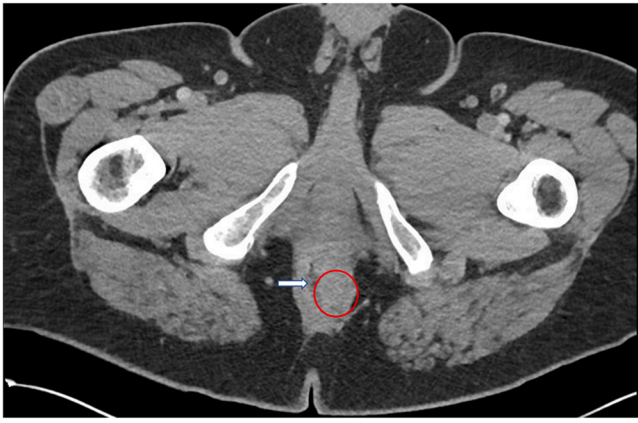


Fig. 1. : Contrast-enhanced computerized tomography (CT) of the abdomen and pelvis showing irregular thickening of the rectal wall (red circle). Note the reduction of the rectum lumen caused by it (white arrow).

for sexually transmitted infections (STI) including HIV, and this was non-reactive.

On the initial exam, the patient was hemodynamically stable and afebrile. On digital rectal examination, he had skin tags, no visible perianal abscesses or lesions, minimal non-bloody stool in the rectum. No palpable masses. His genital exam was normal.

On initial workup, basic metabolic panel were normal, fecal occult blood was negative. Complete blood count revealed leukocyte count of 8000 cells/uL, hemoglobin 13.7 g/dl, hematocrit 41.3 % and platelets of 333,000/uL. An HIV antigen and antibody screen test was reactive. HIV viral load was 276,000 copies/ml and CD4 count was 8 cells/uL. Rectal gonorrhea screen and hepatitis C screens were also positive. Contrast-enhanced computerized tomography (CT) of the abdomen and pelvis

showed irregular thickening of the rectal wall interpreted as proctitis and possible malignancy (Fig. 1).

Subsequently, a colorectal surgeon performed a sigmoidoscopy, which revealed a circumferential necrotic lesion with gross appearance of malignancy. Biopsy of the lesion showed an ulcer mixed with inflammation, high grade squamous intraepithelial lesion, and viral cytopathic effect compatible with CMV (Fig. 2: A and B).

Upon further testing CMV DNA level was 25,737 IU/ml. The patient was started on intravenous ganciclovir. CMV DNA levels were repeated after 5 days with an improvement in viral load to 4795 IU/ml. Ganciclovir was replaced with oral valganciclovir. In addition to CMV viremia, the patient was treated for his other underlying sexual transmitted infections (STI's) and started on appropriate antibiotics for prophylaxis against opportunistic infections. ART was started after discharge on follow up with the local health department. 6 Weeks after initiation of ART, HIV viral load was 79 copies/ml and CD4 count improved to 178 cells/uL.

Discussion

The clinical spectrum of CMV infection ranges from asymptomatic to severe life/vision-threatening disease. Most patients with CMV infection are asymptomatic. Severe CMV infection is rare among immunocompetent individuals [3]. The most common presentation of severe CMV infection is retinitis accounting for up to 85% of all CMV end organ disease. Prior to widespread use of ART, CMV infection was a fearsome complication of HIV infection and AIDS. However, the incidence of CMV infection has decreased since the widespread use of ART [4]. Other common organ systems affected include Gastrointestinal, Neurologic, Pulmonary and Cardiac. Tissue invasive gastrointestinal CMV (TI-GI CMV) is defined as CMV with symptoms localized to the gastro-intestinal tract [5]. The most common gastrointestinal and extraocular presentation of CMV is colitis, constituting about 95 % of all TI-GI CMV [6].

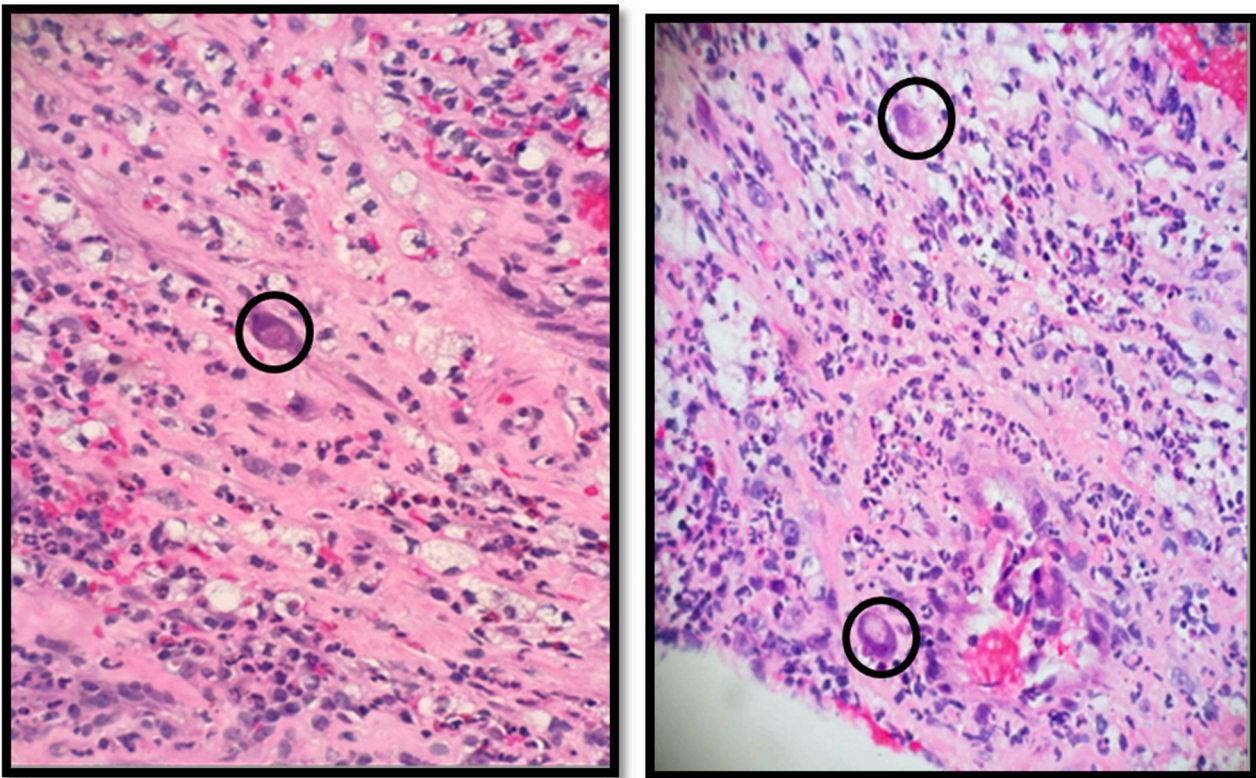


Fig. 2. A and B: hematoxylin eosin staining of biopsy tissue shows CMV cytopathic effect, with large cell with "owl eyes" inclusion body within the nucleus (black circles).

Typical presenting symptoms are diarrhea, abdominal pain, and low-grade fever [7].

Our patient presented with painful and bloody bowel movements. At the time, our initial working differentials included proctocolitis, perirectal abscess and colorectal malignancy. Interestingly, what appeared to be a necrotic colorectal mass on exam under anesthesia, when biopsied, was consistent with CMV cytopathic effect. Cytomegalic owl eye inclusion bodies on histopathology are pathognomonic for CMV infection [8]. Additional lab work made note of significant CMV viremia and previously undiagnosed AIDS. Fortunately, our patient did not have any visual symptoms. Serious CMV infections are mostly seen in patients with a CD4 count less than 100 cells/mm³. Our patient had a CD4 count far below this level, which could have predisposed him to CMV proctitis. Although our patient's history remained consistent across providers, we suspect recall bias surrounding his self-reported sexual activity and HIV testing. We postulate that the patient had been living with HIV for longer than 1 year owing to the significantly reduced CD4 counts. Historically it was reported that patients with CMV proctitis can present with rectal ulcers [9]. Upon literature review several case reports make mention of CMV colitis mimicking colorectal malignancy [10–12].

Treatment of CMV colitis is similar to the treatment of CMV retinitis. Ideally patients with CMV colitis should be given induction treatment for 3–6 weeks. Drug of choice is ganciclovir given intravenously, however the alternative agent foscarnet is less preferred due to its side effect profile [13]. Chronic maintenance therapy is not typically indicated in patients with CMV colitis unless the patient has concurrent retinal involvement or has failed therapy [7]. In some situations, it is recommended that viral load is repeated weekly to help assess response to therapy [14]. Which was the case with our patient, who responded well to intravenous ganciclovir followed by oral valganciclovir.

Conclusion

Severe CMV infection in patients living with HIV/AIDS commonly involves the retina. Gastrointestinal involvement is rare and commonly presents with diarrhea. However, our patient presented with complaints of pain with defecation and bloody bowel movements. Upon direct examination under anesthesia, he was diagnosed with a necrotic rectal mass suspicious for a malignancy. To our surprise the patient's biopsy was significant for CMV infection and not malignancy. Proctitis is a rare and unusual presentation of tissue invasive gastrointestinal CMV, which can present as a rectal mass or lesion. As such, clinicians should be aware of this rare presentation of systemic CMV infection.

Consent statement

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Conflict of interest

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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