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CASE REPORT

CMV Colitis Presenting as Neoplastic Lesions with Life-Threatening Bleeding in an Immunocompetent Patient

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Abstract

An elderly woman with multiple medical problems developed cytomegalovirus (CMV) colitis following a prolonged hospitalization. She presented life–threatening colonic bleeding mimicking a neoplastic process while the final diagnosis was CMV colitis. This is an uncommon presentation of CMV colitis in an immunocompetent patient needing a high index of suspicion to proceed early with proper diagnosis and therapy.

Keywords: CMV colitis; Immunocompetent; Patient

Introduction

CMV colitis has been described commonly in immunosuppressed individuals, including HIV positive and post-transplant patients and those on long term immunosuppressive therapy. However, presentation in immunocompetent patients is uncommon with a predilection to occur after the age of 70.[1] The following case reports is an unusual presentation and a life-threatening colonic bleeding with provisional diagnosis of a colonic neoplasm. A short discussion will follow focusing on CMV colitis, its different presentations, diagnosis and therapy.

Case Report

A 72 years old woman with a medical history of ischemic heart disease, previous CABG, long standing hypertension, diabetes mellitus, old cerebrovascular accident and hyperlipidaemia was admitted to orthopedic ward in October 7, 2010 after she sustained a left femur neck fracture. She was operated for left hip replacement. She had a stormy post-operative course as she developed pneumonia and transient left ventricular failure. After a week, she was transferred to Amiri Hospital because of suspicion to pulmonary embolism. A ventilation perfusion scan and CT-angio were undertaken that were negative for pulmonary embolism. Meanwhile, she became medically stable off antibiotics on her regular antihypertensive and ischemic medications. After 3 days of transfer, she developed bleeding per rectum which required transfusion of 2 units of packed RBC. Colonoscopy was performed revealing a circumferential ulcerated neoplasm of ascending colon with bleeding and multiple polyps on the distal sigmoid at 20 cm from anal verge and biopsy was taken from suspected lesions (Figure 1). After 12 hours from the colonoscopy procedure, she developed intractable bleeding that necessitated urgent surgical intervention. A laparatomy was carried out. She was bleeding heavily from the ascending colon which grossly showed diffuse ulceration and pseudopolyps. A right hemicolectmy was done. She required a total of 4 units of packed RBC. She had a none-eventful postoperative recovery. The biopsy report of the colonoscopy procedure was received the next day which showed invasive CMV colitis with inclusion bodies and picture of acute on top of chronic ischemia (Figure 2). Histopathology of ascending colon revealed granulation tissue with ulcer slough and classic features of CMV infection including basophilic intranuclear inclusions surrounded by a clear Halo (owl's eye effect) (Figure 3). The picture was CMV infection superimposed on chronic colonic ischemia. Serology for HIV1 and HIV2 was negative.

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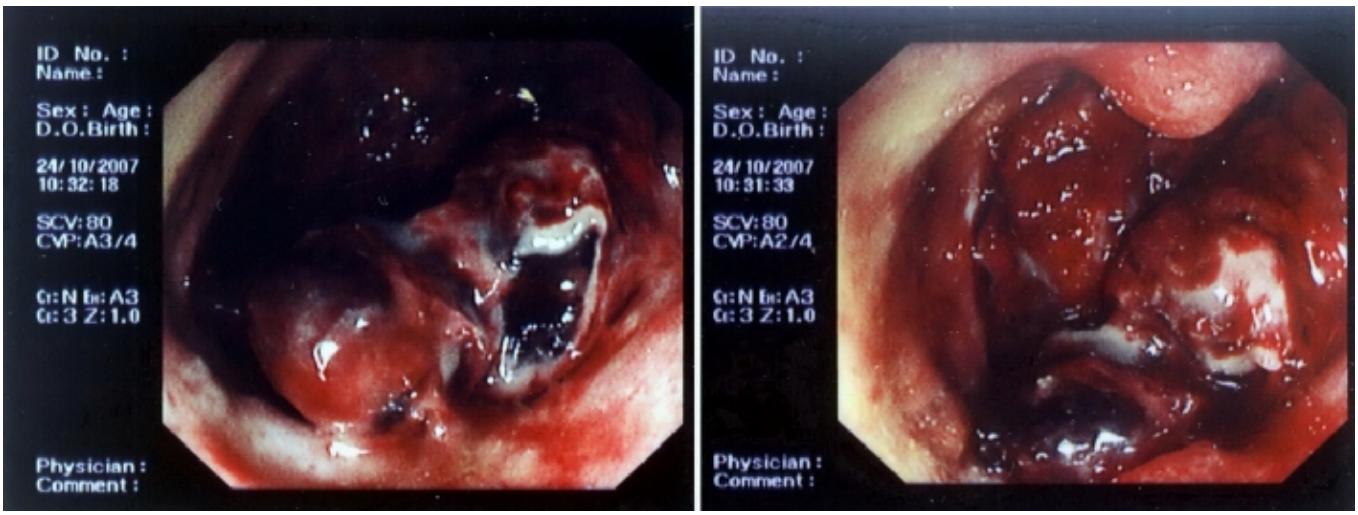

Fig. 1: Suspected ulcerated neoplasm of the ascending colon.

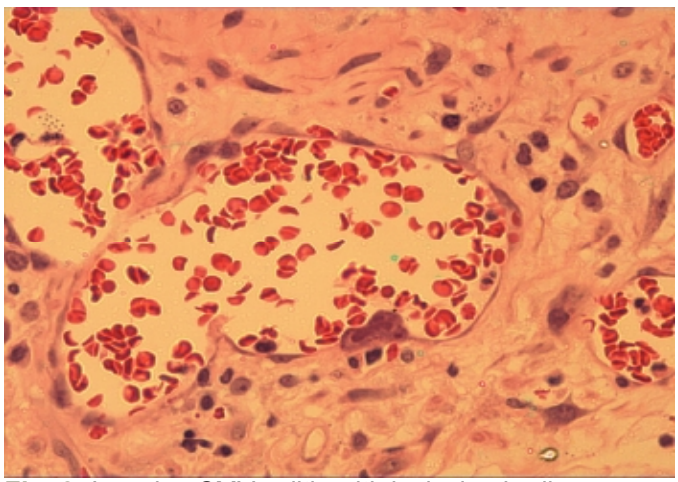

Fig. 2: Invasive CMV colitis with inclusion bodies.

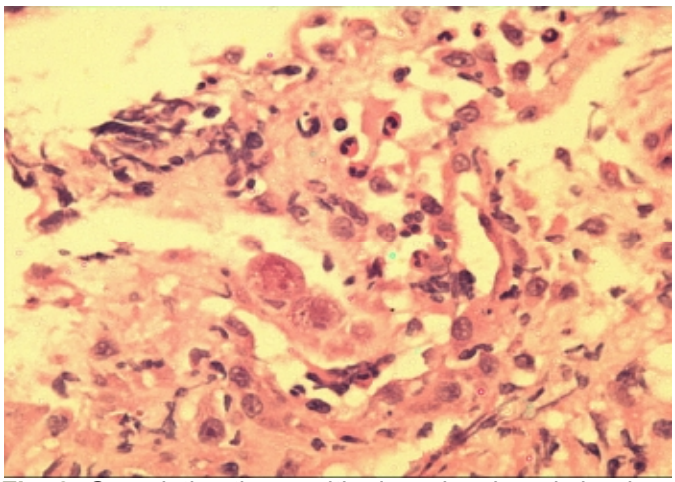

Fig. 3: Granulation tissue with ulcer slough and classic features of CMV colitis

Serology for CMV DNA was not detected by conventional PCR. She was treated with intravenous ganciclovir (5 mg/kg) twice a day for a total of 3 weeks followed by an additional one week of oral valganciclovir (900 mg) once daily. She had a complete remission with no more bleeding episodes. She was resumed on antiplatelet therapy (aspirin) and remained asymptomatic.

Discussion

CMV is a double stranded DNA virus that belongs to the *Herpesviridae* family. It has the ability to produce a latent infection. About 40-100% of the world's adults exhibit evidence of seroconversion. However, under most circumstances, symptoms are absent or self-limited.[2] Infection of the gastrointestinal tract was described early in 1960s. It is well-recognized to cause an invasive disease in immunocompromised patients including post-transplant, HIV positive patients and those on long term corticosteroid therapy.[1]

It has diverse gastrointestinal presentations but the commonest is involvement of the colon followed by the stomach and then the esophagus.[3] There is no age predilection in immunosuppressed patients. However, CMV colitis is uncommon in immunocompetent patients. Around 44 cases have been reported that tend to occur in elderly population, above the age of 70 years who had hospitalization for various acute conditions, have multiple medical problems or have been malnourished.[1,2] In one series, the commonest comor-

bidities were chronic renal failure and diabetes mellitus. In 33% of patients, it was associated with hospitalization.[4] In another series of 10 patients, the mean age was 70 years, 5 of whom had hypertension, diabetes mellitus and ischemic heart disease. The rests had acute hospitalization for diabetic ketoacidosis, cholangitis and *Shigella* dysentery.[5] The presentation is none specific (fever, diarrhea, bleeding per rectum, abdominal pain). It can be mis- diagnosed as *Clostridium difficile* colitis, neoplasm, gastroenteritis and ischemic colitis. A high index of suspicion has to be maintained; otherwise the diagnosis can be delayed if the proper diagnostic studies are not carried out early.[3] The optimal diagnostic procedure is made by endoscopy (sigmoidoscopy or colonoscopy) with biopsy for definite histopathological diagnosis.

Visible ulcerations or erosions are the commonest gross findings. Other gross descriptions include mucosal erythema, polypoid lesions, pseudomembranes and mucosal lesions suggestive of neoplasm.[1,6] Deep biopsy specimens are usually preferred. The use of immunohistochemical stains enhances the sensitivity of routine histopathological studies. Polymerase chain reaction detection is not yet clear. Diagnostic features include giant cells with cytomegaly and large ovoid or polymorphic nuclei containing basophilic inclusions (owl's eye, halo rim). Other associated descriptions may include pictures of acute and chronic inflammatory changes resembling ischemic or vasculitic changes.[1,2] Our patient had already a damaged colonic mucosa as evidenced by underlying features of chronic ischemia most probably due to diffuse atherosclerotic processes because of her co-morbid conditions. This could be the predisposing factor for development of CMVcolitis in otherwise immunocompetent patient. This hypothesis had been discussed in the literature as a possible factor in the development of CMV colitis as evidenced by the frequent reports of CMV colitis in patients with ulcerative colitis where mucosal damage in addition to corticosteroids could be contributing factors.[7,8] The case also reported an unusual presentation mimicking colon carcinoma by gross endoscopic appearance. By reviewing literature, there was a single identical case report in an immunocompetent patient.[6] Other diagnostic tests such as antibody tests, polymerase chain reaction or studies of serum yielded less diagnostic information. So HIV co-infection should be excluded. Treatment in elderly immunocompetent patients with established diagnosis of CMV colitis is antiviral drugs. Cases of spontaneous resolution have been reported but fatal outcome has also been noticed. Clinical evidences recommend antiviral drugs for the most benefit especially for those with other medical problems or complicated hospital stays.[4]

Ganciclovir is the drug of choice while the duration of treatment is variable depending on the clinical setting and the assessment of the clinician. The induction dose is 5 mg/kg twice a day for 14-21 days. An additional one week of maintenance dose can be administered, an oral preparation can be used which is valgancyclovir at a dose of 900 mg/day. In resistant cases, foscarnet can be used, another effective antiviral drug.[1,2] The presented patient showed a good clinical response on antiviral drugs and was able to tolerate well antiplatelet therapy with no more complications.

CMV colitis is uncommon but not unusual to occur in immunocompetent population, especially in elderly with co morbid conditions. It can have misleading presentations; therefore, a high index of suspension through proceeding early with diagnostic endoscopic procedures can lead to early institution of therapy and a better prognosis. The theory of mucosal damage from whatever underlying medical conditions are as predisposing factors to acquire the CMV infection needs to be more explored as it may be important in predicting outcome and directing management.

Conflict of interest: None declared.

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