

Case Report

Cytomegalovirus colitis in an immunocompetent elderly man

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Cytomegalovirus colitis is uncommon in immunocompetent hosts. Thus, a case of bloody diarrhoea and weight loss in an immunocompetent elderly man is reported. Cytomegalovirus colitis was diagnosed by identifying inclusion bodies with positive immunohistochemistry for cytomegalovirus in the histological specimens obtained by colonoscopy. The patient responded to gancyclovir treatment. We conclude that cytomegalovirus colitis should be considered in elderly immunocompetent patients presenting with bloody diarrhoea.

Keywords: Cytomegalovirus, colitis, elderly, immunocompetent.

INTRODUCTION

Cytomegalovirus (CMV) is a well-recognised pathogen, with 40-100% of the general population showing positive serology (de la Hoz et al., 2002; Friel, 2012). Primary infection is usually asymptomatic in the normal host but can produce a syndrome similar to infectious mononucleosis (Sissions et al., 2002; Friel, 2012). CMV colitis is more commonly seen in the immunosuppressed, where it usually represents primary infection or reactivation of a latent infection. It is rarely seen reported in immunocompetent subjects. This report describes a case of CMV colitis in an elderly man with no apparent cause for immunosuppression.

Case Report

A 79-year-old Somali man was admitted through the emergency department with diffuse abdominal pain and recurrent vomiting of one week duration. He gave history of bloody diarrhoea, loss of weight, anorexia and fever of 2 months' duration. He was known to be diabetic and hypertensive, controlled by medications. On clinical examination, no abnormality was detected other than pallor. Investigations revealed a leucocytosis of $30.5 \times 10^9/L$ (normal = $3.5-9.5 \times 10^9/L$) and haemoglobin of 6.4g% (microcytic hypochromic picture). Renal, liver function tests and blood sugars were within normal

ranges. Stool analysis for ova and parasites and stool culture for bacteria and viruses were negative. Carcinoembryonic antigen level was not elevated. Human immunodeficiency virus (HIV) serology was negative. Computerized tomography of the abdomen and pelvis demonstrated wall thickening of the descending colon. Colonoscopy revealed a 50-cm-long ulcerating lesion covered with exudative material with inflamed margins at the rectosigmoid area (figure 1). The rest of the colon examination was unremarkable.

Mucosal biopsies showed ulcer sloughs with granulation tissue that contained enlarged atypical cells exhibiting large basophilic nuclear inclusion bodies (figure 2). Immunohistochemistry staining was positive for CMV (figure 3).

Anti-CMV immunoglobulin G (IgG) antibody titre was positive, while IgM antibody titre was negative in the peripheral blood samples. Polymerase chain reaction (PCR) for quantitative DNA analysis was 824 copies per ml (N = 0 - 600). The patient received two units of blood transfusion and gancyclovir intravenously for 1 week. He improved dramatically and the treatment was changed to oral for another 5 weeks. Follow-up colonoscopy showed improvement and the histologies of mucosal biopsies were negative for CMV viral infection. He was followed up for 1 year after treatment during which he remained asymptomatic.

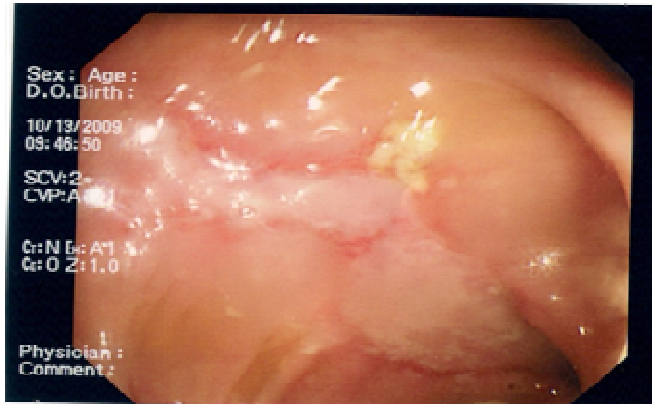


Figure 1. Large ulcerating lesion at the rectosigmoid area covered with exudative material with inflamed margins as seen on colonoscopy.

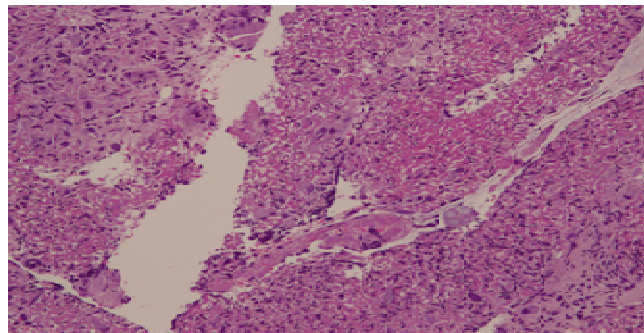


Figure 2. Enlarged atypical cells exhibiting large basophilic nuclear inclusion bodies in mucosal biopsies of the lesion.

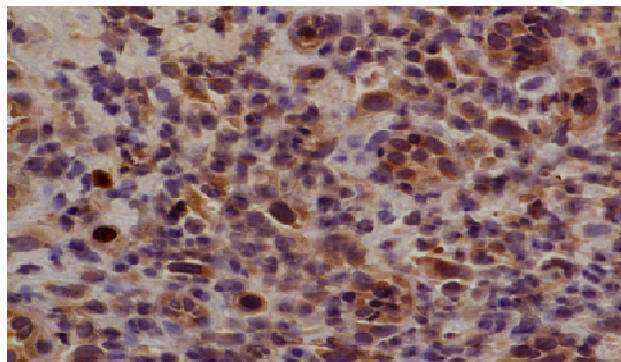


Figure 3. Positive immunohistochemistry staining for CMV in mucosal biopsies of the lesion.

DISCUSSION

CMV colitis usually affects immunosuppressed patients including those with congenital or acquired immunodeficiency, organ transplant, cancers and patients on immunosuppressive therapy. Although clini-

cally significant CMV infections are uncommon in immunocompetent individuals, still, cases are not as rare as thought previously. CMV colitis is the most common gastrointestinal manifestation of CMV disease in immunocompetent individuals (Rafailidis et al., 2008).

The symptoms observed are fever, abdominal pain, anorexia, vomiting, weight loss, watery or bloody diarrhoea and haematochezia (Rafailidis et al., 2008; Klauber et al., 1998).

Only few cases of CMV colitis in immunocompetent individuals have been described in the literature (Rafailidis et al., 2008; Galiatsatos et al., 2005) and most were older than 55 years, probably reflecting a weakened immune system as a consequence of ageing (Galiatsatos et al., 2005).

We presume that age is the main risk factor in our patient to acquire CMV disease as immunosuppressive conditions, including colon cancer and internal malignancies, were excluded by proper investigations.

Although the patient was diabetic and it is known that diabetes mellitus impairs the immune system, which leads to an increased incidence to develop particular infections such as bacterial, mycobacterial and fungal infections, yet it is not recognized that it may increase the incidence of viral infections, specifically CMV infection (Joshi et al., 1999; Peleg et al., 2007). Furthermore, his blood sugar levels were controlled and there is evidence to suggest that improving glycaemic control improves the immune function (Joshi et al., 1999).

The most common feature in CMV colitis on colonoscopy is erosive colitis with multiple ulcers. A single ulcer as in our case occurs in about 10% of all cases of CMV colitis (Klauber et al., 1998).

The diagnosis depends on serological and histological tests, but tissue biopsy remains the gold standard test that shows characteristic intracellular inclusion bodies.

The benefit of antiviral therapy is not clear in the case of immunocompetent patients with CMV colitis, as some improve due to the self-limiting course of the disease. Therefore, giving treatment should be weighed against the potential toxicity of therapy (Rafailidis et al., 2008). Physicians tend to prescribe treatment for more severe cases, especially the elderly as it is found that advanced age, male gender and the presence of immunomodulatory co-morbidities increase the risk of mortality (Galiatsatos et al., 2005).

In conclusion, CMV colitis, although uncommon in immunocompetent patients, should be considered in elderly people with diarrhoea or bloody stools after excluding other more common conditions. Colonoscopy and tissue biopsy are essential for the diagnosis.

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REFERENCES

- de la Hoz RE, Stephens G, Sherlock C (2002). Diagnosis and treatment approaches to CMV infections in adult patients. *J. Clin. Virol.* 25:S1-S12.
- Friel TJ (2012). Epidemiology, clinical manifestations, and treatments of cytomegalovirus infection in immunocompetent hosts. In: UpToDate [online]. Available at: www.uptodate.com/contents/epidemiology-clinical-manifestations-and-treatment-of-cytomegalovirus-infection-in-immunocompetent-hosts.
- Galiatsatos P, Shrier I, Lamoureux E, Szilagyi A (2005). Meta-analysis of outcome of cytomegalovirus colitis in immunocompetent hosts. *Dig. Dis. Sci.* 50:609-616.
- Joshi N, Caputo GM, Weitekamp MR, Karchmer AW (1999). Infections in Patients with Diabetes Mellitus. *N Engl. J. Med.* 341:1906-1912.
- Klauber E, Briski LE, Khatib R (1998). Cytomegalovirus colitis in the immunocompetent host: an overview. *Scand. J. Infect. Dis.* 30:559-564.
- Peleg AY, Weerathna T, McCarthy JS, Davis TM (2007). Common infections in diabetes: pathogenesis, management and relationship to glycaemic control. *Diabetes Metab. Res. Rev.* 23:3-13.
- Rafailidis PI, Mourtzoukou EG, Varbobitis IC, Falagas ME (2008). Severe cytomegalovirus infection in apparently immunocompetent patients: a systematic review. *Virol. J.* 5:47.
- Sissions JGP, Carmichael AJ (2002). Clinical aspects and management of cytomegalovirus infection. *J. infect.* 44:78-83.