

CASE REPORT

Cytomegalovirus-associated colitis causing diarrhea in an immunocompetent patient

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Abstract

Cytomegalovirus (CMV) colitis rarely occurs in immunocompetent patients. We report a case of disabling and life threatening diarrhea in an immunocompetent elderly woman due to CMV colitis. The diagnosis of CMV was based on histological examination of tissues biopsied at colonoscopy, positive CMV antigen and high CMV-IgM titer in peripheral blood samples and a good response to systemic gancyclovir treatment. We conclude that CMV should be considered in the differential diagnosis of colitis in elderly immunocompetent patients.

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Key words: Cytomegalovirus; Colitis; Immunocompetent; Diarrhea; Gancyclovir

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INTRODUCTION

The seroprevalence of cytomegalovirus (CMV) in the general population is high (40%-100%)^[1]. Most CMV infections are acquired in the perinatal period, infancy or early adulthood^[2]. The majority of primary CMV infections in immunocompetent adults are asymptomatic or associated with mild mononucleosis-like syndrome. To our knowledge, there have been only anecdotal reports of clinically significant CMV gastrointestinal infection in healthy adults. In these cases, CMV disease developed with community acquired, acute primary infection, through blood transfusions and sexual transmission^[3,4].

CASE REPORT

A 76-year-old woman was admitted with a week history of

diffuse abdominal pain and one passing of watery diarrhea a few hours before admission. She had well controlled type 2 diabetes mellitus and hypertension. Twenty years ago, she had undergone a right mastectomy and chemotherapy treatment for breast carcinoma. She had not received chemotherapy for at least 15 years. On admission, her physical examination revealed minimal tenderness in the right abdomen without reboundness. Laboratory investigations showed a leucocytosis of $15 \times 10^9/L$ (normal range, $3.5-9.5 \times 10^9/L$) and mildly elevated liver enzymes of SGOT 75 (normal range, 15-40) IU/L and SGPT 129 (normal range, 15-40) IU/L. Bilirubin levels were normal. HIV serology was negative.

During the initial days of her hospitalization, the diarrhea worsened and was accompanied by bloody and pussy rectal discharge. She had a mild fever of 38°C. Electrolyte disturbances (hypokalemia and hypomagnesemia) were attributed to the diarrhea and were easily corrected. Albumin levels decreased to 2.4 (normal 3.6-5.5) g/L. Stool cultures were negative, and Clostridium Difficile toxin was not detected in three stool samples. Computed tomography of the abdomen demonstrated atherosclerosis of the abdominal aorta and thickening of the sigmoid colon. Colonoscopy revealed several fibrin-coated deep ulcers in the rectum and sigmoid colon. Mucosal biopsy showed acute inflammation, ulceration and signs of regeneration with marked atypia. CMV immunostain was positive in a few cells. Active CMV infection was confirmed by high IgM CMV titer and CMV antigen in peripheral blood samples.

The patient was treated with intravenous gancyclovir for one week and then with oral valgancyclovir for additional five weeks. Her abdominal pain and diarrhea settled within a few days of initial treatment. Her blood studies normalized. The patient remained asymptomatic during 12 mo of follow-up.

DISCUSSION

CMV colitis is associated with constitutional symptoms as well as gastrointestinal symptoms such as diarrhea, hematochezia, tenesmus, urgency and abdominal pain. The disease is usually limited to the left colon, with endoscopic findings indistinguishable from ulcerative colitis and Crohn's disease. Diagnosis requires both serologic and histologic criteria. CMV produces a characteristic cytopathic effect, consisting of a large 25 to 35 μm cell containing a basophilic intranuclear inclusion, which is sometimes surrounded by a clear halo and is frequently

associated with clusters of intracytoplasmatic inclusions^[5]. Immunohistochemistry of the biopsied tissue using monoclonal antibodies and in-situ DNA hybridization enhances the sensitivity of the histopathologic analysis^[6]. Positive IgM titer for CMV, CMV antigen in the blood and positive polymerase chain reaction in blood or urine confirm the diagnosis.

In a meta-analysis of outcome of CMV colitis in immunocompetent hosts (44 cases), the rate of spontaneous remission was 31.8%, but > 50% for patients less than 55 years of age. Death occurred in 31.8% of patients greater than 55 years of age^[7]. The decline in humoral and cellular immunity, and the higher prevalence of co-morbidity in older patients may explain these findings. The highest mortality rates were associated with immune modulating conditions, such as diabetes mellitus, renal failure and malignancies. Young (< 55 years) and otherwise healthy patients usually are able to recover from CMV infection without the need for antiviral therapy. Antiviral therapy with gancyclovir or foscarnet is mandatory for older patients and for patients with immune modulating conditions.

In conclusion, CMV colitis, although rare in immunocompetent patients, should be considered when more common etiologies for severe diarrhea have been

excluded. Timely diagnosis and treatment are essential in order to improve the outcome of elderly patients or patients with serious co-morbidities.

REFERENCES

- 1 **de la Hoz RE**, Stephens G, Sherlock C. Diagnosis and treatment approaches of CMV infections in adult patients. *J Clin Virol* 2002; **25** Suppl 2: S1-12
- 2 **Ho M**. Epidemiology of cytomegalovirus infections. *Rev Infect Dis* 1990; **12** Suppl 7: S701-S710
- 3 **Campbell DA**, Piercey JR, Shnitka TK, Goldsand G, Devine RD, Weinstein WM. Cytomegalovirus-associated gastric ulcer. *Gastroenterology* 1977; **72**: 533-535
- 4 **Villar LA**, Massanari RM, Mitros FA. Cytomegalovirus infection with acute erosive esophagitis. *Am J Med* 1984; **76**: 924-928
- 5 **Hinnant KL**, Rotterdam HZ, Bell ET, Tapper ML. Cytomegalovirus infection of the alimentary tract: a clinicopathological correlation. *Am J Gastroenterol* 1986; **81**: 944-950
- 6 **Robey SS**, Gage WR, Kuhajda FP. Comparison of immunoperoxidase and DNA in situ hybridization techniques in the diagnosis of cytomegalovirus colitis. *Am J Clin Pathol* 1988; **89**: 666-671
- 7 **Galiatsatos P**, Shrier I, Lamoureux E, Szilagyi A. Meta-analysis of outcome of cytomegalovirus colitis in immunocompetent hosts. *Dig Dis Sci* 2005; **50**: 609-616

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