

ILEAL PERFORATION CAUSED BY CYTOMEGALOVIRUS IN IMMUNOCOMPETENT PATIENT - CASE REPORT

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ABSTRACT

To report the case of a cytomegalovirus ileitis complicated with perforation in immunocompetent patient. The information contained in this report were obtained by reviewing the medical record, interview with the patient, photographic record of the diagnostic methods and surgical procedure to which the patient was submitted, and literature review

KEYWORDS: Cytomegalovirus ileitis, diagnostic, immunocompetent patient.

1. INTRODUCTION

Cytomegalovirus (CMV), also known as human herpesvirus type 5 (HHV-5), is a high-prevalence human β -herpesvirus worldwide¹.

Transmission occurs through contact with biological fluids, such as: saliva, semen, vaginal secretion, urine, breast milk, transplacental, blood transfusion or organ transplantation^{1,2}. In most cases the infection is asymptomatic; however, some patients, especially immunosuppressed patients, may have severe clinical signs, such as transplanted, HIV positive, newborn or leukemic patients³.

The interaction between CMV and the host's immune system has very interesting characteristics, especially the escape mechanisms of the immune response, such as latency, reduced expression of some genes and restrictions of the antigenic presentation via MHC I / II^{2,3,4}

The possibility of being transmitted in many ways contributes greatly to the widespread spread of the virus. CMV is one of the main pathogens among immunosuppressed patients and its control is still a challenge for both treatment units and chemotherapy services^{2,4}.

2. CASE REPORT

Male patient, 30 years old, with fever, hyporexia,

low back pain and dry cough for 20 days since hospital admission. He also reported weight loss of 3kg in the period. Treatment with oseltamivir, azithromycin and prednisone was carried out for 5 days, with absence of fever for 2 days. It worsened with the return of the symptoms, leading the patient to investigation.

During the interview, the patient reported sporadic diarrhea since adolescence, without blood or mucus. Regarding his personal history, he denied illness, use of medications, allergies or previous surgeries. He reported smoking 10 cigarettes/day and social drinking. Regarding family history, mother and uncle had a history of nephritis.

At admission, the patient was feverish, with no specific alterations in the physical examination. Laboratory tests evidenced blood count with 12140 leukocytes, with 30% of neutrophils and 57% of lymphocytes, without lymphocytic atypia. Hepatic enzymes were discretely increased and there were no alterations in the radiographs of chest and lumbosacral spine. No infectious agents have been isolated in blood and urine cultures.

On the first day of hospitalization, serology for virus were requested, with negative results for HIV, hepatitis B and C, negative IgM for toxoplasmosis and Epstein Barr Virus (EBV), but positive IgM for cytomegalovirus (CMV). A new blood count was requested and showed normal leucometry, with 25% of neutrophils, 59% of lymphocytes, with 10% of atypical lymphocytes.

During the hospitalization, the patient had mild abdominal pain and episode of non-bloody liquid evacuation. Due to the worsening of the pain, he was submitted to the routine protocol of radiology for acute abdominal pain and new laboratory tests, which evidenced increased C-reactive protein and leukocytosis with neutrophilia, without other alterations. In addition, a Computed Tomography (CT) of the abdomen revealed multiple foci of pneumoperitoneum, dense liquid in the abdominal cavity, distal and terminal ileum with diffusely thickened walls and increased number of lymph nodes (Figure 1).



Figure 1. Computed Tomography of the abdomen: distal ileum with thickening of the wall and increased number of lymph nodes.

The doctors decided to submit the patient to exploratory laparotomy, observing the following alterations: purulent fluid in the cavity, small bowel loops adhered to the hypogastrium with extensive obstruction and purulent secretion, perforation at 30 cm from the ileocecal valve, edema and thickening of the loops (Figure 2). Enterectomy was performed at 20 cm from the ileocecal valve, with resection of 40 cm of small bowel and enteroanastomosis.

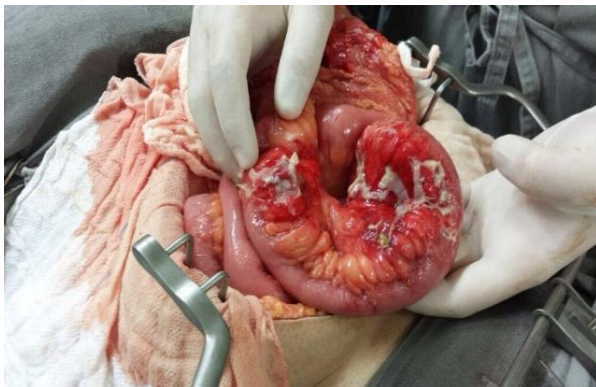


Figure 2. Exploratory laparotomy: ileitis with purulent secretion and perforation at 30 cm from the ileocecal valve.

Due to suspected intestinal perforation secondary to CMV enteritis, IgG and CMV polymerase chain reaction (PCR) were required and resulted both positive, with PCR showing more than 3153 copies of CMV/mL of plasma. The anatomopathological examination of the surgical specimen demonstrated ulcerative enteritis of cytomegalic viral etiology, with positive immunohistochemistry for CMV.

The patient remained in the ICU during the first four postoperative days, with improvement of symptoms, laboratory tests results and abdominal drain debit with small amount of serosanguinolent liquid. After this period, he had vespertine febrile episodes associated with mild periumbilical pain, with no other alterations, being transferred to the ward.

Due to the symptoms, ganciclovir was prescribed

and laboratory tests were requested, with no evidence of infection. The patient had a good outcome, being discharged on the 20th postoperative day. During the outpatient follow-up, immunodeficiency was excluded and colonoscopy was performed, which revealed left colon with active chronic colitis, containing cryptic microabscesses and discrete ileitis. The hypothesis of Crohn's disease was raised, which was not confirmed by anatomopathological examination.

3. DISCUSSION

Cytomegalovirus (CMV) is a DNA virus of the herpesviridae family that can manifest in primary infection, reactivation of latent infection, or reinfection. Reactivation is triggered mainly due to inflammation or immunosuppression, which can lead to severe disease with increased morbidity and mortality, especially in newborns and immunosuppressed patients^{1,5}.

CMV infection in immunocompetent individuals is generally asymptomatic or can present as generalized mononucleosis-like syndrome^{5,6}. The most common symptoms are: fever (100%), asthenia (23%), headache (22%), lymphadenopathy (12.3%) and cough (1.4%)^{7,8,9}. Occasionally, it can manifest in specific organs, and the gastrointestinal tract (GIT) is the most frequent. A meta-analysis performed by Rafailidis *et al*, 2008⁶ showed the following order of affection: TGI (primary colitis), central nervous system and hematological abnormalities.

In the review conducted by Karigane *et al.*¹⁰ between 1990 and 2012, 32 cases of immunocompetent patients with CMV enteritis/colitis were identified. The prevalence of symptoms was as following: diarrhea (76%), abdominal pain (52%), hematochezia, melena and bloody stool (27%), and fever (18%). In laboratory tests, it is described by lymphocytosis higher than 50% and presence of more than 10% of atypical lymphocytes, which can remain for several months after the resolution of symptoms¹⁰. Endoscopic findings were single or multiple ulceration, edema and mucosal inflammation. The most common finding on computed tomography of abdomen was thickening of the wall, and the least common findings were dilatation and stenosis⁹. The histopathological presentations described were ulcerations and enteritis with ischemia⁴.

The diagnosis of CMV infection is defined as isolation of CMV by culture or isolation of protein (pp65) by antigenemia or PCR^{11,12}. Lancini *et al*, 2014¹³ emphasized that the diagnostic difficulty of CMV colitis in immunocompetent patients consists of three factors: low incidence of severe disease in these individuals, diverse clinical manifestations, similarity with other diseases causing confusion and delayed diagnosis¹². In addition, CMV PCR alone is insufficient for the diagnosis of organic disease. For this reason, there is a need for histological evaluation with immunohistochemistry for CMV to confirm the disease^{4,11,13}.

The treatment of the infection in immunocompetent individuals is not well established in the literature due to the low incidence of severe disease, high rate of spontaneous resolution, and lack of studies regarding the use of antivirals in these individuals^{9,11}. However, patients with specific complications caused by CMV had favorable results with anti-CMV agents (ganciclovir, valganciclovir and foscarnet)^{14,15}. Due to the spontaneous resolution of the condition in some patients, there are doubts about the use of antivirals because of the side effects of these medications. Thus, the benefit-risk between the aggressiveness of the disease and the toxicity of the drugs should be taken into account. Some patients, in addition to treatment with antiviral drugs, may require surgical treatment¹⁴.

4. CONCLUSION

It is concluded, therefore, that CMV enteritis in immunocompetent patients is a rare and undiagnosed entity, but it should be suspected as etiology in patients with intestinal perforation, and immunohistochemistry is an important tool for the definition of diagnosis. Antiviral treatment is reserved for patients with organ-specific complications, and surgical treatment, in some cases, is necessary.

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