Enterocolic fistula: A rare presentation of cytomegalovirus infection

Richdeep S Gill MD1, Geoffrey Taylor MD FRCP FACP2, Robert M Penner MD FRCPC2, Sarvesh Logsetty MD3

In the present report, the first reported case of cytomegalovirus (CMV)-associated enterocolic fistula in an HIV/AIDS patient is described. CMV colitis is the second most common presentation of CMV infection in immunocompromised patients. CMV-associated enteric fistulae are an exceedingly rare complication, with only four previous cases described: a gastrocolic, an enterocutaneous, a rectovaginal and a colocolutaneous fistula. Management of these patients demonstrates the importance of treating the precipitating viral infection before considering surgical intervention of the enterocolic fistula.

Key Words: AIDS; CMV colitis; CMV infection; Fistula
decision was made with the patient to continue conservative management.

Following completion of induction therapy with intravenous ganciclovir (21 days), maintenance therapy was continued with oral valganciclovir (900 mg daily). Antiretroviral therapy was introduced (initially lopinavir/ritonavir, lamivudine and tenofovir, later changed to atazanavir, ritonavir and emtricitabine/tenofovir). Over the next eight years, antiretroviral treatment was maintained. Plasma HIV RNA levels fell from a baseline of 730,000 copies/mL to undetectable levels (<50 copies/mL) within six months and was maintained at that level on serial monitoring. The CD4+ T lymphocyte cell count progressively rose from 10×10^6/L and 2% of total lymphocytes at presentation to 450×10^6/L and 27% of total lymphocytes after four years of antiretroviral therapy. Maintenance valganciclovir was discontinued after two years of antiretroviral therapy when the CD4+ count was consistently higher than 100×10^6/L. No clinical evidence of relapse of colitis occurred following discontinuation of valganciclovir. Diarrhea continued to be controlled with intermittent use of antimotility therapy (Imodium, Johnson & Johnson Inc, USA) and the patient averaged six semiformal bowel movements per day with little or no need for nocturnal bowel movements. After one year of antiretroviral and anti-CMV therapy, the patient’s baseline weight of 59 kg had risen to 70 kg and subsequently fluctuated between 67 kg (body mass index 24 kg/m^2) and 88 kg.

**DISCUSSION**

CMV is a common herpes virus, for which >50% of the world’s population is seropositive (11). It is also the most common opportunistic viral infection in immunocompromised patients (3). This includes patients with HIV/AIDS, organ transplantation and those receiving chemotherapy. The two most common presentations of CMV retinitis and colitis (3). Gastrointestinal manifestations of CMV colitis can present with abdominal pain, ulceration, bleeding and watery diarrhea (12). A CMV lesion can also result in perforating ileocolitis, hemorrhagic proctocolitis and toxic megacolon requiring emergent surgical intervention (13,14).

CMV colitis can be visualized by colonoscopy; however, diagnosis of CMV is made histologically (15,16). The presence of giant cells with intranuclear and intracytoplasmic inclusions provides confirmation of colonic suspicion of CMV. The CMV inclusions are deemed significant when they are associated with mucosal ulcers, necrotic foci and acute inflammatory infiltrates (15). As with the present case, biopsies demonstrated intranuclear inclusions at the site of the enterocolic fistula. Before diagnosis of CMV-associated fistula, more common etiologies such as lymphoma and tuberculosis were investigated and ruled out. No confirmatory endoscopic or histological evidence of either was present.

The present case is the first report of enterocolic fistula resulting from CMV colonic infection in an immunocompromised patient. The rectosigmoid region involved is the most common site for CMV colitis (17); however, only an enterocutaneous fistula and rectovaginal fistula near this site had been previously reported (3,7). The present patient’s noncompliance with ganciclovir treatment over the course of his illness may have been contributory. We speculate that partial healing with relapsing active disease may have predisposed him to fistula formation. Based on the present case, we state that it is important to recognize the possibility of enteric fistulae complicating CMV colitis. We conversely recognize that enteric fistula presenting within an immunocompromised host may be CMV-related. This appreciation enables appropriate treatment of the viral infection before considering surgical management of CMV-associated fistula.

**REFERENCES**
