Cytomegalovirus infection in a patient with ulcerative colitis: colonoscopic findings

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Cytomegalovirus (CMV) infection in humans does not usually cause symptoms. However, the infection becomes overt when patients are infected by human immunodeficiency virus or treated with immunosuppressive agents. An association between CMV and ulcerative colitis (UC) was initially reported 30 years ago. Since then, however, the significance of CMV infection in UC has not been elucidated precisely. There have been 2 contradictory reports of CMV infection in UC. In one the infection was an exacerbating factor and in the other it was an incidental finding. This is a report of a case of UC in which CMV infection was confirmed during corticosteroid therapy.

CASE REPORT

A 37-year-old Japanese man was admitted because of diarrhea and hematochezia that had persisted for the preceding 6 months. Laboratory data revealed mild anemia, leukocytosis, accelerated erythrocyte sedimentation rate, and positive C-reactive protein. A fecal occult blood test was positive, but the stool was negative for pathogenic microorganisms. Colonoscopy revealed friable mucosa with granularity and mucinous exudate throughout the colon (Fig. 1). Histologic examination of multiple biopsy specimens obtained from the affected colorectum disclosed a marked inflammatory infiltrate and crypt abscess. Based on these clinical and endoscopic findings, a diagnosis was made of UC involving the entire colon. Because oral administration of sulfasalazine (4 g/day) for 1 week was ineffective, the patient was subsequently treated with a corticosteroid (prednisolone, 70 mg/day taken orally). Thereafter his symptoms rapidly improved.

Colonoscopy 2 weeks later revealed that the granularity and mucinous exudate had disappeared. However, there were linear ulcers in the transverse colon (Fig. 2A). Biopsy specimens were obtained from the margin of the ulcers and from the intervening mucosa. In all these specimens there were numerous large cells that contained intranuclear inclusion bodies. Immunohistochemical staining revealed that these cells were positive for CMV (Fig. 2B). Immunohistochemistry and review of the biopsy specimens confirmed that there were no such findings for CMV infection at the initial colonoscopy.

Serology for CMV at the time of the second colonoscopy revealed an increased IgG titer for CMV, but the serum was negative for IgM CMV antibody. These histologic and serologic findings indicated that the patient had reactivation of a latent CMV infection. After obtaining informed consent, the patient was followed intensively by colonoscopy.

Because the patient did not manifest any systemic sign of CMV infection he was not treated with any anti-viral agent. The corticosteroid dosage was gradually decreased (10 mg/week). Colonoscopy 2 weeks thereafter revealed ulcer scars in the transverse colon. However, there were no colonoscopic signs of active UC in the surrounding mucosa. Multiple biopsy specimens from the colorectum were negative for inclusion bodies and for active inflammation. Colonoscopy performed 2 weeks later also revealed that the ulcers had remained healed. Treatment with sulfasalazine was continued and during the subsequent 20 months of observation the UC remained inactive.

DISCUSSION

Powell et al. were the first to report an association between CMV infection and UC in 1961. Since that description, 45 cases have been reported of UC complicated by CMV infection in English language publications. However, whether CMV infection exacerbates UC remains a matter of debate. In 8 cases, the infection was an exacerbating factor, whereas in 9 cases the infection was found incidentally during the course of UC. Because UC in our patient was inactive at the time of reactivation of CMV infection and the infection does not seem to...
have affected the clinical course, the CMV was regarded as an incidental finding.

However, it has been demonstrated that CMV causes colitis that is apparently indistinguishable clinically from UC. Thus, a clear distinction between recurrent UC and CMV colitis seems to be difficult in patients with UC. Because Vega et al. recently reported that CMV infection exacerbates abdominal symptoms even in patients in whom the diagnosis of UC is well established, and because approximately two-thirds of the general population is infected by CMV, superinfection with CMV should be seriously considered when patients with UC manifest clinical deterioration.

It is accepted that CMV infection becomes overt under conditions of immunosuppression. In our case, treatment with a corticosteroid seems to have been the major predisposing factor for reactivation of CMV. The small ulcers with clearly demarcated margins were highly suggestive of CMV colitis, because such ulcers had not been identified before corticosteroid treatment. Furthermore, UC in other segments of the colon was inactive colonoscopically. Thus, well-demarcated ulcers may be a sign of CMV infection in patients with UC.

According to Kaufman et al., the frequency of CMV enterocolitis was 4.6% in patients with UC who required colectomy. Although the overall frequency of CMV infection in patients with UC is uncertain, discrete ulcers found during colonoscopy may be a clue to the diagnosis of CMV infection in a patient with UC. The diagnostic accuracy of such colonoscopic findings needs to be confirmed because specific treatment of CMV may be necessary for a certain proportion of subjects.

REFERENCES
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