Treatment failure of fecal microbiota transplant for pseudomembranous colitis due to coexistent cytomegalovirus colitis

Dear Editor,

Fecal microbiota transplant is a highly effective treatment for refractory *Clostridium difficile* infection. Cytomegalovirus (CMV) colitis is often neglected in the patients with diarrhea who are nonimmunocompromised and in intensive care units.

A 63-year-old woman had a past history of bladder transitional cell carcinoma post-transurethral resection of bladder tumor. She was otherwise formerly healthy but had diarrhea for 2 weeks prior to this admission. A stool *C. difficile* toxin B assay was positive. Oral metronidazole was given with partial improvement of diarrhea. However, bloody stool and abdominal distension developed, which were not responsive to subsequent therapy with oral vancomycin. On March 12, 2014, colonoscopy with biopsy demonstrated findings compatible with pseudomembranous colitis. Then, donor feces from her son and husband were transplanted twice via duodenal tubing into the intestine of the patient. Initially, the bloody stool improved. However, abdomen distension remained and an episode of hypercapnic respiratory failure led to conscious disturbance. The patient was intubated and transferred to the intensive care unit. At that time, the result of stool *C. difficile* toxin assay became negative. Kidney, ureter, and bladder radiography revealed distended intestinal loop with much bowel gas, suggesting toxic enterocolitis (Figures 1A and 1B). Polymerase chain reaction (PCR) detected CMV DNA in the patient’s blood samples. CMV immunohistochemical stain on previous colon mucosal biopsy confirmed CMV colitis on March 19, 2014. Ganciclovir (200 mg once daily) was infused intravenously and then the bowel gas was completely resolved 3 days later (Figure 1C). After 2 weeks of intravenous ganciclovir therapy, blood CMV-PCR became negative on April 2, 2014. She was successfully extubated. Oral valganciclovir was given for an additional 2 weeks. On April 18, 2014, the follow-up colonoscopy showed complete mucosal healing of the colitis lesions without scarring. Random biopsies revealed chronic nonspecific colitis without evidence of CMV infection. She was then discharged uneventfully.

CMV infection can occur usually in an immunocompromised patient, but antiviral therapy may be necessary in selected immunocompetent patients with refractory CMV clinical symptoms. Coinfection with cytomegalovirus and *C. difficile* is rarely reported in the literature and, when present, is often a diagnostic challenge and has a high mortality rate. CMV colitis could be concurrent with or subsequent to the treatment for *C. difficile* colitis. As CMV and *C. difficile* colitis have overlapping symptomatology, the identification of individual pathogen as well as effective therapy may be delayed. A definitive diagnosis of CMV colitis depends upon colonoscopic biopsy, especially with immunohistochemical staining. However, noninvasive methods of CMV PCR for blood and/or stool samples are useful to screen the CMV infections.

The current case highlighted a toxic enterocolitis with distended intestinal loop and hypercapnic respiratory failure after therapy with metronidazole, vancomycin, and fecal microbiota transplants for *C. difficile* infection. We suggest blood and/or fecal PCR survey for CMV colitis in a patient with refractory pseudomembranous colitis. Proven CMV colitis and effective antiviral therapy might circumvent unnecessary fecal microbiota transplants.
Ethical approval

The above study has been granted exemption from review by the Institutional Review Board of Chi-Mei Medical Center, Tainan, Taiwan (application no.10402-E06).

Conflicts of interest

We declare no funding and no conflict of interests.

References


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