Endoscopic Appearance of the Colon and Small Intestine of a Patient with Hemorrhagic Enteric Graft-vs.-Host Disease

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Endoscopic appearance of the gastrointestinal tract of a patient with severe hemorrhagic enteric graft-vs.-host disease (GVHD) is presented. A 29-year-old man with chronic myelogenous leukemia suffered from severe enteric GVHD after allogeneic bone marrow transplantation. Endoscopy showed hemorrhagic ulceration of the upper jejunum, terminal ileum, and colon at the onset of melena. Sections of biopsies were compatible with acute GVHD. Repeat endoscopy showed gradual healing of the lesions after steroid pulse and antilymphocyte globulin therapy, but the patient died of cytomegalovirus pneumonitis 14 months later. Autopsy revealed submucosal fibrosis of the small intestine and colon. [Key words: Graft-vs.-host disease; Colitis; Colonoscopy; Chronic myelogenous leukemia]

ENTERIC GRAFT-VS.-HOST disease (GVHD) is not rare and diffuse intestinal ulcerations due to enteric GVHD have been reported. However, erosive or ulcerative lesions are segmental in most cases, and the lesions are not curative in most life-threatening cases. We report a case of severe enteric GVHD with ulceration of the gastrointestinal tract, which improved after therapy for GVHD. Because the endoscopic appearance of hemorrhagic enteric GVHD has not been presented, photographs of the jejunum, terminal ileum, and colon are shown.

Report of a Case

A 29-year-old man with chronic myelogenous leukemia (CML) was admitted to our hospital for bone marrow transplantation on December 3, 1985. He had been diagnosed as having CML in 1981 and had suffered from several episodes of hematemesis due to gastric ulcers. Total gastrectomy was performed in May 1983. Until admission, he had been in a chronic phase and had been given busulfan for more than two years. Bone marrow transplantation was performed on February 7, 1986, after preparation with cyclophosphamide and total body irradiation (12 Gy, lung shielded 8 Gy). He received $1.9 \times 10^8$ marrow cells/kg from his HLA identical sister. Cyclosporin A was used to prevent GVHD. Four weeks after the transplantation, marrow engraftment was documented by karyotypic analysis, but hematologic reconstitution was retarded. Grade I skin GVHD appeared on day 24 and subsided after oral prednisolone administration (1 mg/kg). On day 46, crampy abdominal pain, bloody stool, and fever developed suddenly, after seven days of continual watery diarrhea. Liver dysfunction was also documented. Symptoms continued and the laboratory examination showed marked hypoproteinemia, anemia, and hyperbilirubinemia. Skin biopsy findings were consistent with those of GVHD. Stool cultures were negative for bacteria and virus including cytomegalovirus.

Endoscopy on day 56 revealed multiple ulcers or erosions with massive hemorrhage in the jejunum, terminal ileum, cecum, and colon at the onset of melena. Sections of endoscopic biopsies showed necrosis of epithelial cells and glands and mucosal denudation (Fig. 2). No viral inclusions were seen and no virus was stained with antiviral antibodies including cytomegalovirus, herpesvirus, and adenovirus. Results of blood cultures and stool cultures were negative for viruses, and antiviral antibody titers were not elevated. The diagnosis of Grade IV acute GVHD was made. Because high doses of methylprednisolone were of no benefit, antilymphocyte globulin was started on day 64 and continued for 21 days. After antilymphocyte globulin therapy, melena stopped and laboratory data improved. The patient died of cytomegalovirus pneumonitis on day 428. Autopsy was performed two hours after his death and revealed an increased number of hypersecreting goblet cells with the disappearance of absorptive epithelial cells with lymphocyte infiltration in the specimen of the ileum (Fig. 3).
**Fig. 1.** Multiple erosions or ulcers with massive hemorrhage shown in the sigmoid colon (Fig. 1a and b) on day 56.

**Fig. 2.** In the biopsy specimen from the erosive lesions in the jejunum (Fig. 2a) and sigmoid colon (Fig. 2b) on day 56, epithelial cell necrosis and mucosal denudation were found.

**Fig. 3.** Autopsy revealed an increased number of hypersecreting goblet cells with disappearance of absorptive epithelial cells, with lymphocyte infiltration in the section of the ileum (hematoxylin and eosin). Figure 3b is a magnification of a part of Figure 3a indicated by an arrow.