A Case Report of a "Necrotizing" Entero-Colo-Proctitis in the Adult

KATSUHIRO ENDO, AKIRA TSURUI, HiKARU WATANABE, TSUNEAKI SATO, AKIRA UNOURA, TAKAMASA KAYAMA* and TSUNEO NAMIKIt

Department of Gastroenterology, *Department of Neurosurgery and †Department of Pathology, Sendai National Hospital, Sendai 983

ENDO, K., TSURUI, A., WATANABE, H., SATO, T., UNOURA, A., KAYAMA, T. and NAMIKI, T. A Case Report of a “Necrotizing” Entero-Colo-Proctitis in the Adult. Tohoku J. Exp. Med., 1988, 155 (4), 319-325 — We experienced a patient who died of diarrhea after an operation for glioblastoma. The mucosa of the small and large intestines were entirely denudated. Although the etiology is not clear, this case is supposed to be a very rare one of “necrotizing” enterocolitis in the adult occurring after an operation on a brain tumor.

We experienced a patient who died of diarrhea related to the immunodeficient status after an operation for glioblastoma. The mucosa of the small and large intestines were entirely denudated. Such severe mucosal denudation of the intestine occurring after chemotherapy or radiation of malignant tumors, has never been reported before. Therefore we report this case.

CLINICAL COURSE

The patient was a housewife of 34-years old. She noticed visual disturbances and headaches and visited the department of the neurosurgery of the Sendai National Hospital on July 24, 1986.

Brain-CT and brain angiography were done and she was diagnosed as having a brain tumor in the left temporal lobe.

The operation was performed on August 6 and her brain tumor was mostly removed. Histological diagnosis of the tumor was glioblastoma. She underwent chemotherapy (Krestin 3.0 g/day and tegafur 200 mg/day for 7 days) and radiation (39 Gy on head).

She progressed well neurosurgically until about one month after her operation. Although she seemed to be better day by day, she complained of abdominal fullness on September 9 and abdominal plain film revealed niveau in the small intestine (Fig. 1). On September 13 watery massive diarrhea was detected and she was in a state of shock. She was treated for shock with fluid and steroid infusion; but consistent watery diarrhea continued. The diarrhea was not bloody but the total amount was about 2500–3500 ml/day and occurred 20–25 times/day.

Bacterial examination of the stool revealed no significant findings.

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A fibercolonoscope was inserted up to the sigmoid colon about 40 cm from the anus. It revealed non-specific inflammation of the colon (Fig. 2a) and the biopsy specimen of the colon revealed complete denudation of colonic mucosa without regenerated epithelia (Fig. 2b).

All drugs indicated for inflammatory bowel disease such as salazopyrine, predonisolone, vancomycin and other drugs were administered but proved to be ineffective.

It appeared that her immunoglobulin A level was 52 mg/100 ml on 30th of October which was lower than normal.

She was administered total parenteral nutrition to maintain and improve her nutrition and general conditions. She was administered immunoglobulin to overcome the immunodeficient status. She was also administered antibiotics to treat pneumonitis which occurred because of the immunodeficient status.

Pneumonia-shadow diminished in a month but her diarrhea remained. Her immunoglobulin G level was 629 mg/100 ml and immunoglobulin A level was 55 mg/100 ml on December 20. Both levels were lower than normal and the result of Multi Test CMI® (Institut Mérieux, Miami, FL, USA) suggested her immunodepressive status. The antibody of AIDS was negative.

Her diarrhea became not only watery but bloody from the beginning of December and she was complicated by lung edema and bronchopneumonia on December 20. All the possible methods were tried, but she died on December 25, 1986.
PATHOLOGICAL FINDINGS

Necrotizing enterocolo-proctitis with complete denudation of mucosa without regenerated epithelia through the entire length of small and large intestines was observed (Fig. 3a, b) (Fig. 4a, b). Proliferations of nerve bundles and ganglionic cells of the Meissner's submucosal plexus in submucosa throughout the

Fig. 2. a: Fibercolonoscopy revealed nonspecific inflammation of the colon.  
      b: Microscopic findings of the biopsy specimen of the colon.
entire length of intestines were observed microscopically (Fig. 5). Moreover, vascular changes were not detected microscopically which should be seen in ischemic colitis or disseminated intravascular coagulation. There was bloody and watery matter in the small and large intestines, but there were no localized ulcers, elevated lesion or perforation.

Fig. 3.  

a: Macroscopic findings of the large intestine.
b: Microscopic findings of the large intestine.
Acute ulcers of pyloric antrum of stomach (2×1 cm and 4×2 cm), were detected but gastric matter was not bloody.

Marked fatty liver associated with severe cholestasis of the portal area was detected. Edema and bronchopneumonia with hyaline membrane formation were observed in right lung, and supposed to be the direct cause of her death.

Fig 4. a: Macroscopic findings of the small intestine.  
b: Microscopic findings of the small intestine.
DISCUSSION

Necrotizing enteritis has been reported in neonates and immature babies. Its etiology is unknown (Kliegman et al. 1982) but supposed to be related to ischemia of the colon due to various causes (Stoll et al. 1980). In the present case, the entire mucosa of the small and large intestines were completely denudated and there were proliferations of the Meissner’s submucosal plexus, which have not been described in the literature (Butler et al. 1987). Although the relation between these histological findings and etiology is not clear, at least it is supposed that her severe diarrhea is in part attributable to these histological findings. But proliferations of the Meissner’s submucosal plexus, however, cannot be the cause of her complete denudation of the mucosa of the small and large intestines.

There is a possibility that her immunodeficient status after radiation and anticancer chemotherapy could be a cause of her diarrhea, but she received only the usual anticancer chemotherapy and radiation. So her allergic reaction to the anticancer chemotherapy was supposed to be a possible cause of her diarrhea. And such severe mucosal denudation as this has not been described in reported cases of antibiotic associated diarrhea, pseudomembranous colitis, drug-induced colitis and radiation colitis.

All bacteriological, endoscopic, histological and etiological examination could not reveal specific findings. So the etiology is not clear, but this case is
supposed to be a very rare case of “necrotizing” enterocolitis in the adult occurring after an operation of a brain tumor.

References