



Six cases of life-threatening peptic ulcer bleeding associated with virus infection[☆]



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ABSTRACT

Recent reports have described cases in which peptic ulcer bleeding (PUB) has been associated with virus infection, but the exact relation between the two remains unclear. We experienced six cases of life-threatening PUB associated with virus infection from December 2007 to December 2013. Life-threatening PUB should be considered a possibility in children suffering from virus infection, and prompt and proper management is required.

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Recently, peptic ulcer bleeding (PUB) associated with virus infection such as rotavirus has been reported, but the relation between them remains unclear [1]. We experienced six cases of life-threatening PUB associated with virus infection from December 2007 to December 2013 (Table 1). Herein we report these cases.

1. Case report

1.1. Patient 1

A 19-month-old girl suffered from watery diarrhea and vomiting four days before admission. Three days later, her temperature rose to 38 °C, and she was taken to her doctor. Later that same day under home observation, the development of tarry diarrhea and dark red hematemesis prompted her transportation to an emergency department, where her systolic blood pressure (SBP) and hemoglobin (Hb) were measured at 80 mm Hg and 6.0 g/dl respectively. She was referred to our hospital with the suspicion of upper gastrointestinal bleeding. In our department, her SBP and Hb were 88 mm Hg and 5.8 g/dl, respectively. Dynamic computed tomography (CT) did not reveal bleeding sites, but under general anesthesia, gastrointestinal fiberoscopy (GF) showed slight bleeding from

an exposed vessel on the posterior wall of the stomach. The bleeding was stopped by clipping (Fig. 1). Both norovirus stool antigen test (NA) and rapid urease test were positive. The patient was discharged on the 19th postoperative day with an uneventful postoperative course.

1.2. Patient 2

A 32-month-old boy was admitted to our hospital with diagnosis of influenza and bronchial asthma, and was treated with methylprednisolone. On the fourth admission day, tarry stool and severe anemia (Hb: 4.4 g/dl) developed, but no specific bleeding site was discovered with CT. On the seventh admission day, life-threatening hypovolemic shock occurred with a large amount of tarry stool. The bleeding site was not detected on dynamic CT. The patient was transferred to the operating room while receiving rapid blood transfusion to maintain blood pressure. Under general anesthesia, GF revealed pulsating bleeding from the duodenum, but the bleeding site was unclear (Fig. 2). Sudden and distinct abdominal distension caused by bleeding into the duodenal lumen, reflux of blood into the stomach, and vomiting of a large amount of fresh blood occurred. The SBP fell to 40 mm Hg and Hb decreased to 3.0 g/dl. We stopped GF immediately and transferred the patient to the angiography room. Angiography revealed a rupture of a pseudoaneurysm of the gastroduodenal artery and extravasation of blood into the duodenal lumen. Transcatheter

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Table 1
Patient demographics.

Case	Sex	Age (month)	Virus	<i>H. pylori</i>	Hb (g/dl)	Transfusion	EC	Treatment
1	F	19	Norovirus	+	5.8	+	–	Clipping
2	M	32	Influenza virus	–	3.0	+	–	GF→TAE
3	M	18	Rotavirus	–	6.8	+	–	Conservation
4	M	11	Rotavirus	+	3.9	+	+	TAE
5	M	15	Norovirus	–	6.6	+	–	Conservation
6	M	16	RSV	–	4.9	+	–	Clipping

EC: extravasation on computed tomography; GF: gastrointestinal fiberscopy; Hb: hemoglobin; RSV: respiratory syncytial virus; TAE: transcatheter arterial embolization.

arterial embolization (TAE) was performed immediately to arrest the life-threatening bleeding (Fig. 3). *Helicobacter pylori* stool antigen test (HA) was negative. The postoperative course was good, and the patient was discharged on the 51st postoperative day (We reported this case in the *Journal of the Japanese Society of Pediatric Surgeons* [2]).

1.3. Patient 3

An 18-month-old boy suffered from vomiting and diarrhea four days before admission. Two days later, he was admitted to the hospital near his home due to a large amount of tarry stool (Hb: 8.9 g/dl). Although conservative therapy was started, Hb decreased to 6.3 g/dl, and he was referred to our hospital for further evaluation. In our hospital, his SBP and Hb were 80 mm Hg and 6.8 g/dl respectively, but his condition was improved by blood transfusion. Two days later, GF revealed multiple ulcers from the bulbous to the duodenal second portion, which were cured by conservative therapy (Fig. 4). Rotavirus stool antigen test (RA) was positive, whereas HA was negative. He was discharged on the 17th hospital day.

1.4. Patient 4

Two days before admission, an 11-month-old boy suffering from vomiting was diagnosed with acute gastroenteritis. The next day, watery diarrhea developed, and in the early morning of the admission day, tarry stool occurred, changing to a very bloody stool. He was taken to an emergency department (Hb: 8.6 g/dl), where doctors found his level of consciousness was decreased, and prepared him for transfer to our hospital. On arrival his SBP and Hb were 66 mm Hg and 3.9 g/dl respectively. After his blood pressure was stabilized with catecholamine and fluid resuscitation, dynamic

CT was performed, which revealed extravasation at the duodenal second portion. The patient was transferred to the angiography room directly and the bleeding was arrested by TAE (Fig. 5). Both RA and HA were positive. The patient was discharged on the 10th postoperative day with an uneventful postoperative course.

1.5. Patient 5

A 15-month-old boy suffered from vomiting and high fever two days before admission. Next day, watery diarrhea developed, and on the admission day, he was taken to a doctor due to tarry diarrhea, where his SBP and Hb were measured at 82 mm Hg and 7.6 g/dl respectively, which prompted his transportation to our hospital with the suspicion of upper gastrointestinal bleeding. In our department, his SBP and Hb were 80 mm Hg and 6.6 g/dl, respectively. Dynamic CT did not reveal bleeding sites, but under general anesthesia, GF showed duodenal ulcer formation on the bulbous, which were cured by conservative therapy (Fig. 6). NA was positive, whereas HA was negative. In addition, gastric biopsy of the antrum revealed gastritis without any causative findings. He was discharged on the 8th hospital day.

1.6. Patient 6

A 16-month-old boy with bronchitis was taken to his doctor due to high fever and cough, and diagnosed as respiratory syncytial virus (RSV) infection three days before admission. Next day, tarry stool appeared. On admission day, fresh hematemesis and bloody stool developed, and he was transferred to our hospital for further evaluation. In our department, his SBP and Hb were 60 mm Hg and 4.9 g/dl, respectively. Dynamic CT did not reveal bleeding sites, but under general anesthesia, GF showed slight bleeding from an

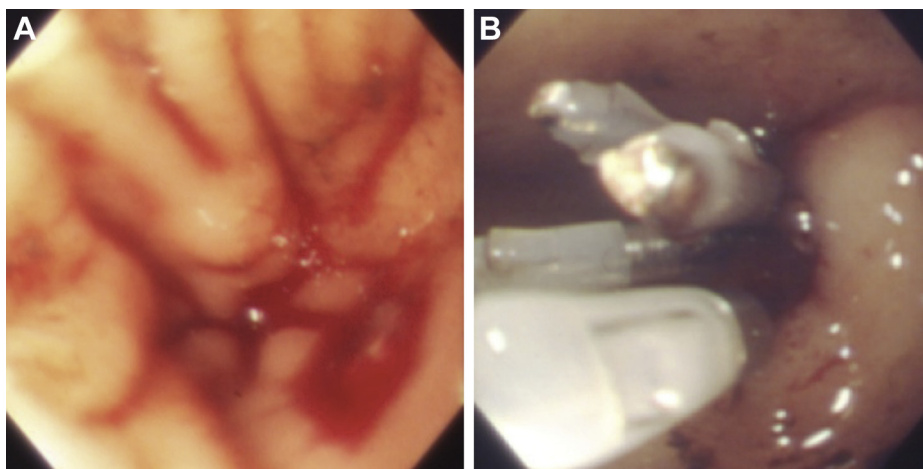


Fig. 1. Patient 1: (A) Gastrointestinal fiberscopy showed slight bleeding from an exposed vessel on the posterior wall of the stomach. (B) The bleeding was stopped by clipping.

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