

Ryota Inokuchi
Tatsuma Fukuda
Naoki Yahagi
Kensuke Nakamura

Severe hepatic portal venous gas that spontaneously resolved within a day

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R. Inokuchi · T. Fukuda · K. Nakamura
Department of Emergency and Critical Care Medicine, Hitachi
General Hospital, 2-1-1, Jonancho, Hitachi-city, Ibaraki 317-0077,
Japan

R. Inokuchi (✉) · T. Fukuda · N. Yahagi · K. Nakamura
Department of Emergency and Critical Care Medicine, The
University of Tokyo Hospital, 7-3-1 Hongo, Bunkyo-ku, Tokyo
113-8655, Japan
e-mail: inokuchir-icu@h.u-tokyo.ac.jp
Tel.: +81-3-5800-8681

R. Inokuchi
Department of Emergency Medicine, JR General Hospital, 2-1-3
Yoyogi, Shibuya-ku, Tokyo 151-8528, Japan

A 76-year-old man, without any surgical history, presented with disturbance of consciousness. Physical examination indicated abdominal distension without

bowel sounds. Laboratory data revealed an elevated white blood cell count (14,400/ μ L) and lactate dehydrogenase level, but no elevated C-reactive protein level (0.34 mg/dL), hepatic dysfunction, or hyperammonemia. Abdominal computed tomography revealed hepatic portal venous gas (HPVG) and intestinal distension (Fig. 1a). Owing to the stable vital signs and lack of bowel ischemia, surgery was not performed. After bowel movements and excretion of large stool, the HPVG disappeared (Fig. 1b). Upper endoscopy and colonoscopy findings were normal. After 23 days, the patient was fully conscious and was discharged. HPVG is rarely noted on imaging and its pathogenesis remains unclear. Mesenteric vascular occlusion, bowel ischemia, and subsequent bowel necrosis, due to the presence of gas-forming bacteria in the portal venous system, may cause the passage of gas into the circulation, which is a common cause of HPVG. Although this condition is rare, digestive tract dilatation, gastric ulcer, ulcerative colitis, Crohn disease, or endoscopic procedure complications may increase the pressure in the bowel lumen, thus causing gas to escape from the circulation into the liver, which may have caused HPVG in our case.

Fig. 1 a Abdominal computed tomogram showing multiple collections of gas in the branches of the portal vein (*arrow*), severe gastric distension (*large arrowhead*), and severe intestinal distension (*small arrowhead*). **b** Abdominal computed tomogram showing no hepatic portal venous gas and intestinal distension

