

Case Report

Hepatic Portal Venous Gas from Ascending Colon Diverticulitis

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ABSTRACT

A 78-year-old female was seen in the emergency department with a high fever (38.6°C) and lower quadrant abdominal pain. Blood tests revealed a white blood cell count of 14,600/ml and a C-reactive protein level of 23.2 mg/dl. The patient had sporadic admissions for diverticulitis of the ascending colon that were treated conservatively. Urgent Computed Tomography revealed gas scattered throughout the portal venous branched in the liver and in the wall of the ascending colon suggestive of severe diverticulitis. For the purpose of detecting the condition of the ascending colon, emergency colonoscopy was performed with preparing for requirement of emergency surgery. No intestinal necrosis was found by it. As she was given antibiotics and r-globulin immediately, and her fever and abdominal pain had been relieved gradually. Furthermore, hepatic portal venous gas (HPVG) disappeared the next day. She continued to improve and was discharged without surgery on hospital day 14. HPVG was most commonly associated with intestinal necrosis, and its mortality was very high (75%). The emergency colonoscopy greatly contributed to the decision making of her treatment. Prompt diagnosis and treatment cannot be over emphasized.

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Key words : hepatic portal venous gas, colon diverticulitis

INTRODUCTION

Hepatic portal venous gas (HPVG) was a rare entity that is usually indicative of an abdominal catastrophe. It was most commonly associated with intestinal necrosis, and its mortality was very high (75%)¹. We should try to examine the patient with intestinal necrosis or not promptly, when HPVG is found by any imaging examinations. We report that emergency colonoscopy prevented surgical treatment for the patient with HPVG.

CASE REPORT

A 78-year-old female was seen in the emergency department with a high fever (38.6°C) and lower quadrant abdominal pain. Blood tests revealed a white blood cell count of 14,600/ml and a C-reactive protein level of 23.2 mg/dl. The patient had sporadic admissions for diverticulitis of the ascending colon that were treated conservatively. Urgent Computed Tomography (CT) revealed gas scattered throughout the portal venous branched in the liver (Fig. 1) and in the wall of the ascending colon suggestive of severe diverticulitis (Fig. 2). For the purpose of detecting the condition of the ascending colon, emergency

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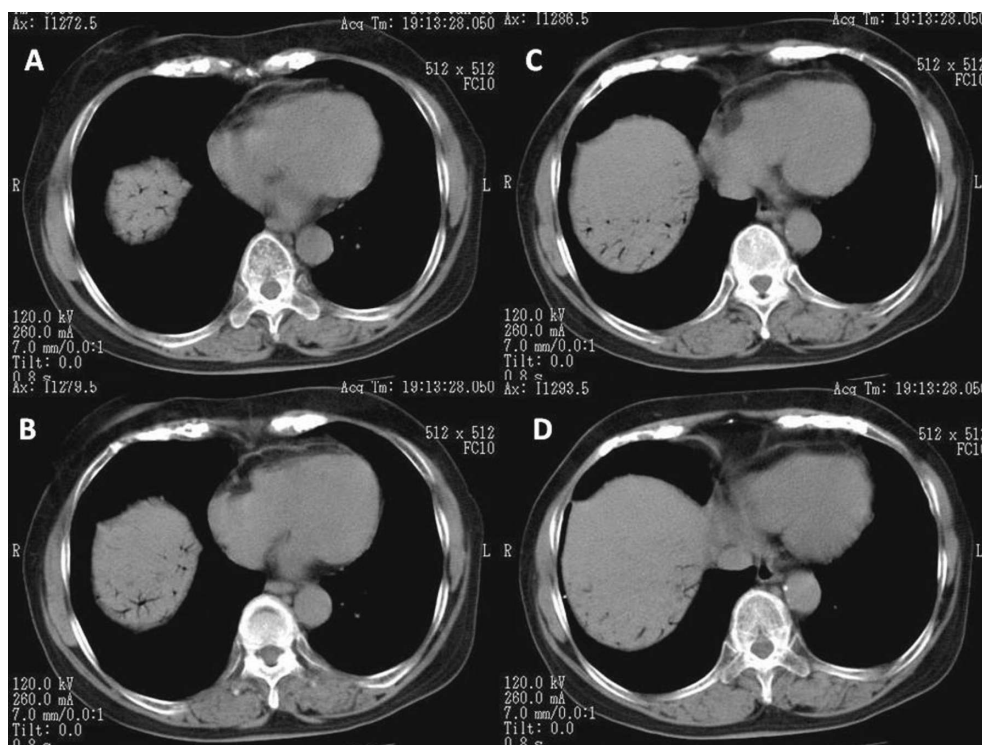


Fig. 1. Four serial pictures obtained by Computed Tomography demonstrated multiple linear gas densities in peripheral branches of the portal vein within the liver.



Fig. 2. The Computed Tomography demonstrated thickening of the ascending colon suggestive of diverticulitis (arrows).

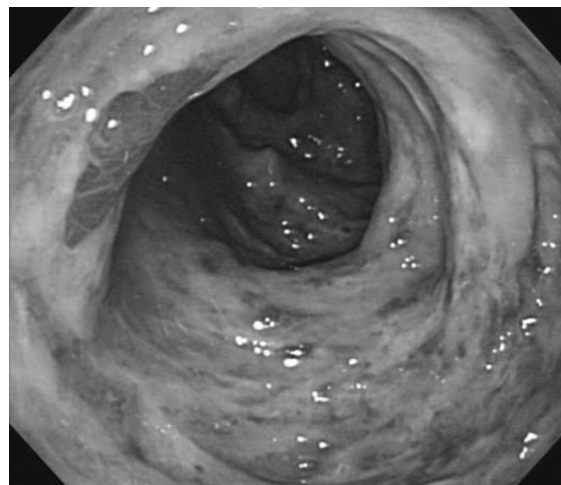


Fig. 3. Colonoscopy revealed severe colitis due to diverticulitis without intestinal necrosis.

colonoscopy was performed with preparing for requirement of emergency surgery. No intestinal necrosis was found by it (Fig. 3). As she was given antibiotics and r-globulin immediately, and her fever and abdominal pain had been relieved gradually. Furthermore, HPVG disappeared the next day. She continued to improve and was discharged without

surgery on hospital day 14.

DISCUSSION

HPVG was first described by Wolf and Evans² in 1955 in infants with necrotizing enterocolitis. In

1960, Susman and Senturia³ reported the first adult case, a patient critically ill with small bowel infarction. Thereafter, many cases are being reported with the advancement of imaging. There are various conditions associated with HPVG. The review by Kinoshita and associates¹ of 182 cases of HPVG showed that it was most commonly associated with intestinal necrosis (43%), followed by digestive tract dilatation (12%), intraperitoneal abscess (11%), ulcerative colitis (4%), complication of endoscopic procedure (4%) and Crohn's disease (4%). The overall mortality was 39%, but this was mitigated by a large number of patients with HPVG with underlying diseases other than bowel necrosis, which was associated with a 75% mortality.

In our case, the place and the degree of her abdominal pain were similar to those of the previous admissions. However, HPVG was detected by CT only at this time. Therefore, we performed the emergency endoscopy for detecting bowel necrosis or not. As the risk of intestinal injury by emergency endos-

copy could not be denied, we had to prepare for requirement of emergency surgery at anytime. The emergency colonoscopy showed that the patient had no intestinal necrosis. She gradually improved by conservative therapy and was discharged without surgery. The emergency colonoscopy contributed the decision making of her treatment. Prompt diagnosis and treatment cannot be over emphasized.

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