

혈액투석 환자에서 발생한 비폐쇄성 장간막 허혈로 인한 간문맥 내 가스

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Hepatic Portal Venous Gas due to Nonocclusive Mesenteric Ischemia in a Hemodialysis Patient

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A 70-year-old man presented to emergency department complaining of abdominal distension. He had undergone hemodialysis (HD) two years previous due to end stage renal disease with membranous glomerulonephritis. HD treatment was performed three times a week, and his interdialytic weight gain was 3-4.5% of his dry weight. He experienced frequent hypotensive episodes during dialysis.

Initial vital signs were: blood pressure 95/47 mmHg, pulse rate 97/min and body temperature 36.2°C. On physical examination, his abdomen was rigid with generalized tenderness. A plain abdominal radiography showed gaseous distension of the small bowel, and hepatic portal venous gas was visible. Computed tomography confirmed extensive hepatic portal venous gas (HPVG) and pneumatosis intestinalis of the small bowel and colon. Advanced atherosclerosis along the abdominal aorta was also noted. With the suspicion of bowel necrosis, emergency laparotomy was performed. Surgical finding was total necrosis of the small bowel, but thrombosis of the mesenteric artery was not found. Despite aggressive treatment with total small bowel resection, the patient died of shock one day after the operation.

HPVG is a rare radiologic finding but can be a life-threatening condition. Bowel ischemia and/or infarction is the primary etiology of HPVG and results in damage to the mucosal barrier which, in association with over-distension of the bowel and gas-forming bacterial proliferation, leads to gas migration from the intestinal lumen to the mesenteric veins and to the portal system. HPVG often occurs in conjunction with pneumatosis intestinalis, especially in the ischemic intestine. Nonocclusive mesenteric ischemia (NOMI) appears more commonly among HD patients than in the general population. The predisposing causes for the NOMI in HD patients are hypotension, hypovolemia, mesenteric vasoconstriction, and atherosclerosis. Therefore, the diagnosis of NOMI that warrants emergency surgery should be considered in HD patients presenting abdominal symptoms with HPVG.

Key Words: 간문맥 내 가스, 비폐쇄성 장간막 허혈, 혈액투석

Portal venous gas, Mesenteric ischemia, Hemodialysis