

Benign Hepatic Portal Venous Gas in a Critically Ill Patient

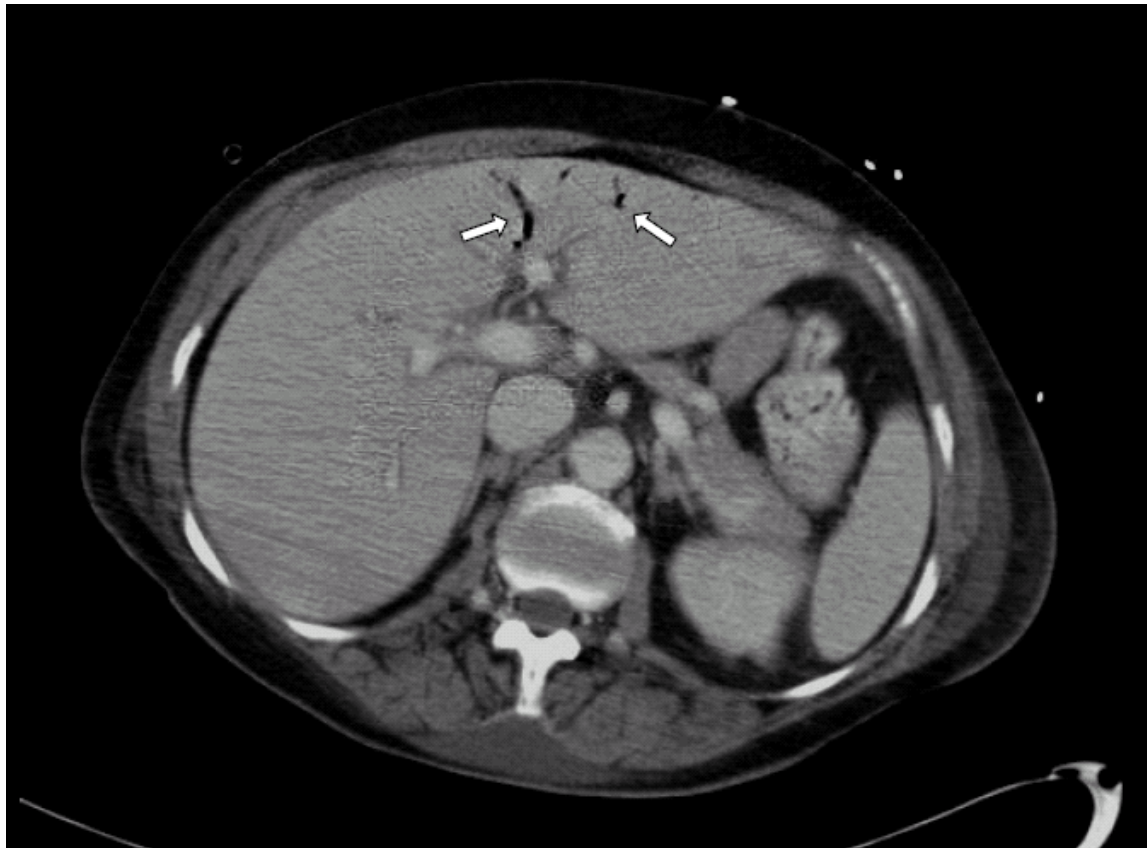


FIGURE. CT of the abdomen showing hepatic portal venous gas (see arrows).

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Hepatic portal venous gas (HPVG) formation is regarded as a sign of a serious intra-abdominal process due to its association with bowel necrosis[1], perforation[2], obstruction[3], and mesenteric infarction[4]. It is attributed to either disruption of intestinal mucosa, gas production in the hepatic portal system, or to iatrogenically increased intestinal lumen pressures such as in nasogastric intubation[4,5]. This abdominal CT scan is from a 62-year-old female who was admitted to the intensive care unit for hypercarbic respiratory failure from chronic obstructive pulmonary disease exacerbation. After 2 days of nasogastric tube placement, the patient's alkaline phosphatase increased from 84 to 210 U/L. She has no history of recent endoscopic gastrointestinal examination. Her abdominal exam was unremarkable. The rest of the chemistry panel, including lactic acid, was within normal limits except for an elevated gamma-glutamyl transpeptidase of 419 U/L. Blood cultures were negative. An abdominal CT scan revealed new HPVG formation as compared to an earlier scan on admission. There were no CT scan findings of free intra-abdominal gas, pneumatosis intestinalis, bowel or mesenteric ischemia, lymphadenopathy, gall bladder disease, pancreatitis, bowel obstruction, or inflammation. Given these findings, no aggressive intervention was done. On hospital discharge, her liver enzymes normalized and follow-up abdominal ultrasound showed resolution of HPVG. Understanding that there are multiple conditions that can precipitate the development of HPVG, its finding should prompt a thorough diagnostic evaluation to immediately rule out a catastrophic intra-abdominal condition. The patient's overall clinical condition should be placed into perspective when deciding on the need for any invasive intervention.

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