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Portal vein gas detected by point of care ultrasound, case report

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Introduction: Portal venous gas could be rarely found in adults and is typically associated with underlying intestinal ischemia. Portal venous gas can be detected by a bedside point of care ultrasound (POCUS) examination in adult patients in critical care units (CCU). Findings include echogenic bubbles flowing centrifugally throughout the portal venous system.

Case presentation: We present the case of a 73-year-old female with advanced ischemic cardiomyopathy and cardiorenal syndrome who was managed in the CCU. She developed vague abdominal pain and respiratory depression requiring intubation and dialysis during her course of treatment in the CCU. Her findings were consistent with portal venous gas upon POCUS, prompting computed tomography of her abdomen and surgical consultation. She was ultimately found to have nonobstructive mesenteric ischemia.

Clinical discussion: PVG is an ominous radiological sign and reflects intestinal ischemia up to 72% of cases. Occlusive or non-occlusive obstruction of the arterial blood supply or obstruction of venous outflow could be the particular reasons for acute mesenteric ischemia of the small bowel. Nonocclusive obstruction accounts for 5% to 15% of patients with acute mesenteric ischemia.

Conclusion: With the increasing use of POCUS, critical care physicians should be aware of findings consistent with portal venous gas as a bedside tool for directing the treating physician toward an ominous diagnosis in patients with shock.

Keywords: Point of care ultrasound, mesenteric vessel occlusion, portal vein gas.

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