

IMAGING IN INTENSIVE CARE MEDICINE

Aquarium sign in acute mesenteric ischemia



Kenjiro Ouchi* , Daisuke Kawakami and Jiro Ito

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An 89-year-old man with a history of ischemic heart disease was admitted for low cardiac output syndrome and treated with inotropic agents and diuretics. On day 3, he

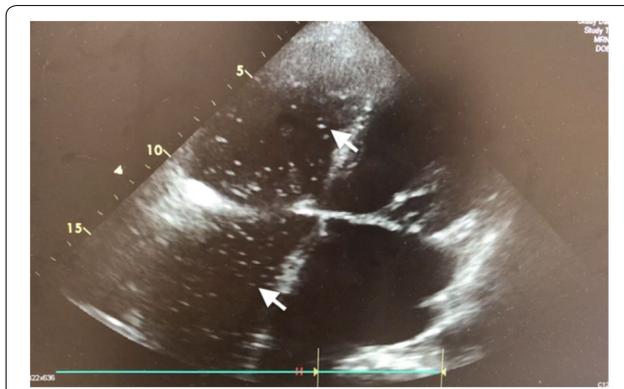


Fig. 1 Echocardiography showing the Aquarium sign; numerous microbubbles in the right-side cardiac chambers on the four-chamber view (arrows)

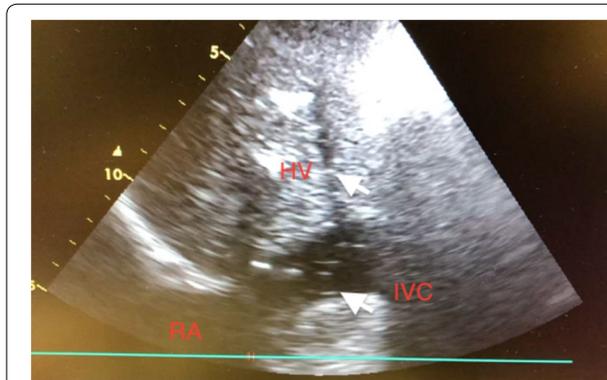


Fig. 2 Abdominal ultrasonography showing microbubbles (arrows) flowing from the hepatic vein (HV) and inferior vena cava (IVC) to the right atrium (RA)

presented with abdominal distention and vomit. A bedside ultrasonography showed an aquarium sign (Fig. 1, Video 1), a term used to describe the presence of numerous microbubbles in the cardiac chambers. The microbubbles were flowing continuously from the hepatic vein (HV) and the inferior vena cava to the right-side cardiac chambers (Fig. 2, Video 2). Contrast-enhanced computed tomography scans showed small bowel necrosis with pneumatosis intestinalis and portal venous gases without superior mesenteric artery occlusion. The patient was diagnosed with non-occlusive mesenteric ischemia. The next day, he died of refractory shock. The aquarium sign and microbubbles in the HV suggested the presence of hepatic portal venous gas (HPVG). HPVG can be caused by bowel mucosal damage, bowel distention, and sepsis by gas-producing bacteria, but one of the most important diseases is acute mesenteric ischemia (AMI). In this case, the Aquarium sign detected with a bedside ultrasonography was a clue to diagnose AMI.

Electronic supplementary material

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*Correspondence: ooken601030@yahoo.co.jp
Department of Critical Care Medicine, Kobe City Medical Center General Hospital, 2-1-1, Minatojima-minamimachi, Chuo-ku, Kobe, Hyogo 650-0047, Japan