

中文題目：急性心臟衰竭病患的肝臟超音波表現

英文題目：Liver sonographic findings in patient with acute decompensated heart failure

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Background:

Liver congestion is diffuse venous congestion within the liver, described as the stasis of blood in the hepatic parenchyma.¹ Elevated central and hepatic venous pressure may be caused by heart failure which includes cardiomyopathy, tricuspid regurgitation or stenosis, pulmonary arterial hypertension, cor pulmonale, constrictive pericarditis, and so on.² Abdominal sonography is a handy tool for evaluation of hepatic vasculature.

Case report:

75-year-old-man had the past histories of heart failure with reduced ejection fraction, coronary artery disease status post percutaneous coronary intervention twice (2002 and 2009), hypertension, type 2 diabetes mellitus, chronic kidney disease, hyperlipidemia, hypoparathyroidism, and benign prostatic hyperplasia. According to patient and family, he came to India for several weeks. Due to dyspnea and generalized malaise, he started to take Tibetan medicine for about 3 weeks. However, he suffered from dyspnea on exertion and bilateral legs pitting edema for 1 week. Due to progressive symptoms, he came to our hospital where abnormal renal and liver function tests were noted. Physical exam showed ill appearance, icteric sclera, heart murmur, cold extremities with weak pulse, and bilateral lower limbs pitting edema (3+). Under the impression acute decompensated heart failure (NYHA Fc IV), acute hepatic injury, and acute kidney injury, patient was admitted for further management.

Echocardiography revealed severe left ventricular systolic dysfunction (left ventricular ejection fraction [LVEF] 26%), severe mitral regurgitation, moderate tricuspid regurgitation, moderately right ventricular systolic dysfunction, and moderate pulmonary hypertension.

Progressive hyperbilirubinemia was also noted. Hyperbilirubinemia, direct type predominant, favor mixed hepatocellular and cholestatic type injury were favored. Abdominal sonography revealed dilated hepatic veins (around 1.11 cm) and dilated inferior vena cava (IVC) (around 2.55 cm) (Figs 1, 2,3,4).

Further exam for deteriorating of liver function was performed includes virology and toxicology which presented negative finding. Molecular Adsorbents Recirculating System was arranged after discussing with family due to ongoing

disease. However, the patient passed away due to progressive heart failure accompanied with hepatic failure and renal failure.

Discussion:

Sonographic finding of liver congestion related to heart failure could be presented with uncompressed IVC, increased diameter of IVC with volume no longer vary with respiration, enlarged liver and spleen, dilated hepatic veins, renal veins, and iliac vessels, thickened gallbladder wall, and ascites. Normal hepatic veins have a maximum diameter of 5 mm before termination at IVC and IVC normally is less than 2 cm in diameter during late inspiration and end expiration.³ In heart failure, sonography of hepatic veins conflux reveals dilated hepatic veins draining into a dilated IVC, which represent the Playboy Bunny sign but may resembled as a moose's head.⁴ (Fig 5). In this case, abdominal sonography showed dilated hepatic veins (around 1.11 cm) and dilated IVC (around 2.55 cm) with bilateral pleural effusion. No remarkable finding in visible portion of gallbladder, pancreas and spleen.

Decreased liver perfusion and cardiac output are associated with heart disease which caused elevated central and hepatic venous pressure. Abdominal sonography for evaluating liver congestion will help to gather more information for further management.

Image:

Figure 1



Figure 2

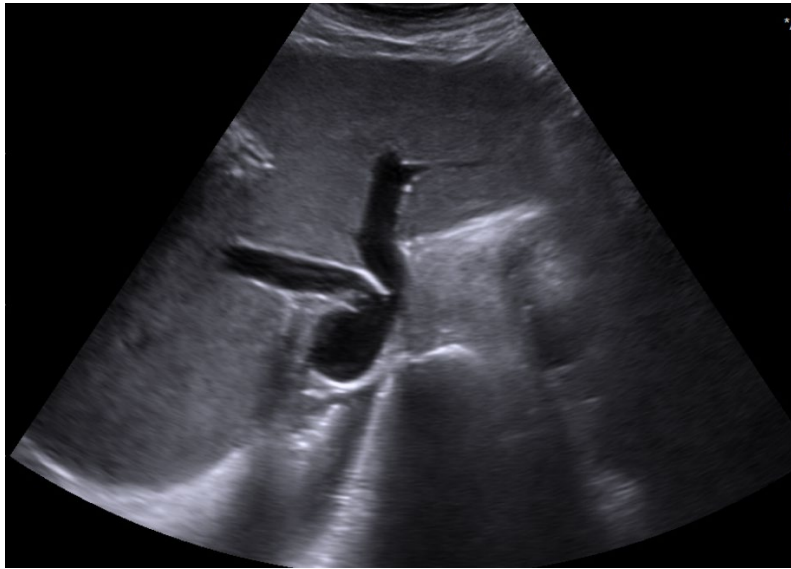


Figure 3

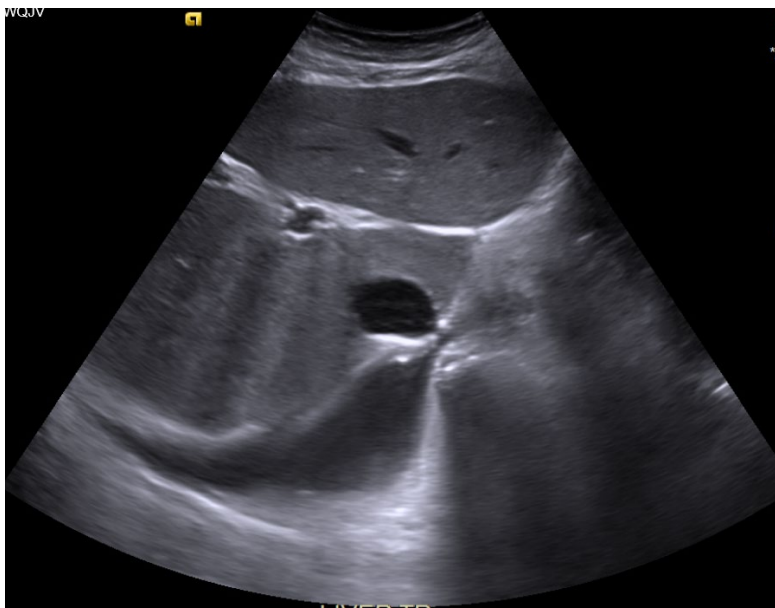


Figure 4

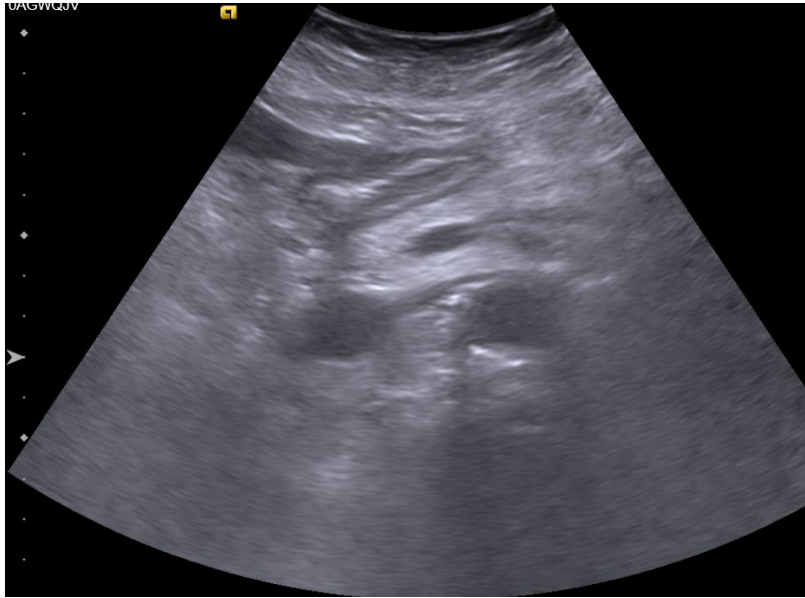
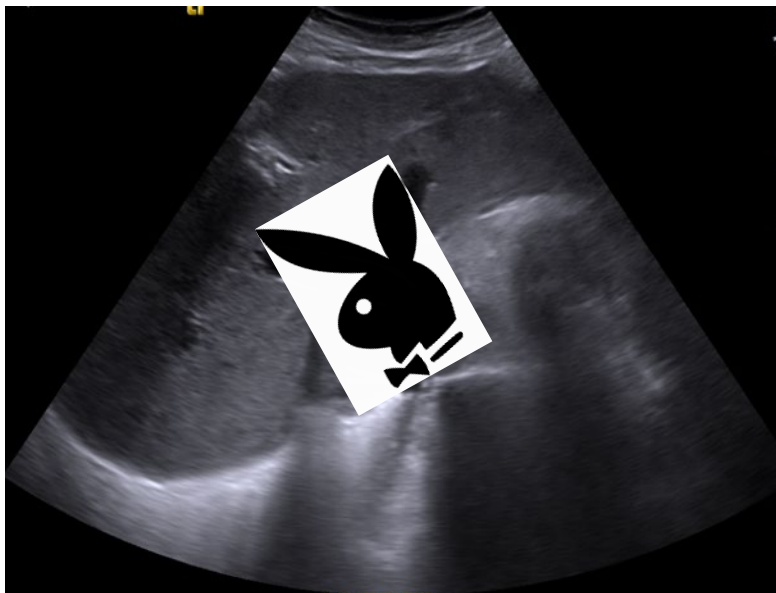


Figure 5



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4. Hokama A, Arakaki S, Shibata D, Maeshiro T, Kinjo F, Fujita J. “Playboy Bunny” Sign of Congestive Heart Failure. *West J Emerg Med* 2011; 12: 433– 4.