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Challenging the gold standard: endohepatology in the diagnosis of presinusoidal portal hypertension

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Dear Editor,

We report a 52-year-old patient referred for evaluation of abnormal liver tests, with extensive etiological workup negative. Abdominal CT and MRI revealed hypertrophy of the left hepatic lobe, nodular liver contours, and ascites (SAAG 1.7; total protein 1.8 g/dL). Upper endoscopy showed no stigmata of portal hypertension.

A dual interventional radiology procedure was performed. Transjugular liver biopsy (LB) (18G) was non-diagnostic, and hepatic venous pressure gradient (HVPG) was

normal (HVPG 3 mmHg; wedged hepatic venous pressure [WHVP] 13 mmHg; free hepatic venous pressure [FHRVP] 10 mmHg).

Given suspicion of pre-sinusoidal portal hypertension, endoscopic ultrasound (EUS) was performed (Arietta 850, Fujifilm Healthcare, Tokyo, Japan) (Fig. 1 A–G). EUS showed blunting of the left lobe tip, irregular contours, and ascites. Endoscopic "palpation" revealed an indentation of 2.0 mm (abnormal). Shear-wave-elastography (SWE) of the left lobe was normal at 6.04 kPa, but other areas showed 10.5–11.1 kPa (abnormal). No splenomegaly, but the mean SWE was 31.9 kPa (abnormal).

EUS-guided portal pressure gradient (EUS-PPG), measured with EchoTip Insight™ FNB needle (Cook Medical, USA), was elevated (PPG 8 mmHg; mean hepatic vein pressure 4.0 mmHg; mean portal vein pressure [PVP] 12.0 mmHg).

Targeted EUS-guided biopsy of the left lobe (Acquire™ 19G FNB needle, Boston Scientific, USA) showed vague liver nodular transformation with alternating regenerative and atrophic hepatocytes, consistent with nodular regenerative hyperplasia (NRH) (Fig. 2 A–B).

Due to refractory ascites, TIPS placement was proposed. Pre-TIPS evaluation showed mildly elevated HVPG (6 mmHg), while immediate post-TIPS assessment revealed elevated HVPG (HVPG 11 mmHg; PVP 20 mmHg; FHRVP 9 mmHg). Ascites was controlled with TIPS.

Discussion

Endohepatology has emerged in recent years as a means to enhance the interface between endoscopy and hepatology allowing an "one-stop-shop" evaluation in selective patients. Nowadays, several applications have been integrated into clinical practice of some centres.[1,2]

Among them, two stand out for their relevance: the measurement of the PPG and LB, the latter allowing single-operated targeted-LB. [3,4]

Additionally, detailed assessment of the hepatic parenchyma, indentation and hepatic and splenic SWE, enhance its value as a diagnostic tool. Together, these techniques have significantly advanced the evaluation of portal hypertension, particularly in cases where conventional approaches may be inconclusive.[5]

There is no head-to-head studies currently available to definitively establish the superiority of PPG over HVPG. Nevertheless, several advantages have been reported, particularly in the context of pre-sinusoidal portal hypertension, as in NRH, because HVPG may underestimated the portal pressure.[4]

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Conflict of interest: Marvin Ryou – medical consultant for Olympus, Fujifilm and Cook Medical.

Informed consent: The authors obtained informed consent from the patient for the publication of their information and imaging.

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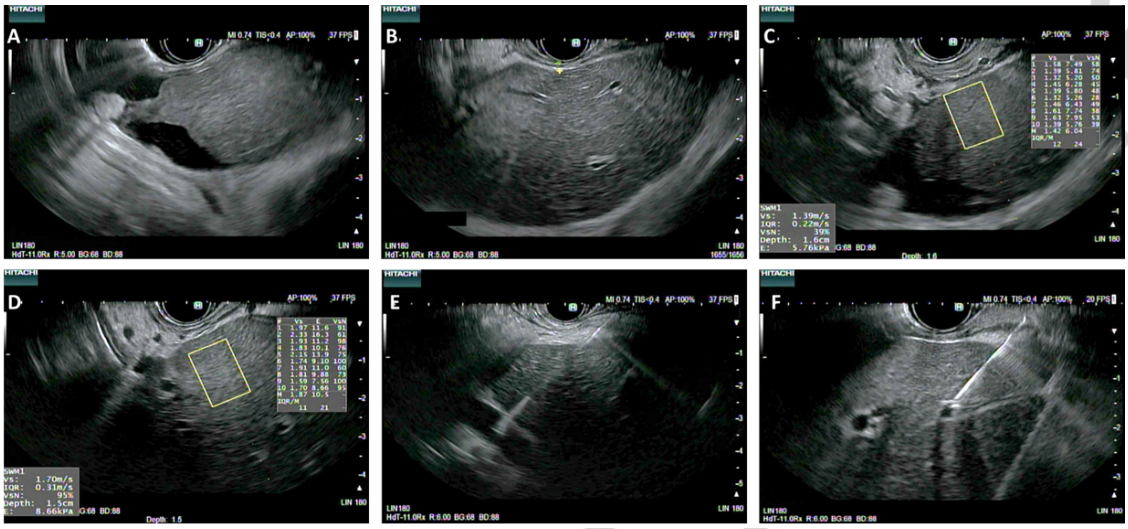

Figure 1. One-stop-shop endoscopic ultrasound (EUS) approach. A: EUS-liver observation suggestive of advanced chronic liver disease. B: Abnormal EUS-liver indentation. C: Normal left lobe shear-wave elastography. D: Abnormal left lobe shear-wave-elastography. E: EUS-guided portal pressure gradient (PPG) - portal vein. F: PPG measurement - left hepatic vein.

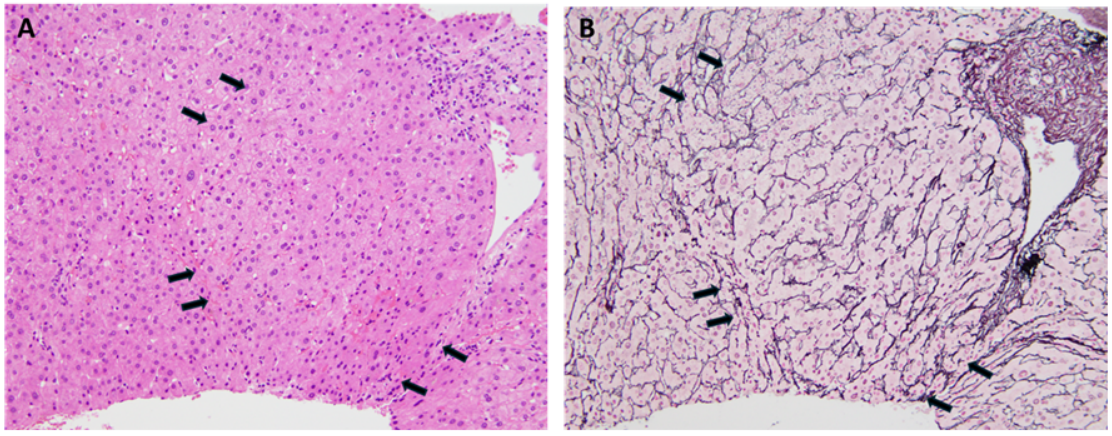

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Figure 2. Histopathological examination. A (Hematoxylin and Eosin), B (Reticulin stain); 20X: Nodular liver parenchyma secondary to atrophic hepatocytes (arrows) flanking regenerating, hypertrophic hepatocytes. There is no fibrosis.