



## IMAGE OF THE MONTH

## Large portopulmonary venous anastomosis in a patient with portal hypertension

### Anastomosis portopulmonar de gran tamaño en paciente con hipertensión portal

Luis Gorospe\*, Aurora Solier-López, Ana María Ayala-Carbonero, Gemma María Muñoz-Molina

Hospital Universitario Ramón y Cajal, Madrid, Spain



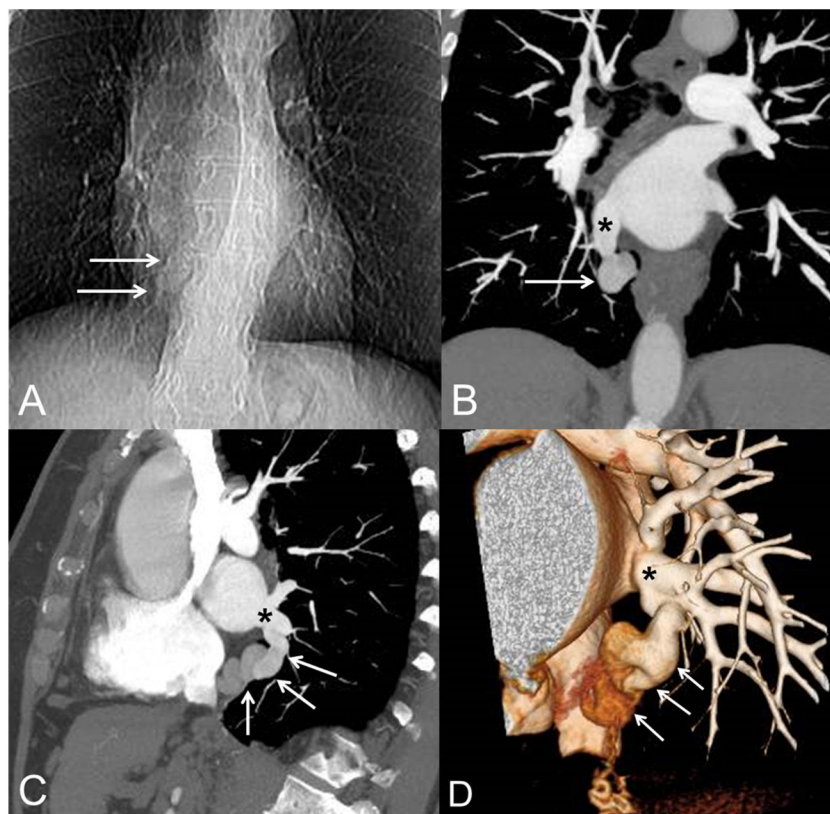
A 74-year-old patient with hepatitis C virus-related cirrhosis who had been admitted with several episodes of hydropic decompensation and hepatic encephalopathy in the past complained of exertional dyspnea. A chest radiograph showed an abnormal contour of the right inferior paraspinal line (Fig. 1A). Contrast-enhanced CT showed multiple paraesophageal varices. One larger right paraesophageal varix was found draining into the right inferior pulmonary vein, resulting in a right-to-left extracardiac shunt (Fig. 1B–D). A saline contrast echocardiography did not show echoes within the left atrium. Given the absence of oxygen desaturation and the presence of only mildly enlarged cardiac chambers on echocardiography, a watch-and-wait approach was consensually decided with the patient.

Portal hypertension (PH) is a progressive inevitable consequence of cirrhosis with formation of many venous collaterals. Portopulmonary venous anastomosis (PPVA) is

a potential collateral pathway rarely detected in patients with PH, and may be incidentally detected on imaging studies. PPVA is a rare but potentially reversible cause of hypoxemia, hepatic encephalopathy, and/or heart failure in patients with PH.<sup>1</sup> Unlike other portosystemic pathways in PH patients, PPVA leads to a right-to-left shunt.<sup>1</sup> A potential reported complication in patients with unsuspected PPVAs undergoing embolization of paraesophageal/gastric varices (with small particles or cyanoacrylate injection) is systemic arterial embolism.<sup>2</sup> Therefore, clinicians should be aware of this complication and rule out the presence of a PPVA with contrast-enhanced CT before the injection of gastric/paraesophageal varices. Balloon-occluded retrograde transvenous obliteration (BRTO) is a potential embolization treatment of PPVA in some patients.<sup>3</sup> Contrast-enhanced CT is regarded as the best tool for evaluation of the status of portosystemic collaterals in patients with PH.

\* Corresponding author.

E-mail address: [luisgorospe@yahoo.com](mailto:luisgorospe@yahoo.com) (L. Gorospe).



**Figure 1** (A) Posteroanterior chest radiograph shows an abnormal contour of the right inferior mediastinum (arrows). (B) Coronal MIP (maximum intensity projection) CT image shows a dilated paraesophageal vein (arrow) draining into the right inferior pulmonary vein (asterisk). (C) Sagittal MIP CT image shows the tortuous paraesophageal vein (arrows) draining into the right inferior pulmonary vein (asterisk). (D) Volume-rendering CT image (from a right posterior view) shows the tortuous and dilated collateral vein (arrows) draining into the right inferior pulmonary vein (asterisk).

## References

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