



Unusual incidental finding: Azygos vein continuation

Fabio Carboni, MD, PhD^{a,*}, Luca Bertini, MD^b, Mario Valle, MD, FACS^a

^a Department of Digestive Surgery, IRCCS Regina Elena National Cancer Institute, Rome, Italy

^b Department of Radiology, IRCCS Regina Elena National Cancer Institute, Rome, Italy

ARTICLE INFO

Article history:

Accepted 9 January 2019

Available online 23 February 2019

Clinical Description

A 62-year-old female patient with no relevant past history was admitted for an asymptomatic periduodenal lesion. Computed tomography (CT) scan showed a 27- × 19- × 21-mm solid nodular mass beneath the III duodenal portion, and absence of the hepatic portion of the inferior vena cava (IVC) was incidentally detected. Hepatic veins drained directly into the right atrium and the suprarenal portion of the IVC drained into a prominent azygos vein (Figure). Uneventful surgical excision of the mass was performed and pathology revealed benign solitary fibrous tumor.

Discussion

Advances in cross-sectional imaging have led to increasing detection of IVC anomalies. Contrast-enhanced computed tomography is the most common diagnostic modality performed for identification of these anomalies. The portal venous phase is widely used to evaluate IVC, although increasing the delay after contrast material injection allows for more uniform enhancement.¹ The IVC is composed of four segments (hepatic, suprarenal, renal, and infrarenal) arising from embryonic structures. Azygos continuation, also referred to as the absence of intrahepatic IVC, results from a failure to develop the right subcardinal-hepatic anastomosis. The suprarenal segment of IVC continues posteriorly to the diaphragmatic crura and subsequently drains into the azygos vein while the hepatic veins drain directly into the right atrium. This anomaly has a prevalence of 0.6% in patients with congenital heart disease but less than 0.1% in the healthy population. Its recognition is important because the enlarged azygos vein could be mistaken for



Figure. Coronal abdominal CT scan showed the absence of the intrahepatic IVC (white arrow). The suprarenal IVC continued posteriorly to the diaphragmatic crura and drained directly into a prominent azygos vein (black arrow). Hepatic veins drained directly into the right atrium (white arrowhead).

adenopathy or mediastinal mass and complications during surgical or radiologic procedures may occur.^{1–3}

References

- Smillie RP, Shetty M, Boyer AC, Madrazo B, Jafri SZ. Imaging evaluation of the inferior vena cava. *Radiographics*. 2015;35:578–592.

* Reprint requests: Fabio Carboni, MD, PhD, Department of Digestive Surgery, IRCCS Regina Elena National Cancer Institute, via Elio Chianesi 53, 00144, Rome, Italy.

E-mail address: fabiocarb@tiscali.it (F. Carboni).

2. Iezzi R, Posa A, Carchesio F, Manfredi R. Multidetector-row CT imaging evaluation of superior and inferior vena cava normal anatomy and caval variants: Report of our cases and literature review with embryologic correlation. *Phlebology*. 2018. <https://doi.org/10.1177/0268355518774964>.
3. Liu Y, Guo D, Li J, et al. Radiological features of azygos and hemiazygos continuation of the inferior vena cava. A case report. *Medicine (Baltimore)*. 2018;97:e0546.