



## Internal Medicine Flashcard

## Young woman with dyspnea and upper abdominal pain

Jud Philipp<sup>a,\*</sup>, Watzinger Norbert<sup>b</sup>, Gary Thomas<sup>a</sup><sup>a</sup> Division of Angiology, Department of Internal Medicine, Medical University of Graz, Graz, Austria<sup>b</sup> Department of Internal Medicine, Hospital Group Feldbach-Fürstenfeld, Feldbach, Austria

## 1. Case description

A 21-year-old woman presented to the emergency department with severe dyspnea, hypotension (83/46 mmHg), tachycardia (152 beats/min) and upper abdominal pain. Her medical history included familial predisposition for pulmonary embolism. Except dull pain in the right upper abdomen, physical examination was unremarkable. D-dimer, NT-proBNP, troponin T, alanine and aspartate transaminases were elevated and ECG showed S1Q3T3 pattern. Emergency ultrasound revealed massive dilatation of the right atrium and ventricle with a floating thrombus in the inferior caval vein and inhomogeneous liver parenchyma. Due to cardiogenic shock and suspected pulmonary embolism, rescue lysis with alteplase and enoxaparin was administered with consecutive amelioration of blood pressure and heart rate. Abdominal computed tomography (CT) and CT angiography of the pulmonary arteries were performed.

## 2. Diagnosis

*Acute congestive hepatopathy associated with pulmonary embolism.* CT scan revealed bilateral pulmonary embolism. Additionally, massive hepatomegaly with a ‘kissing liver and spleen sign’ (Fig. 1a and b, red arrows) could be detected. The patient was admitted to the ICU and treated with enoxaparin. Liver parenchyma and parameters restored completely and anticoagulation was changed to rivaroxaban without further thrombotic events.

‘Kissing liver and spleen sign’ indicates severe enlargement of the liver, spleen or both and may occur in pulmonary embolism. Pulmonary embolism represents another cause for severe hepatomegaly and also for acute liver failure due to preliminary acute right heart failure complicating the clinical outcome [1,2]. A fast diagnostic work-up including laboratory tests and imaging methods as well as appropriate therapy initiation may prevent acute liver failure in pulmonary embolism.

\* Corresponding author at: Division of Angiology, Department of Internal Medicine, Medical University of Graz, Auenbruggerplatz 15, 8036 Graz, Austria.  
E-mail address: [philipp.jud@medunigraz.at](mailto:philipp.jud@medunigraz.at) (P. Jud).

<https://doi.org/10.1016/j.ejim.2018.05.007>

Received 2 March 2018; Accepted 5 May 2018

Available online 10 May 2018

0953-6205/ © 2018 European Federation of Internal Medicine. Published by Elsevier B.V. All rights reserved.



**Fig. 1.** a Abdominal computed tomography (frontal plane) showing massive hepatomegaly with a 'kissing liver and spleen sign' (red arrows). Black arrows point toward periportal halos as a sign of hepatic fluid accumulations due to the secondary venous congestion of the hepatic veins. b Abdominal computed tomography (axial plane) with a 'kissing liver and spleen sign'. The left hepatic lobe abuts the spleen (red arrows). Black arrows point toward periportal halos. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

#### Conflict of interest

All authors declare no conflict of interest.

#### Funding

This research received no specific grant from any funding agency.

#### References

- [1] Rubenfire M, Bayram M, Hector-Word Z. Pulmonary hypertension in the critical care setting: classification, pathophysiology, diagnosis, and management. *Crit Care Clin* 2007;23(4):801–34.
- [2] Saner FH, Heuer M, Meyer M, et al. When the heart kills the liver: acute liver failure in congestive heart failure. *Eur J Med Res* 2009;14(12):541–6.