

# AMSER Case of the Month

## September 2022

32-year-old with two months of cough and fever

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**VCU**Health™

VCU Medical Center



# Patient Presentation

- **HPI:** 32-year-old female presents with 2-month history of cough, subjective fever, chills, nausea, vomiting, and 10lb unintended weight loss
- **PMHx:** Asthma
- **Social Hx:** Polysubstance abuse
- **Vitals:** T 39°C, HR 132, BP 130/91, RR 20, SpO2 94% ORA
- **Labs:** WBC 14.1 (nml 4.5-11.0)

What Imaging Should We Order?

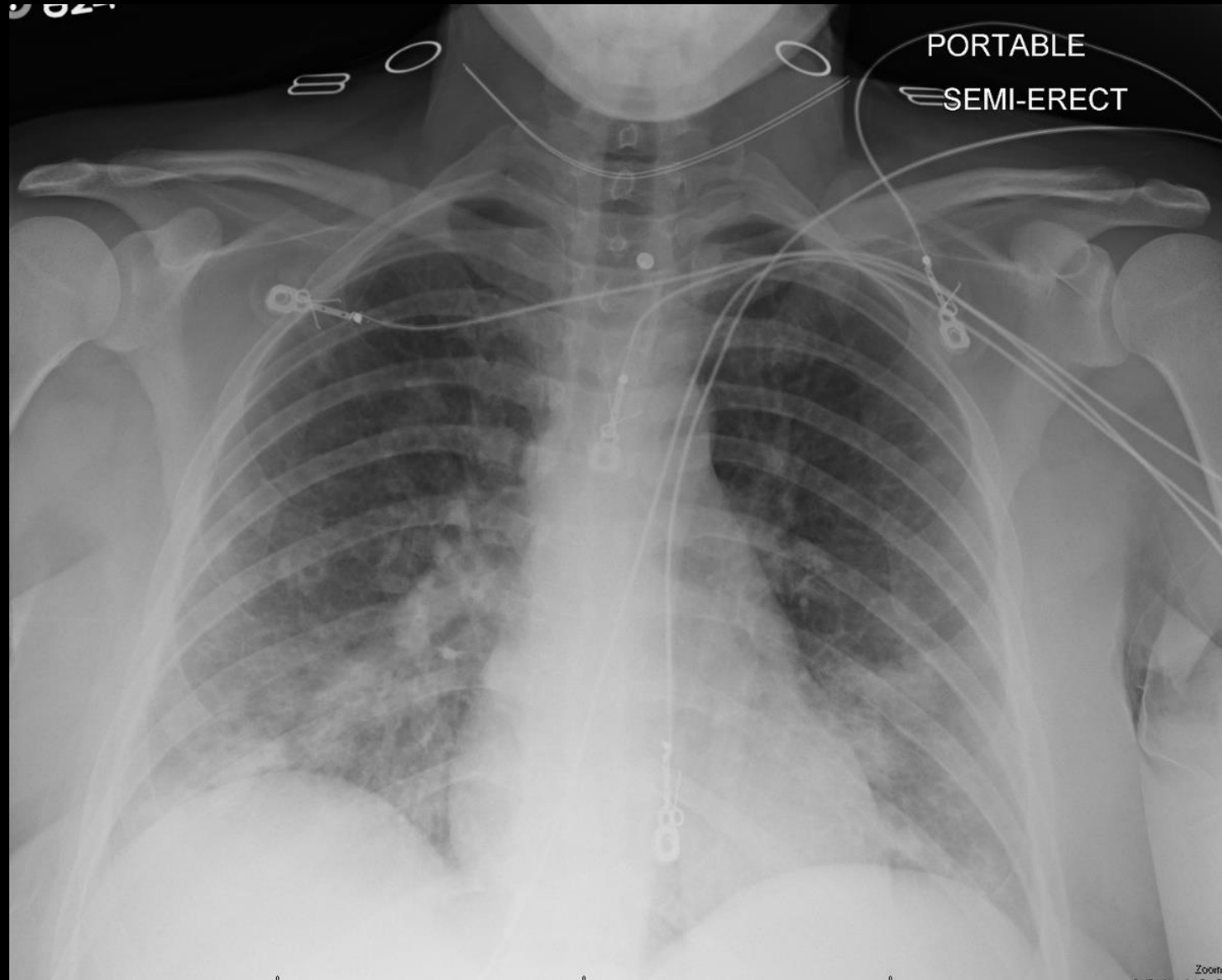
# Select the applicable ACR Appropriateness Criteria

**Variant 2:** Acute respiratory illnesses in immunocompetent patients with positive physical examination, abnormal vital signs, organic brain disease, or other risk factors. Initial imaging.

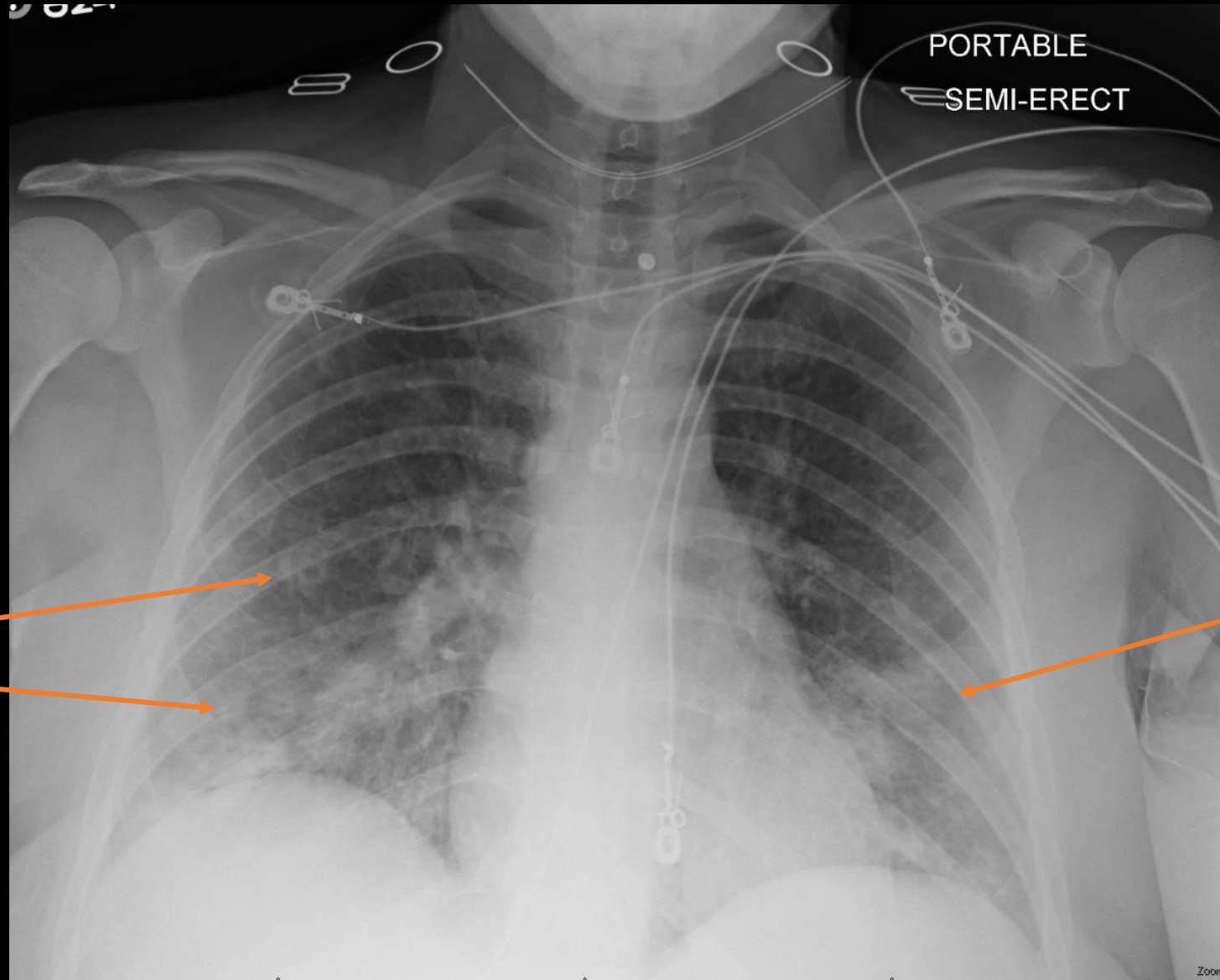
Procedure	Appropriateness Category	Relative Radiation Level
Radiography chest	Usually Appropriate	☼
US chest	May Be Appropriate	○
CT chest with IV contrast	Usually Not Appropriate	☼ ☼ ☼
CT chest without and with IV contrast	Usually Not Appropriate	☼ ☼ ☼
CT chest without IV contrast	Usually Not Appropriate	☼ ☼ ☼
MRI chest without and with IV contrast	Usually Not Appropriate	○
MRI chest without IV contrast	Usually Not Appropriate	○

This imaging modality was ordered by the ER physician

# Findings (unlabeled)



# Findings (labeled)



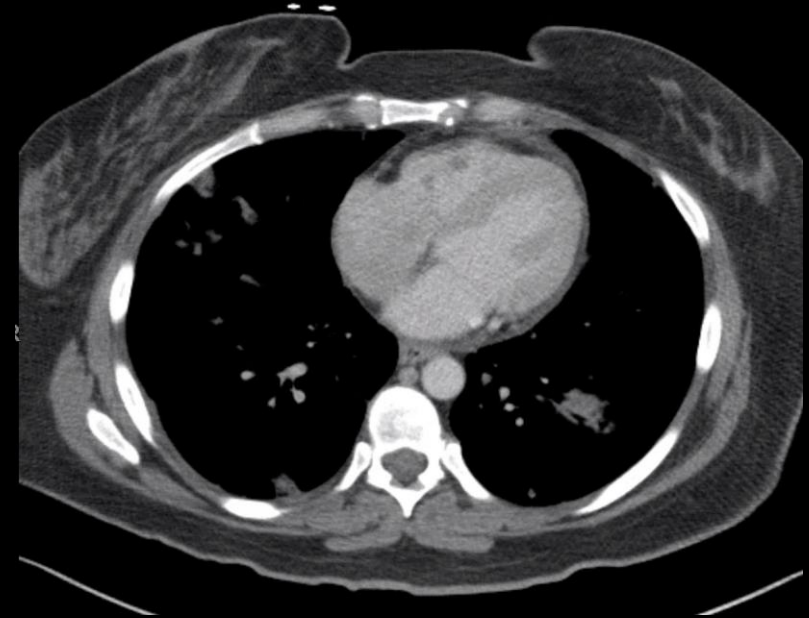
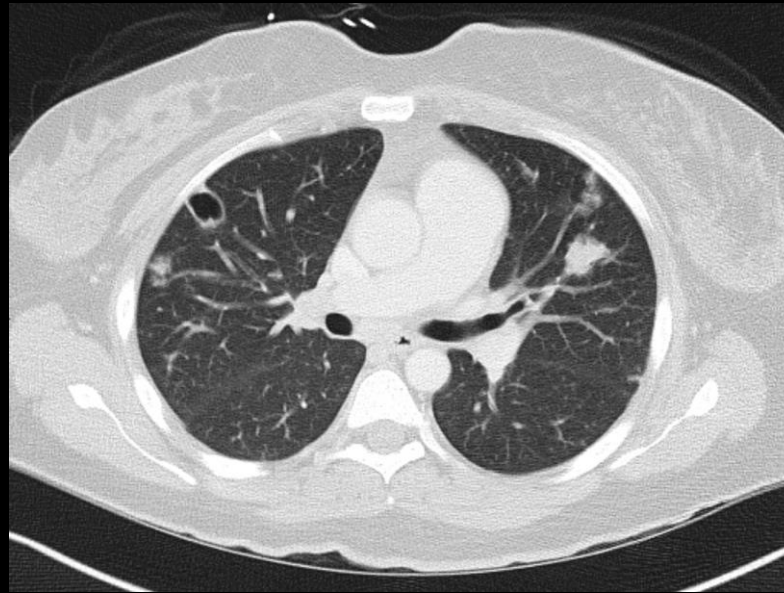
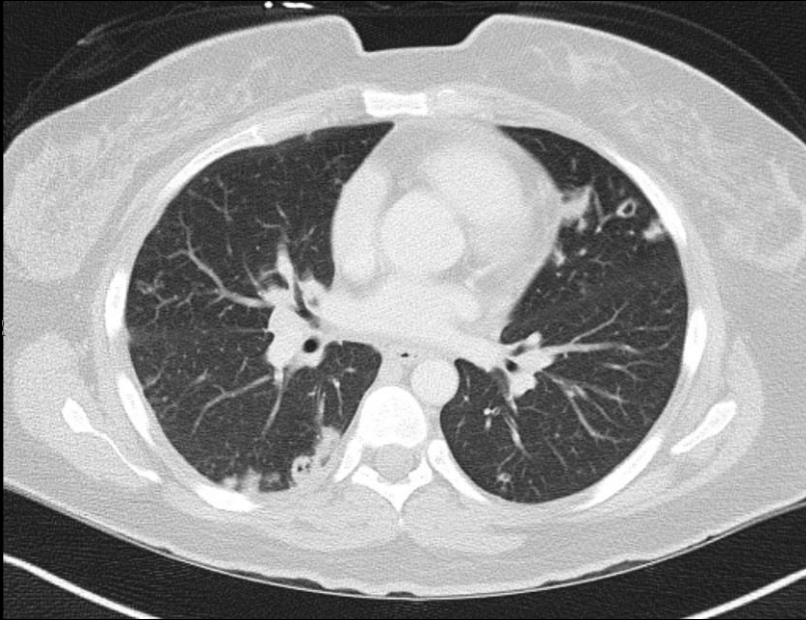
PORTABLE  
SEMI-ERECT

Multiple cavitary  
nodules

Diffuse bilateral  
infiltrates

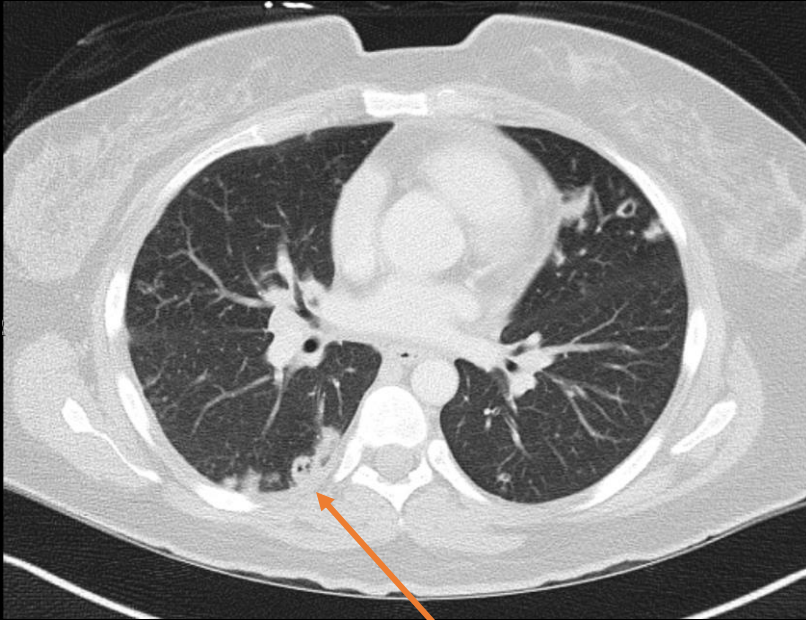
# Findings (unlabeled)

A Chest CT was Ordered

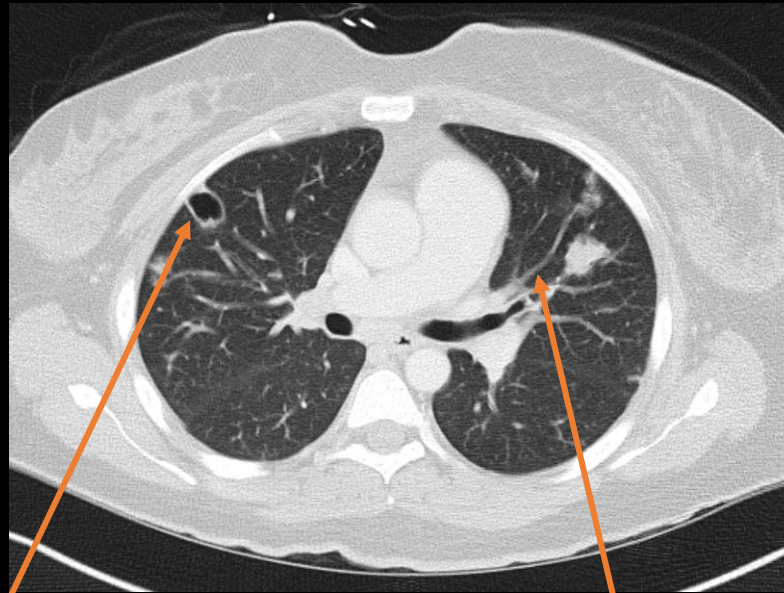


# Findings (labeled)

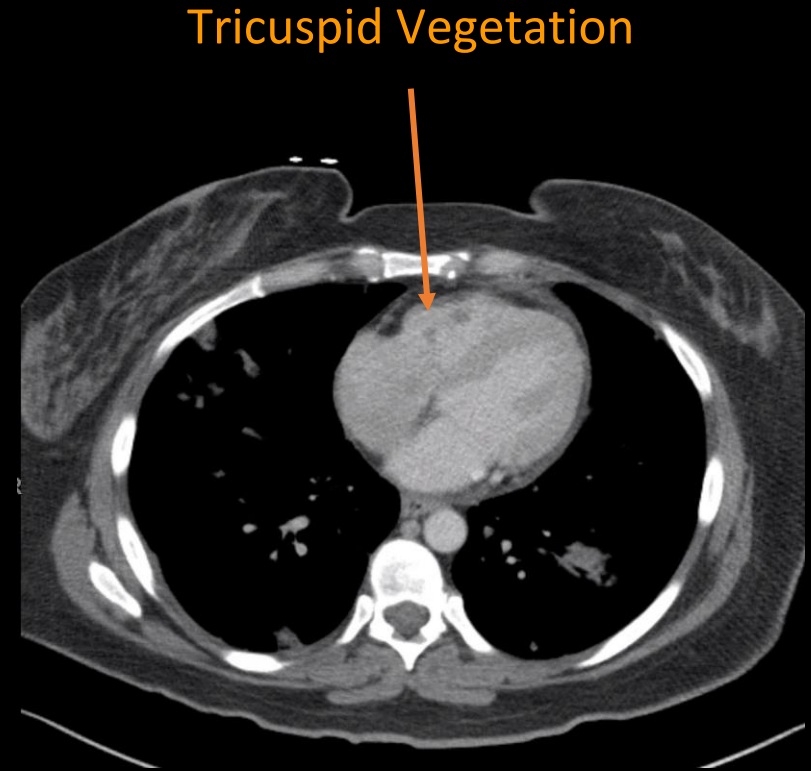
A Chest CT was Ordered



Multiple Cavitary Lesions



Feeding Vessel Sign



Tricuspid Vegetation



**Final Dx:**

Infected Endocarditis with Pulmonary Septic Emboli

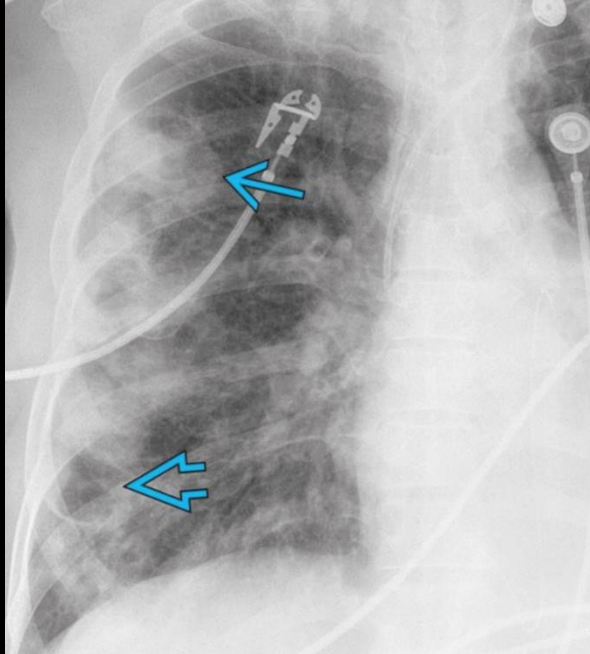
# Case Discussion: Septic Emboli

- Differential diagnosis: Pneumonia (Fungal, Bacterial, Mycoplasma), Vasculitis, Cavitory Pulmonary Metastases
- Infected embolic material embolized via the pulmonary arteries, typically extrapulmonary and most commonly from the tricuspid valve
- Most common organism is *Staph aureus*
- Risk factors include right heart endocarditis, osteomyelitis, IV drug use, intravascular catheters or devices, alcoholism, and immunodeficiency

# Case Discussion: Imaging Findings

- **Imaging Findings**

- Multiple bilateral lung nodules predominantly in the lower lobes and periphery of the lungs, with varying degrees of cavitation (blue arrows).
- May have ground-glass halo sign due to hemorrhage (purple arrow)
- Feeding vessel sign (red arrow)



## References:

- Statwicki SP, Firstenberg MS, Lyaker MR, et al. Septic embolism in the intensive care unit. *int J crit Illn Inj Sci.* 2013;3(1):58-63
- Ufuk F, Kaya F, Sagtas E, Kupeli A. Non-thrombotic pulmonary embolism in emergency CT. *Emergency Radiology.* 2020; 27:343-350.
- Abdrabou, A. Septic pulmonary emboli. Case study, Radiopaedia.org (accessed on 22 Jun 2022)  
<http://doi.org/10.53347/rID-23250>