AMSER Case of the Month
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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

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<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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<tbody>
<tr>
<td>Radiography chest</td>
<td>Usually Appropriate</td>
<td>⚫</td>
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<tr>
<td>US chest</td>
<td>May Be Appropriate</td>
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<tr>
<td>CT chest with IV contrast</td>
<td>Usually Not Appropriate</td>
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<td>CT chest without and with IV contrast</td>
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<td>CT chest without IV contrast</td>
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This imaging modality was ordered by the ER physician.
Diffuse bilateral infiltrates

Multiple cavitary nodules
Findings (unlabeled)

A Chest CT was Ordered
Findings (labeled)

A Chest CT was Ordered

Multiple Cavitary Lesions

Feeding Vessel Sign

Tricuspid Vegetation
Final Dx:

Infective Endocarditis with Pulmonary Septic Emboli
Case Discussion: Septic Emboli

- Differential diagnosis: Pneumonia (Fungal, Bacterial, Mycoplasma), Vasculitis, Cavitary 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: