Masquerading Dyspnea – A Hidden Pulmonary Embolism
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CLINICAL HISTORY
69 Year Old Female - Shortness of Breath / Chronic Cough
- Onset: 45 min. of severe dyspnea
- 1 week shortness of breath
- EMS arrival
- Context: 4 days prior – pneumonia diagnosis
- Urgent care - “spot on lung” Started on Z-Pak and Augmentin
- Symptoms: Mild thoracic back pain, cough, can’t catch breath, nausea and vomiting

PHYSICAL EXAM
- Overall: Ill appearing, in extremis, severely hypoxic, struggling to breath
- Vitals: HR 123, BP 107/61, RR 21, POx 66% NRB
- HEENT: No sore throat
- Cardiac: Tachycardia, no murmurs
- Pulm: CTA bilateral
  - Mild rhonchi LUL
  - No cracks, no wheezing
  - Resonant to percussion
- GI: Soft, nontender, nondistended
- Ext: No peripheral edema, equal in size
- Skin: Well healing surgical hysterectomy incision

VIRCHOW’S TRIAD
3 categories that contribute to thrombosis
- Stasis of blood flow
  - Postoperative bedrest
- Endothelial injury
  - Surgical tissue damage
- Hypercoagulability
  - Uterine cancer

WORKUP

<table>
<thead>
<tr>
<th>CBC</th>
<th>BMP</th>
<th>Ur Legionella pneumophila</th>
<th>Mycoplasma pneumoniae IgM Antibody</th>
<th>Ur Streptococcus pneumoniae</th>
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<tbody>
<tr>
<td>11.8</td>
<td>15.2</td>
<td>46.4</td>
<td>470</td>
<td>Neg</td>
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<tr>
<td>136</td>
<td>98</td>
<td>10</td>
<td>265</td>
<td>Neg</td>
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<tr>
<td>3.9</td>
<td>24</td>
<td>0.77</td>
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</tbody>
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EKG: Sinus tachycardia

IMAGING

Urgent Care Chest X-Ray (4 days prior)

- LUL small patchy infiltrate/mass, 2.5 cm

ED Portable Chest X-Ray

- LUL dense wedge-shaped infiltrate
- “Hampton’s Hump”

ED CTA Chest
- Extensive bilateral pulmonary embolism
- Left sided pulmonary congestion and infarct
- Dilation of right ventricle

2 Months Later
- Complete resolution

DISCUSSION
Pulmonary Embolism is an important cause of death in cancer patients

HAMPTON’S HUMP:
- Rare sign of pulmonary infarct
- Radiologic sign which consists of a shallow wedge-shaped opacity in the periphery of the lung, most frequently seen laterally
- This along with the Westermark sign helps aid diagnosis of PE
- The Westermark sign is an area of focal oligemia and is present in only 2% of PE

RV OVERLOAD:
- Severe flattening on interventricular septum
- Increased RV Volume
- Due to PE causing pulmonary hypertension
- Elevates troponin and BNP

CLINICAL MANIFESTATIONS:
10% of PE patients die within an hour of the event
- Severe dyspnea
- Pleuritic chest pain
- Chronic Cough
- Tachycardia

ACUTE INTERVENTIONS:
- Intravenous thrombolysis
- Intravascular thrombolysis
- IVC Filter Placement

CLINICAL COURSE

EMERGENCY DEPARTMENT:
- Clinical deterioration requiring orotracheal intubation
- Severe hypoxic respiratory failure
- Suctioned white froth sputum with pulse oximetry improvement to 80%
- Received IV enoxaparin 1 mg/kg while in CT

INPATIENT:
- IV tPA given despite recent surgery
- Physicians discussed with family the risks
- Bilateral lower extremities negative for deep venous thrombosis
- Discharged – Hospital day #6 on rivaroxaban