Masquerading Dyspnea – A Hidden Pulmonary Embolism

Leah Colucci, B.S., William Korey, M.D. and Jennifer S. Jackson, M.D., FACEP

University of Miami Miller School of Medicine, Division of Emergency Medicine

Holy Cross Hospital

CLINICAL HISTORY

69 Year Old Female - Shortness of Breath / Chronic Cough

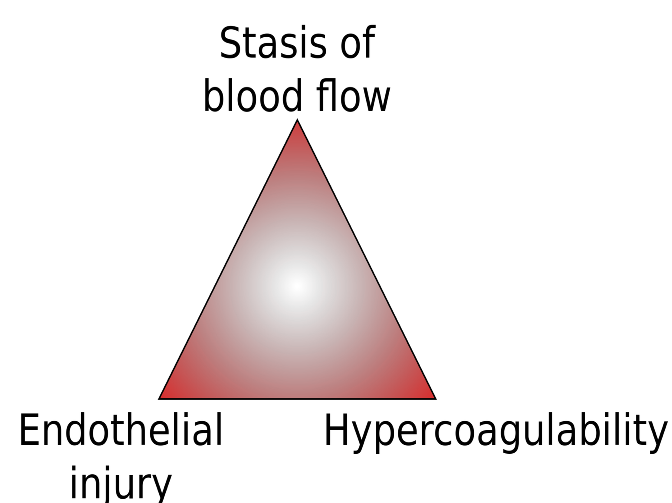
- **Onset :** 45 min. of severe dyspnea
  1 week shortness of breath
  EMS arrival
- **Context:** 4 days prior – pneumonia diagnosis
  Urgent care - "spot on lung"
  Started on Z- Pak and Augmentin
- **Symptoms:** Mild thoracic back pain, cough, can't catch breath, nausea and vomiting
- **PMH:** Hysterectomy for uterine cancer 3 weeks prior. Hypertension. On Aspirin daily.

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 crackles, 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

CBC: 11.8 > 15.2 / 46.4 < 470

BMP:

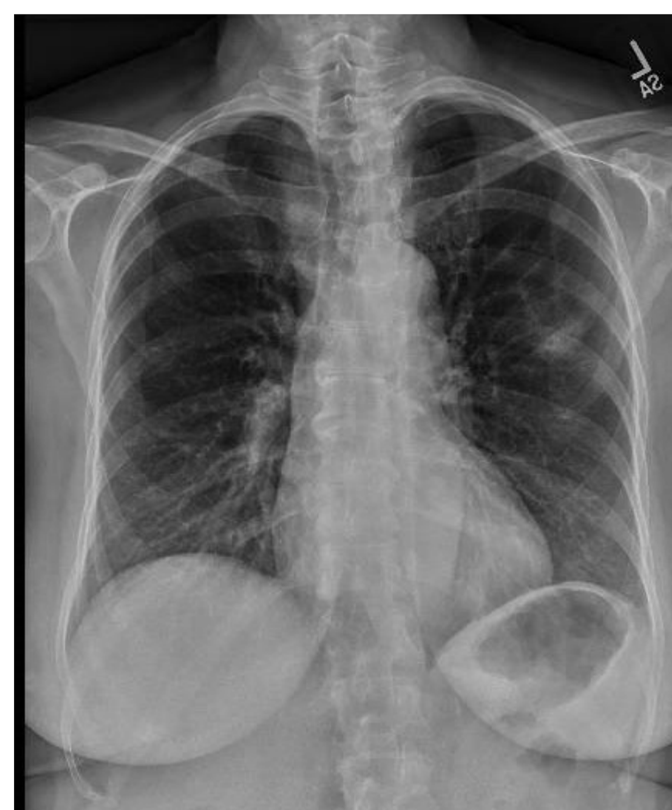
136	98	10	
3.9	24	0.77	265

EKG: Sinus tachycardia

Test	Result
Ur Legionella pneumophilia	Neg
Mycoplasma pneumoniae IgM Antibody	Neg
Ur Streptococcus pneumoniae	Neg

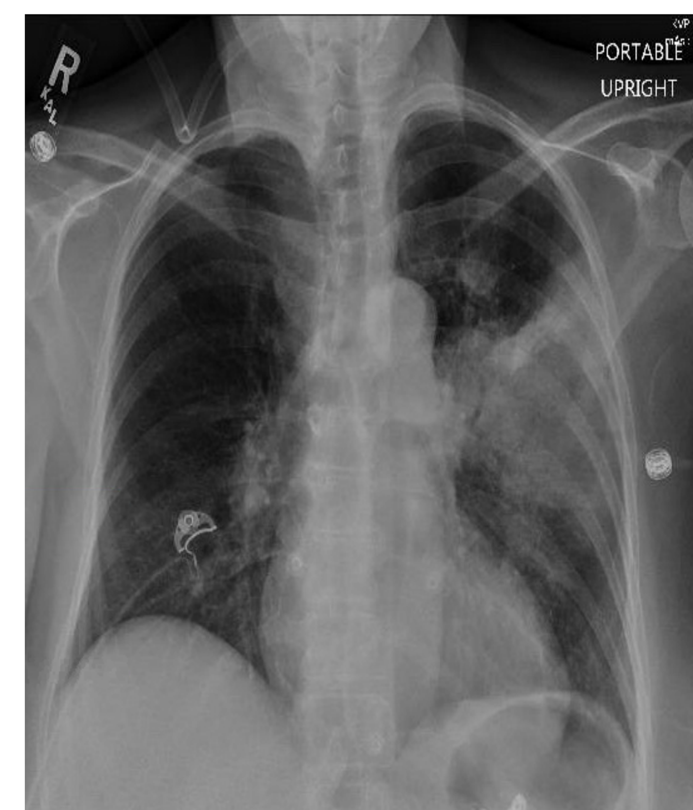
IMAGING

Urgent Care Chest X-Ray (4 days prior)

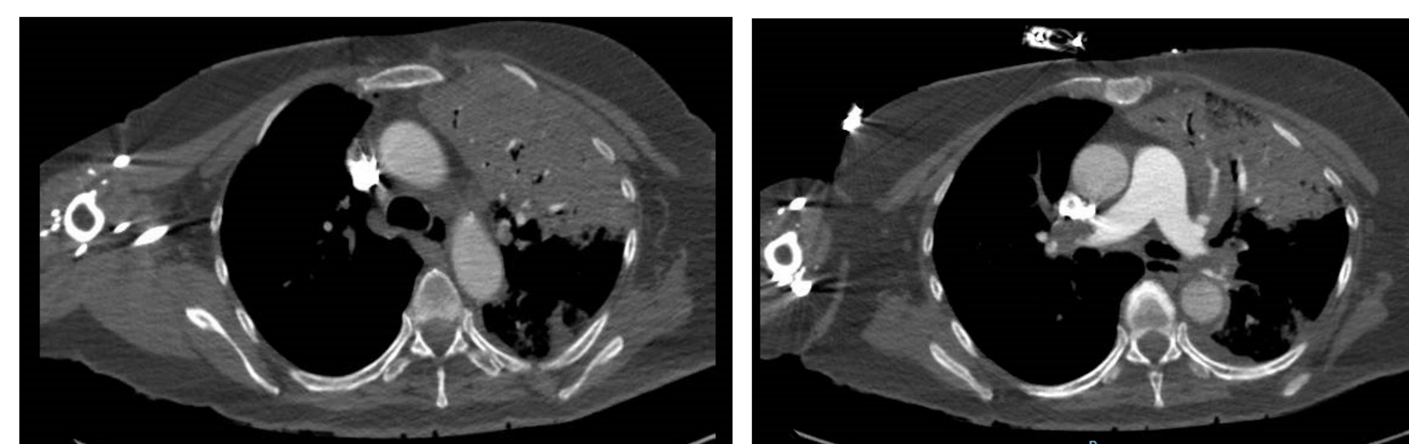


- LUL small patchy infiltrate/mass, 2.5 cm

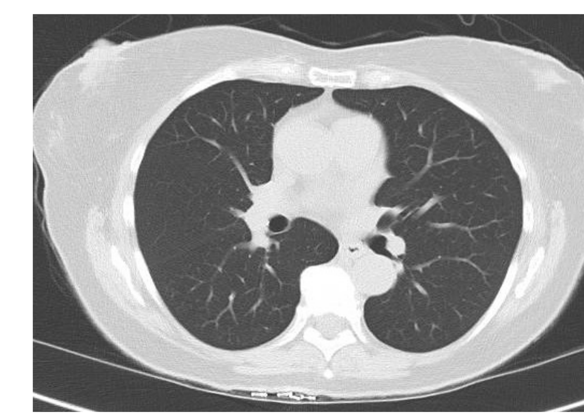
ED Portable Chest X-Ray



- 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

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

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
- Intraarterial thrombolysis
- IVC Filter Placement