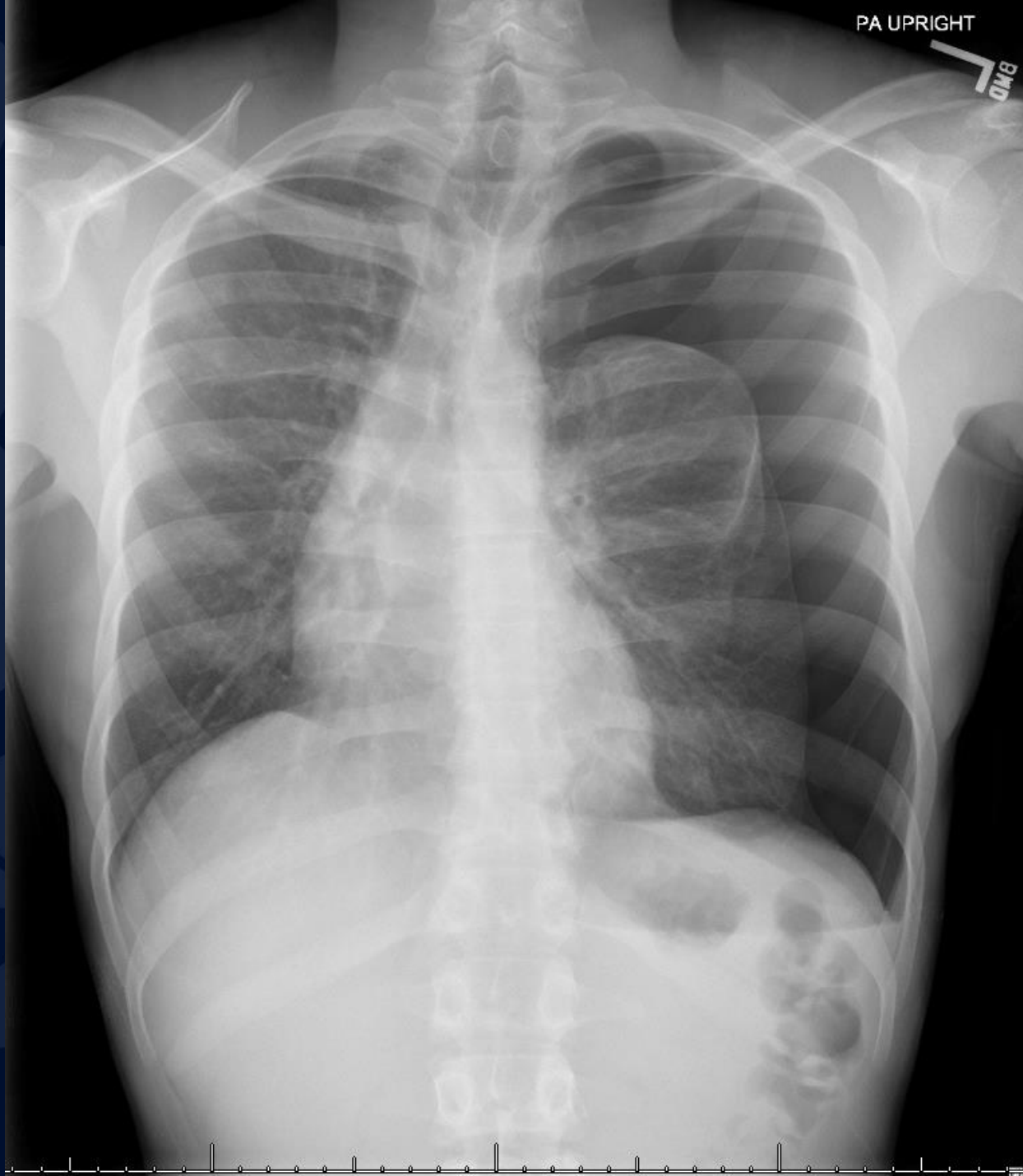


24 year-old male presents with  
shortness of breath. No trauma.

Ryan P. Joyce, MD



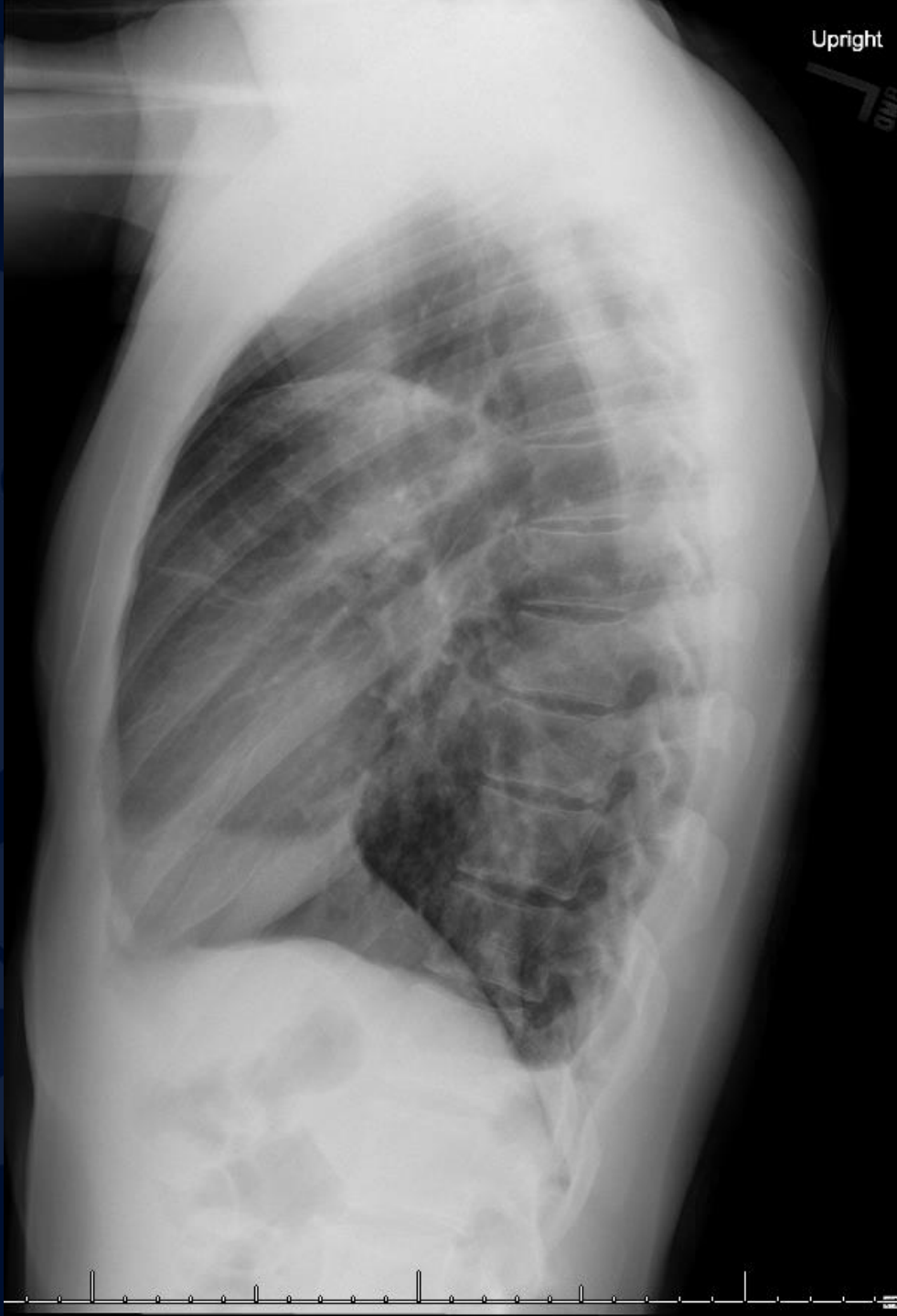
PA UPRIGHT

BMD

**UConn**  
**HEALTH**

RADIOLOGY

Upright



**UCONN**  
**HEALTH**  
RADIOLOGY

AP PORT  
~90° UP



**UConn**  
**HEALTH**

RADIOLOGY



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Primary  
spontaneous  
tension  
pneumothorax

# Primary spontaneous tension pneumothorax

Pneumothorax without precipitating event in an otherwise healthy patient.

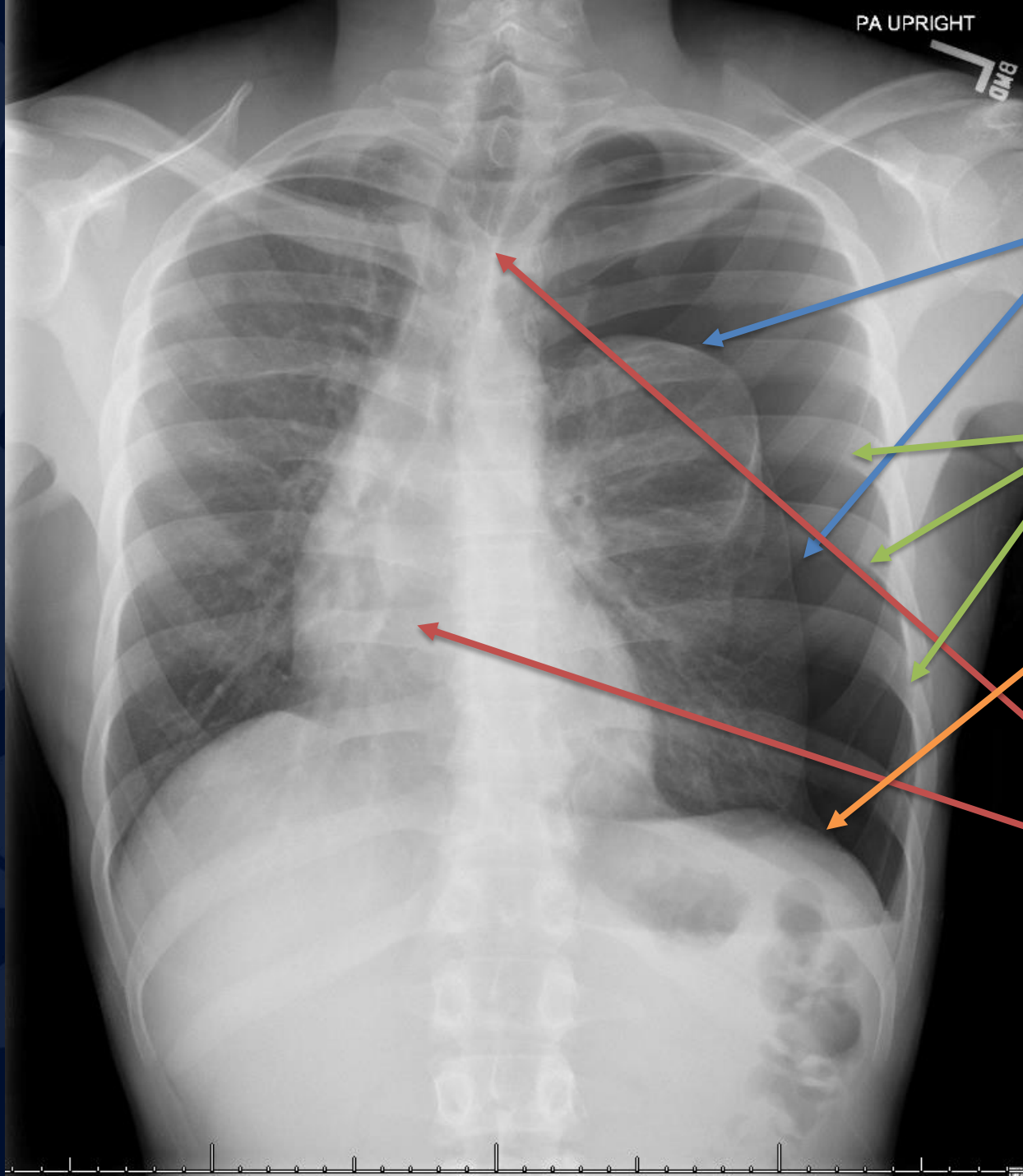
- Pneumothorax evidenced by a visible pleural line and lack of peripheral lung markings. Be aware of deep sulcus sign as well.
- Tension evidenced by mediastinal shift and tracheal deviation contralateral to pneumothorax, and ipsilateral diaphragmatic flattening and rib splaying.
- Small: <20% of hemithorax volume. Large: >20% hemithorax volume.
- Increased incidence in Marfan, Ehlers-Danlos, Birt-Hogg-Dube, and Cutis Laxa.
- Upright radiography usually diagnostic. Sometimes decubitus to help confirm. CT more sensitive.
- Patients present with chest pain and dyspnea.
- Usually affects young men (20-40 years), tall, thin patients.
- Treatment: Oxygen, chest tube, resection of bullae/blebs.
- Patients with PSP should avoid air travel for 6 weeks & scuba diving for life.

# Primary spontaneous tension pneumothorax

## Pneumothorax differential:

- PSP
- Iatrogenic
- Traumatic
- Secondary spontaneous pneumothorax (infection, malignancy, cystic lung disease, catamenial pneumothorax, asthma, bronchiolitis, cystic fibrosis, cavitory lesion).
- Mimics: skin folds, life support devices, pneumomediastinum.





PA UPRIGHT

BMD

Pleural margin

Ipsilateral rib splaying

Ipsilateral diaphragmatic flattening

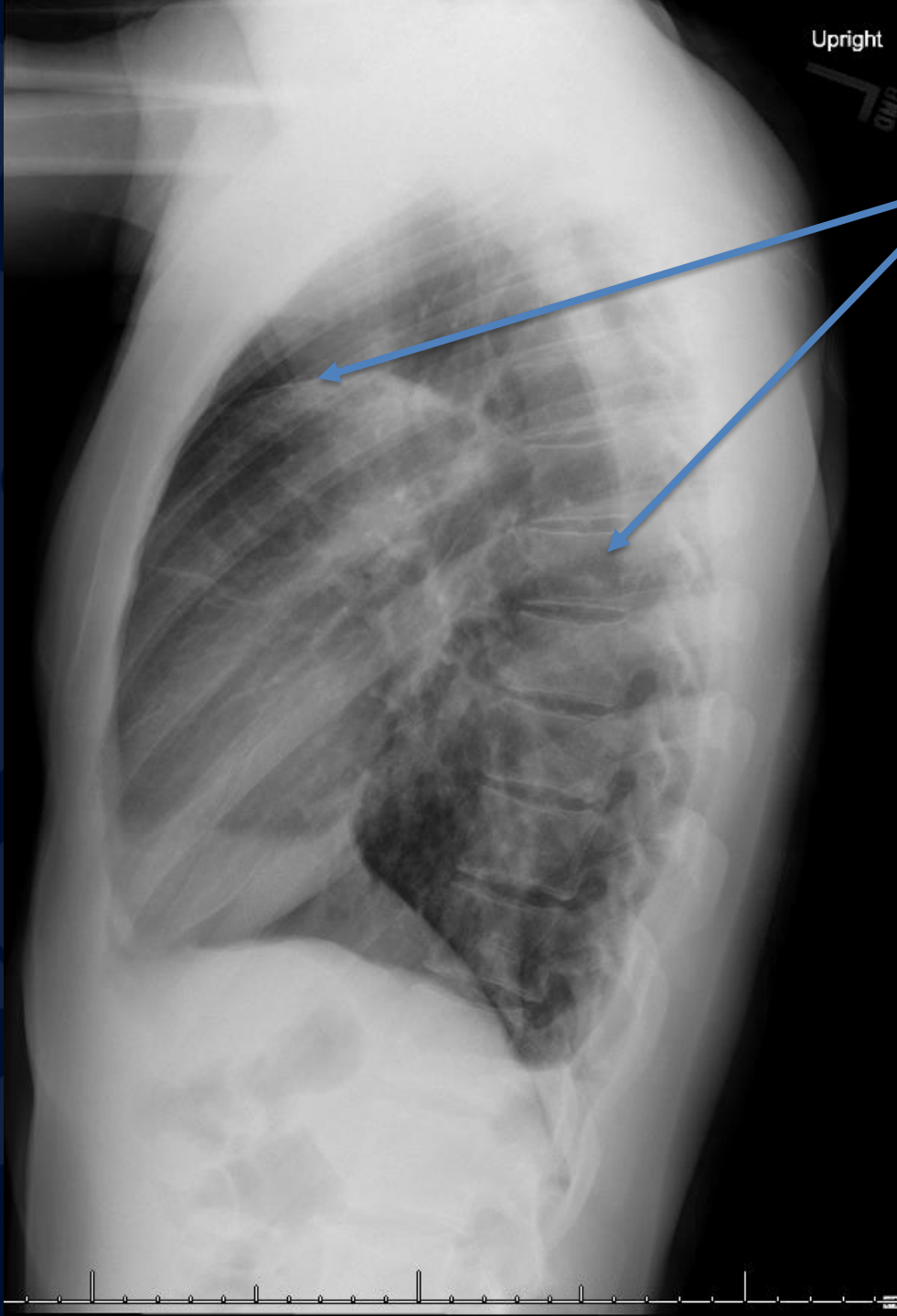
Tracheal deviation and mediastinal shift to the right

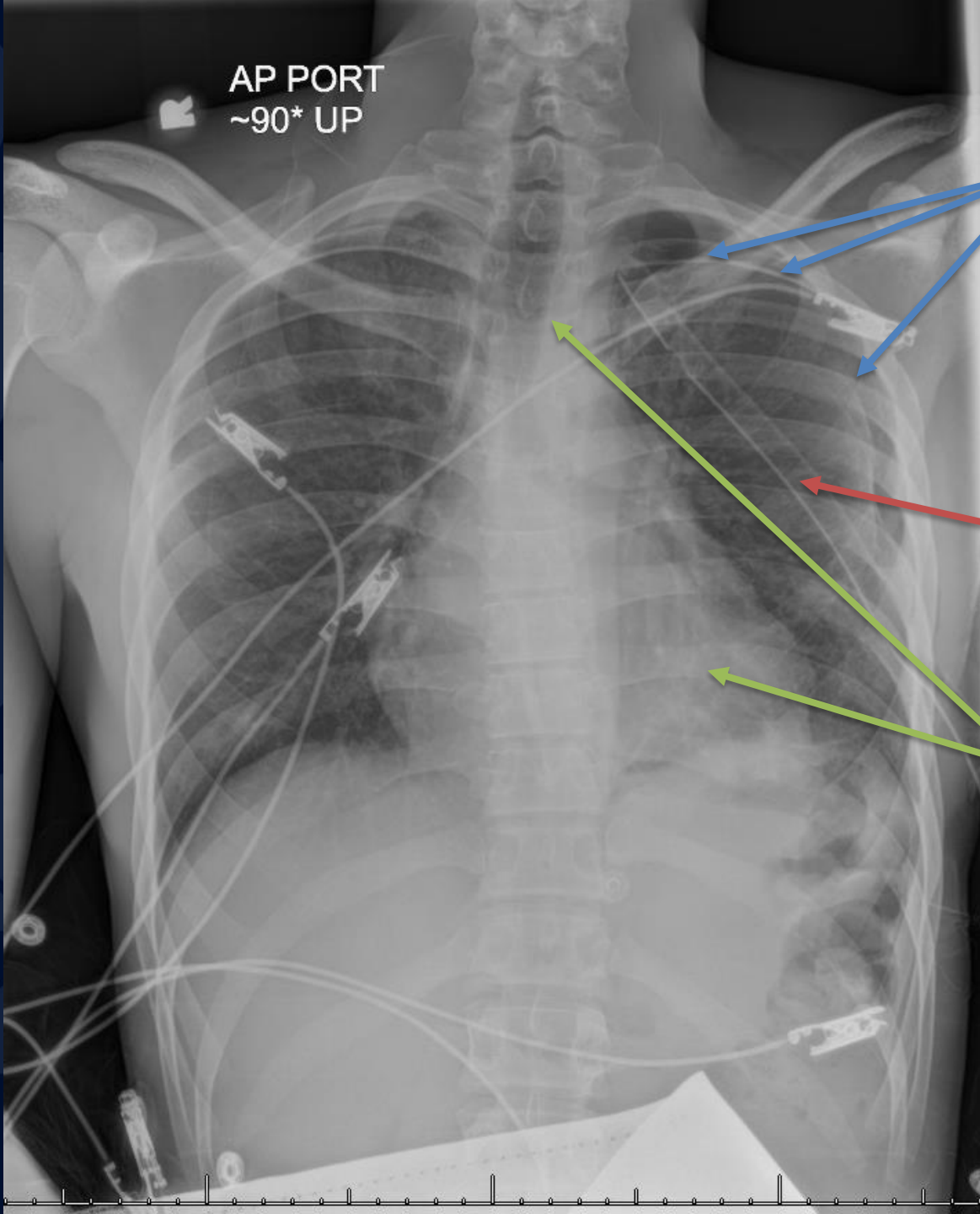
**UConn**  
**HEALTH**

RADIOLOGY

Upright

Pleural margin





AP PORT  
~90\* UP

Pleural margin

Chest tube

Improved  
mediastinal shift