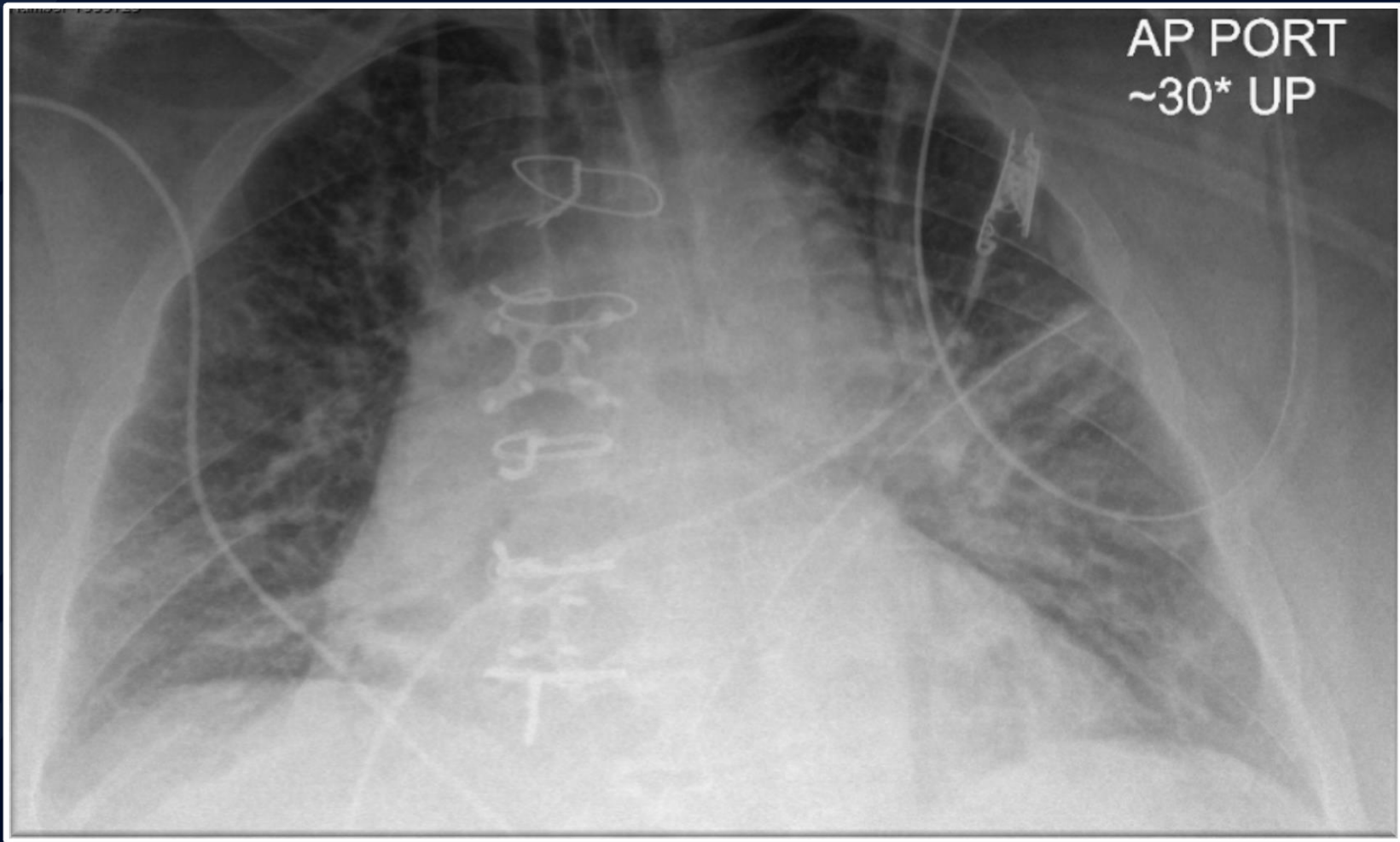


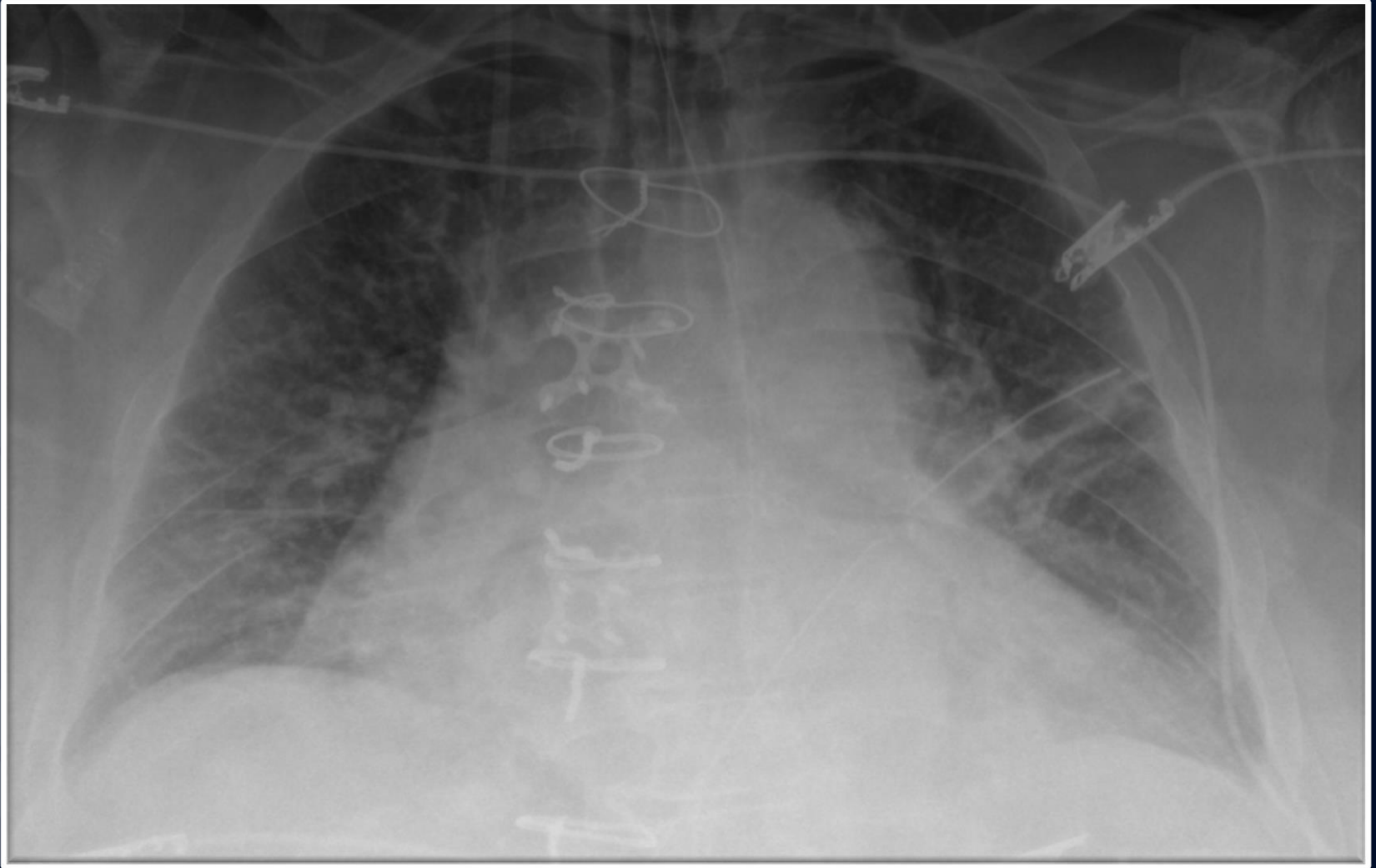
58 y/o M with lower lobe
crackles 4 days after CABG

Edward Gillis, DO

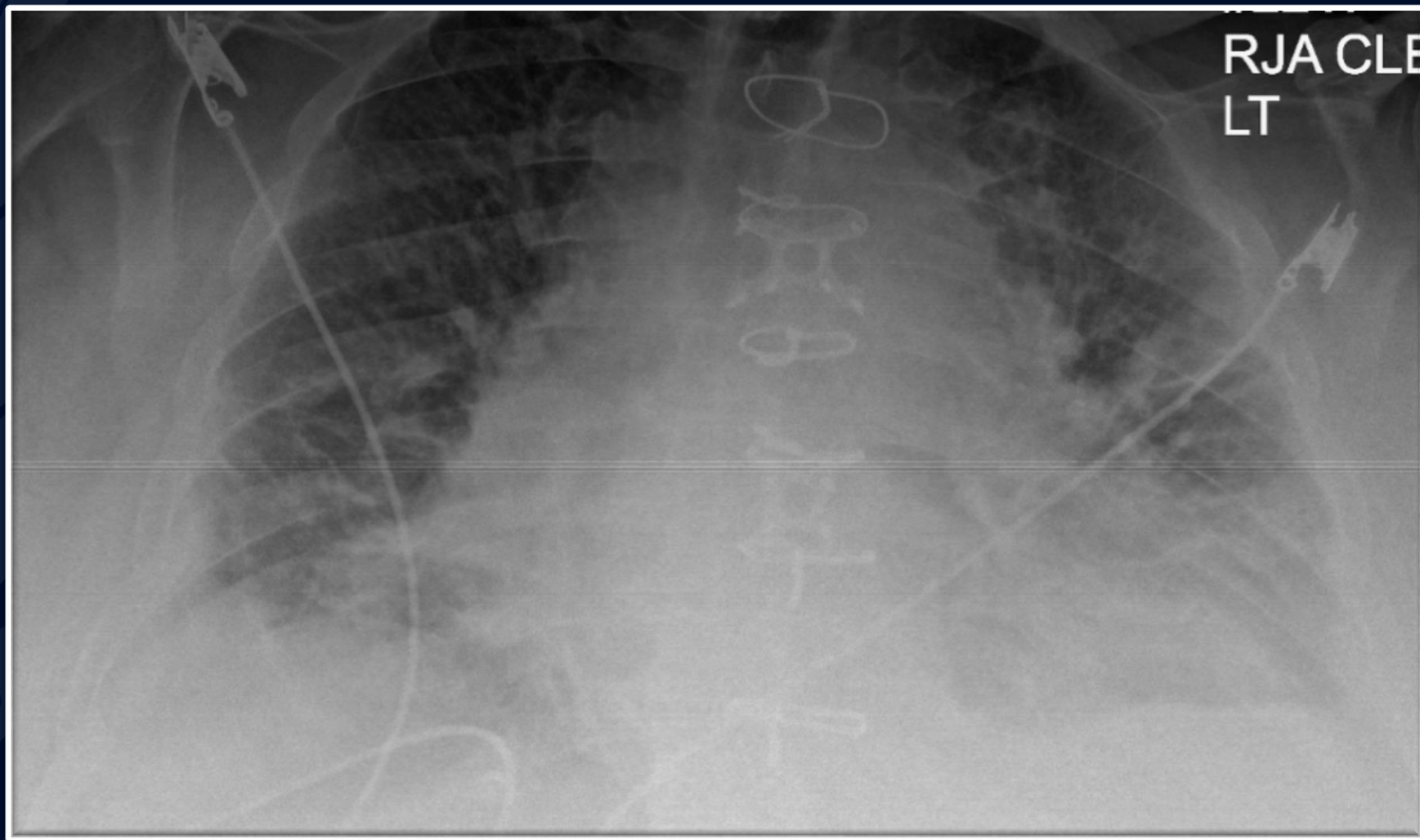
AP Radiograph taken post-op



AP Radiograph Taken 1 Day Post-op



On Presentation – 4 Days Post-op

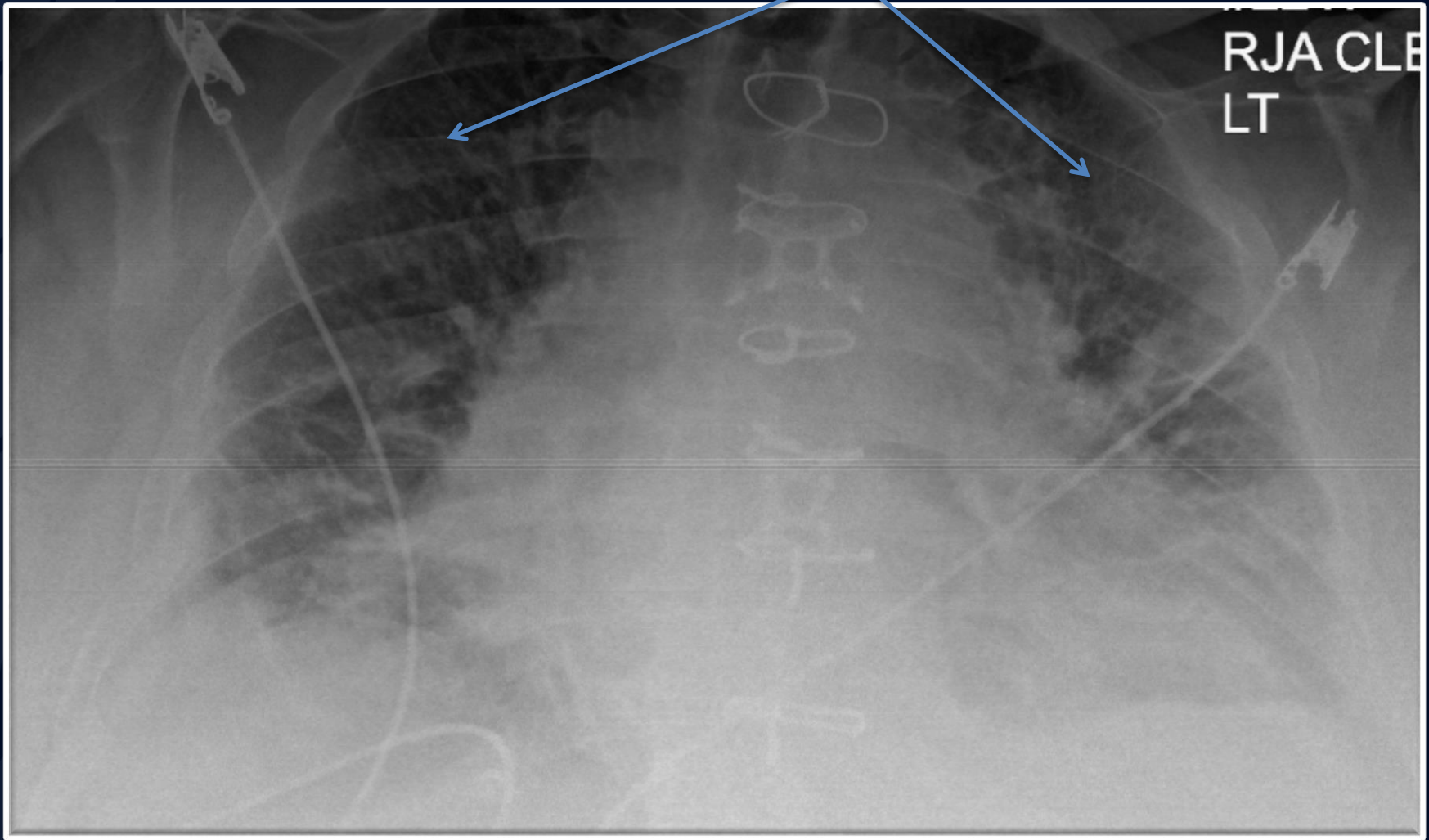




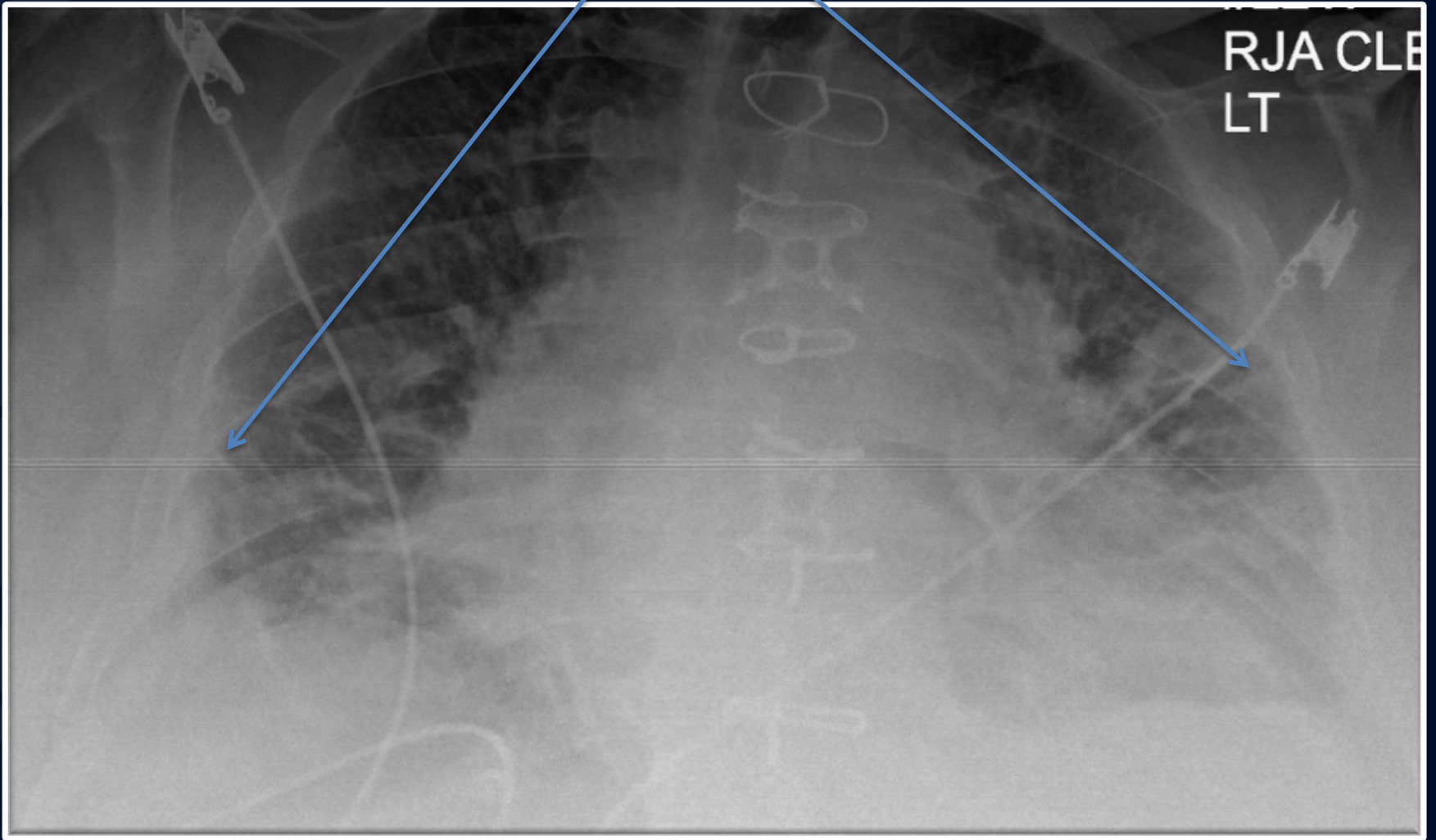
?

Pulmonary Edema Secondary to CHF

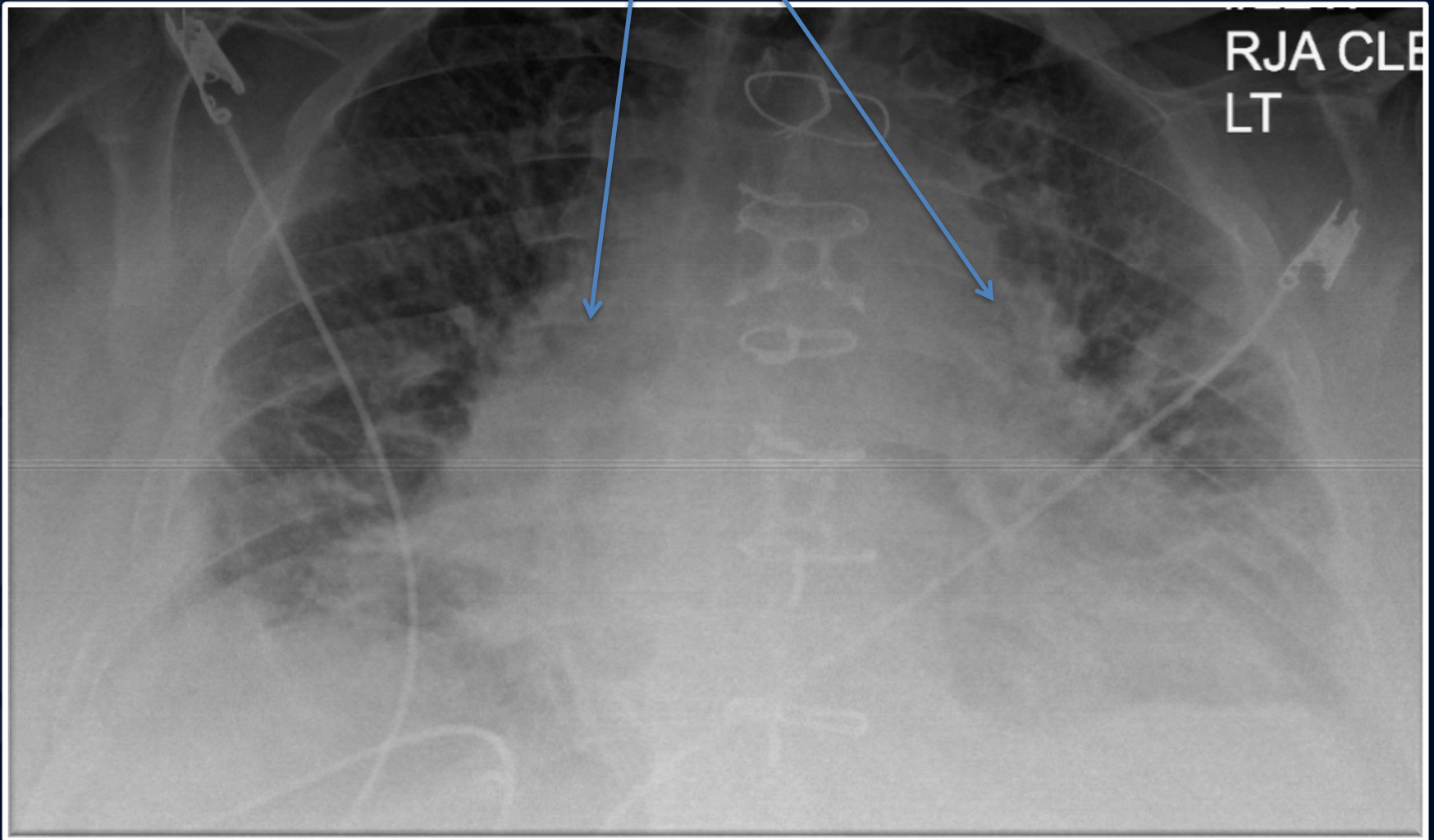
Increased Interstitial Markings



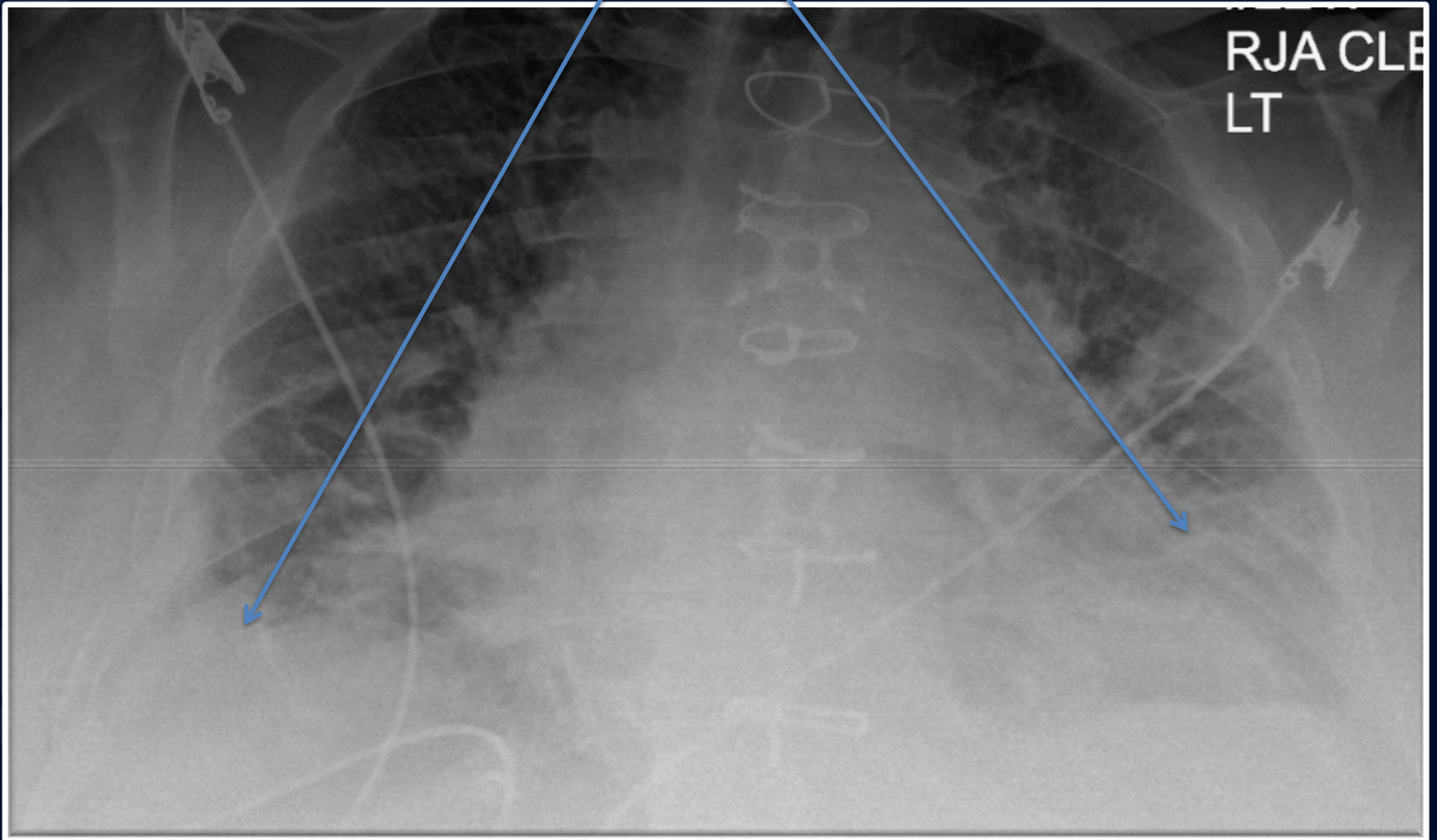
Kerley B Lines



Perihilar opacification with indistinct vasculature



Bilateral pleural effusions



Pulmonary Edema Secondary To CHF

Three Stages of Pulmonary Edema

- Vascular redistribution.
- Interstitial edema.
- Alveolar edema.

Pulmonary Edema

Vascular Redistribution

- Seen in pulmonary venous hypertension – chronic elevation of LA pressure
- Increased caliber of the upper lobe vessels compared to the lower lobe vessels.
- Vessels in the upper lobes are usually smaller than the lower lobe vessels.
 - Artery:Bronchus ratio = 0.85
 - At the hilum the ratio should be equal
 - In the lower lobes, the arteries are larger with a ratio of 1.35

Pulmonary Edema

Interstitial Edema

- Caused by increased fluid within the pulmonary veins.
- Fluid leaks into the interlobular and peribronchial interstitium
- Increased interstitial markings
- Indistinctness of the pulmonary vasculature
- Peribronchial cuffing – Fluid leakage into the peribronchovascular interstitium
- Kerley A, B and C lines – all represent thickened interlobular septa
 - Kerley B: peripheral lung, perpendicular to pleura
 - Kerley A: radiate from hila
 - Kerley C: overlapping of A and B lines

Pulmonary Edema

Alveolar Edema

- Alveoli fill with fluid as the continued fluid accumulation cannot be compensated by lymphatic drainage
- Perihilar opacifications are present
- Can see pleural effusions and cardiomegaly
- Usually symmetric and dependent

Pulmonary Edema

- Three basic types
 - Cardiogenic (hydrostatic)
 - Fluid overload
 - Hydrostatic
 - Decreased intravascular oncotic pressure (hypoalbuminemia, hepatic or renal failure)
 - Increased capillary permeability (ARDS)
- Widened vascular pedicle width is associated with the first two types

References

- Gluecker, Thomas, et al. “Clinical and Radiologic Features of Pulmonary Edema.” *RadioGraphics*, vol. 19, no. 6, 1999, pp. 1507–1531., doi:10.1148/radiographics.19.6.g99no211507.