Diffuse Alveolar Damage

- Acute interstitial pneumonia
- ARDS
- Transfusion-related acute lung injury (TRALI)
  - It tends to occur within 6 hours after a blood transfusion and requires exclusion of other alternative diagnoses such as sepsis or volume overload.

Acute interstitial pneumonia

- Idiopathic interstitial pneumonia characterized by rapidly progressive respiratory failure of unknown etiology with histologic features of diffuse alveolar damage (DAD)
- Hamman-Rich syndrome
- DDX:
  - *Pneumocystis jirovecii* pneumonia
  - ARDS
  - Acute exacerbation of interstitial lung disease
  - Hydrostatic pulmonary edema
  - Diffuse alveolar hemorrhage

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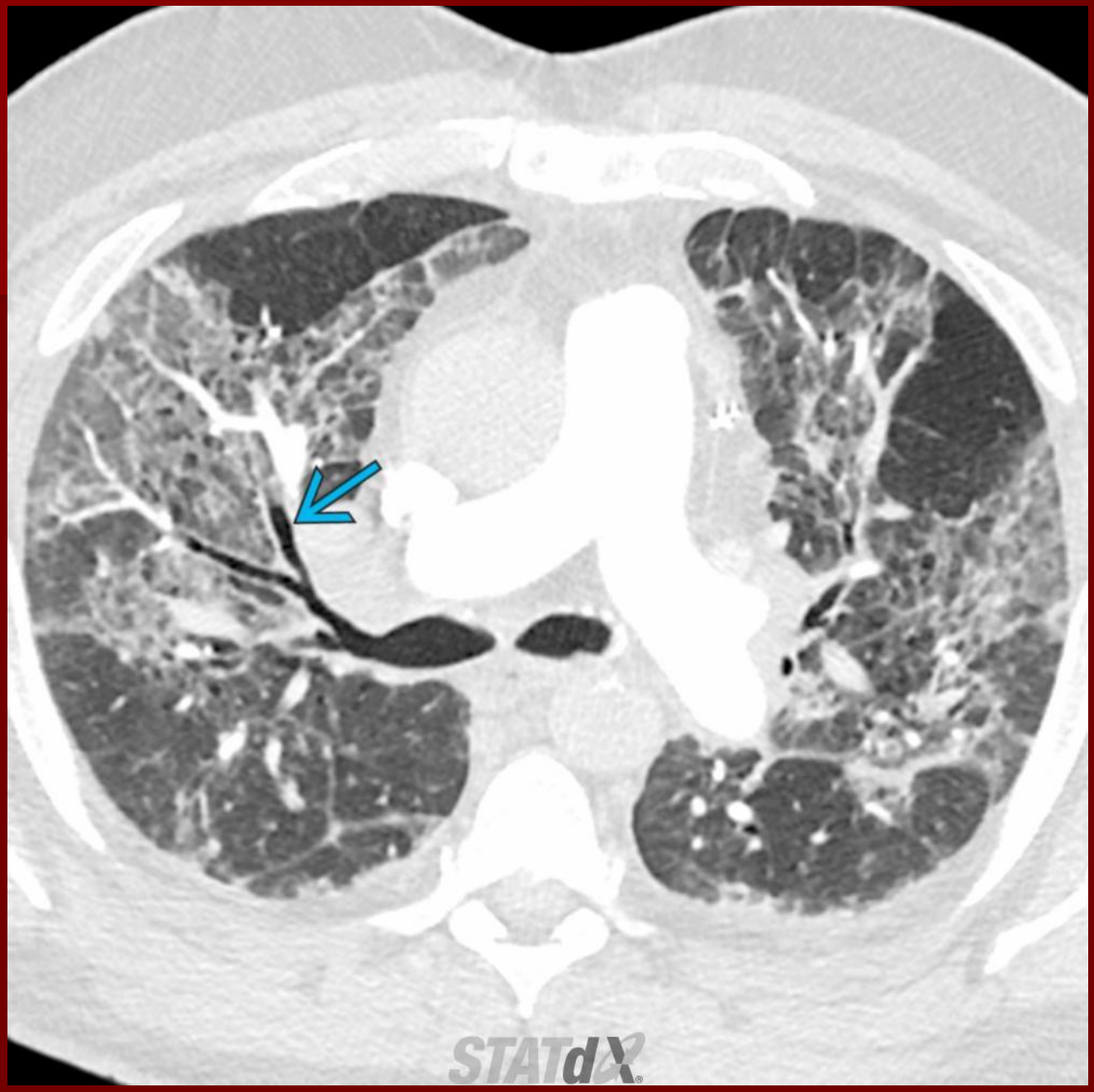
- Acute onset of respiratory symptoms resulting in severe hypoxia and in most cases acute respiratory failure
- Bilateral pulmonary opacities on chest radiography
- Absence of identifiable etiology (e.g., infection, connective tissue disease, trauma, congestive heart failure, drug toxicity, etc.)
- Histologic documentation of DAD

ARDS and AIP

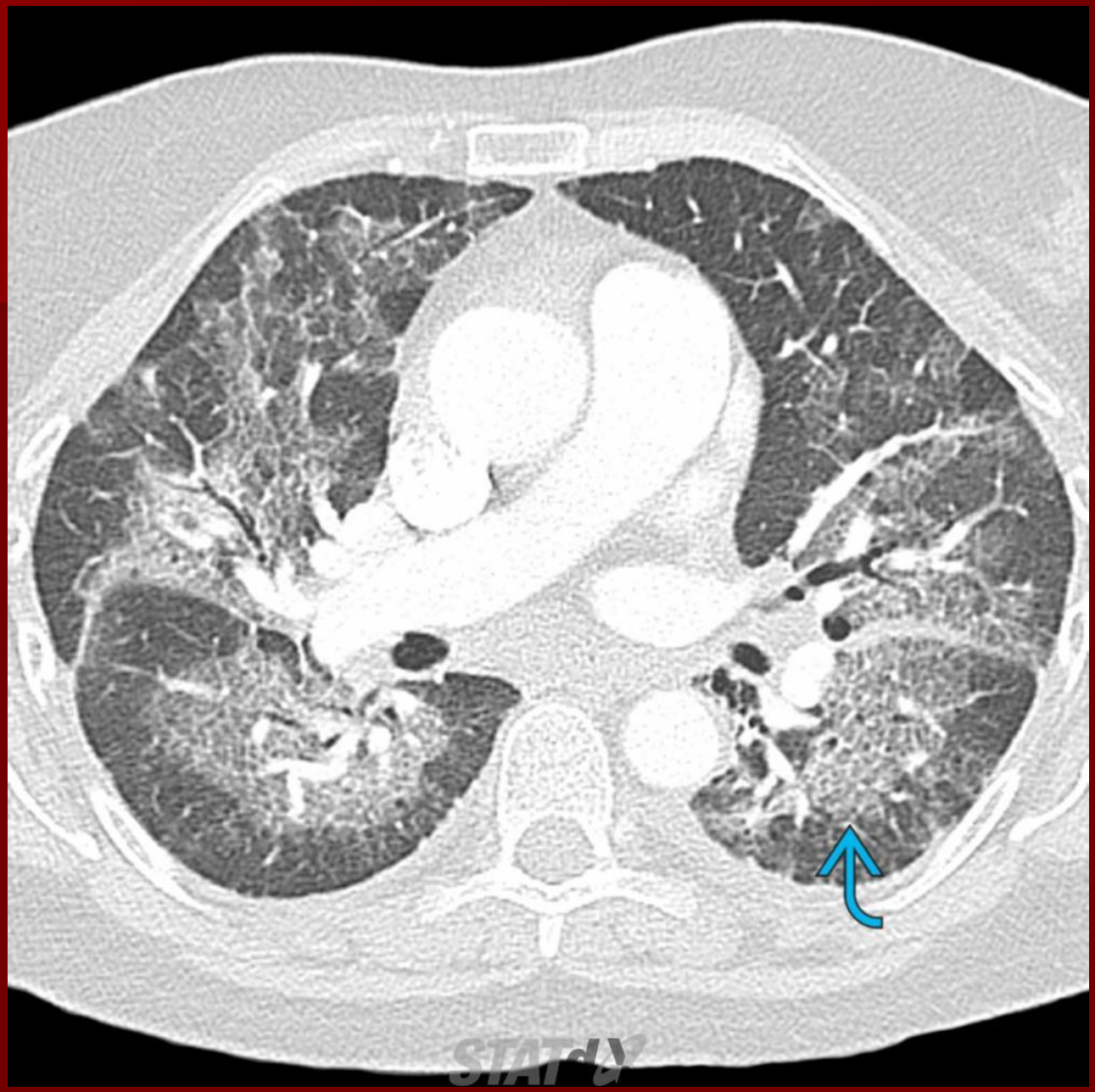
- ARDS and AIP are not equivalent:
- AIP is an idiopathic form of ARDS, but not all patients with ARDS have AIP
- ARDS is defined clinically based on following criteria
  - Acute onset, within 7 days of defined event (e.g., sepsis, pneumonia, etc.)
  - Ratio of partial pressure of arterial oxygen to fraction of inspired oxygen (PaO2:FIO2) ≤ 200 mm Hg
  - Bilateral pulmonary opacities on chest radiography or CT
  - Abnormalities not fully explained by cardiac failure or fluid overload based on clinical parameters

Classic pattern

- Radiography: Diffuse heterogeneous opacities involving all lung lobes
- CT: Extensive symmetric ground-glass opacities associated with traction bronchiectasis



Axial CECT of the same patient shows "crazy paving" and bronchiectasis (cyan solid arrow). Acute interstitial pneumonia is not a pathologic diagnosis but requires documentation of histologic findings of diffuse alveolar damage, absence of an identifiable etiology, presence of acute symptoms, and pulmonary opacities on radiography.



Axial CECT of the same patient shows extensive diffuse bilateral ground-glass opacities on a background of interlobular septal thickening (crazy-paving pattern) (cyan curved arrow). Note that the imaging appearance is similar to that of pulmonary edema, infection, and diffuse alveolar hemorrhage.

Consider AIP

- in patient with rapid onset of respiratory symptoms and respiratory failure in absence of identifiable cause or predisposing illness
- symmetric extensive ground-glass opacities on imaging