

## Background

- Pulmonary vein thrombosis is a rare but potentially lethal condition.
- While often observed in the setting of pulmonary malignancy and after lung surgery, it can also be idiopathic.
- Clinical diagnosis can be difficult as prevalence is very low, and its presentation is often nonspecific.

## Case Presentation

- A 68-year-old presented with four weeks of fever, chills, shortness of breath and dyspnea on exertion and two days of hemoptysis and right-sided chest pain.
- Vitals signs were normal, without hypotension, tachycardia or hypoxia.
- Physical examination was notable for bibasilar rhonchi.



Image 1: CT angiogram demonstrating eccentric clot within the left lower lobe pulmonary vein.

### Labs:

- WBC 14.1x1000/uL (4.41-10.05)
- INR 1.4 (0.84-1.11)
- D-dimer 936ng/mL (<215-500)
- SARS-CoV-2 PCR: negative

### Imaging:

- CXR was notable for an ill-defined inhomogeneous consolidation across the right upper lobe
- CTA chest was negative for pulmonary embolism, but notable for an eccentric clot within the left lower lobe pulmonary vein (*Image 1*), as well as a 4.7cm subpleural mass in the right upper lobe and additional nodules in the right middle and left upper lobes (*Image 2*)



Image 2: CT angiogram demonstrating subpleural mass in the right upper lobe.

### Pathology:

- Biopsies obtained via bronchoscopy were negative for malignancy.
- CT-guided biopsies 1 month after initial presentation showed patchy pneumocyte atypia and organizing pneumonia, which was more suggestive of inflammation than malignancy.

### Treatment:

- Patient was treated with oral anticoagulation for idiopathic pulmonary vein thrombosis.

### Follow Up:

- CT chest findings included significant interval improvement of RUL opacities and neat resolution of RML nodules.

## Conclusions

- Pulmonary vein thrombosis (PVT) is very rare and almost always associated with pulmonary malignancies, post lung surgery, or atrial fibrillation.
- Idiopathic pulmonary vein thrombosis is exceedingly rare.
- PVT can be asymptomatic, or present with nonspecific symptoms like cough, shortness of breath and hemoptysis.
- PVT can be associated with systemic embolic events, which makes a prompt diagnosis critical.
- Treatment options include systemic anticoagulation, thrombectomy, and pulmonary resection in refractory cases.

## References

- Barreiro TJ, Kollipara VK, Gemmel DJ. Idiopathic pulmonary vein thrombosis?. *Respirol Case Rep.* 2017;6(1):e00277. Published 2017 Oct 24. doi:10.1002/rcr2.277