

Great Cases

Clinical, Radiologic
& Pathologic Correlations
by Master Physicians

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Great Cases: Clinical, Radiologic and Pathologic Correlations by Master Physicians

Organized by the Council of Chapter Representatives

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CASE 1

The Case of the Labored Breath

Sarah Gorvetzian, MD, Denver, Colorado

A 35-year-old G2P1 woman at 17 weeks' gestation who recently emigrated from Kenya presents with right-sided pleuritic chest pain and dyspnea. She denied preceding weight loss, anorexia, fevers, or chills. Physical exam revealed a gravid abdomen and laboratory evaluation was unremarkable. Chest x-ray showed moderate pneumothorax with associated atelectasis. The patient failed conservative management and had recurrent pneumothorax despite placement of a pleural pigtail catheter. She was ultimately taken for a right-sided VATS procedure and diagnostic biopsy, which revealed multiple erythematous and friable lesions involving the visceral and parietal pleura, as well as the right hemi-diaphragm. A diagnostic procedure was performed. Biopsies of the lesions were sent for pathologic evaluation.



What is the most likely etiology of her pneumothorax?

- Pulmonary sequestration
- Metastatic hydatiform mole
- Ehlers-Danlos syndrome
- Ectopic deciduous tissue
- Metastatic choriocarcinoma

What is the best next step in management?

- Surgical resection of all identifiable lesions
- Hormonal suppression therapy
- Combination chemotherapy
- Genetic testing
- Prophylactic pleurodesis of contralateral lung



CASE 2

When You Hear Hoofbeats

Lucy Power, MB BCh, MRCPI, Dublin, Ireland

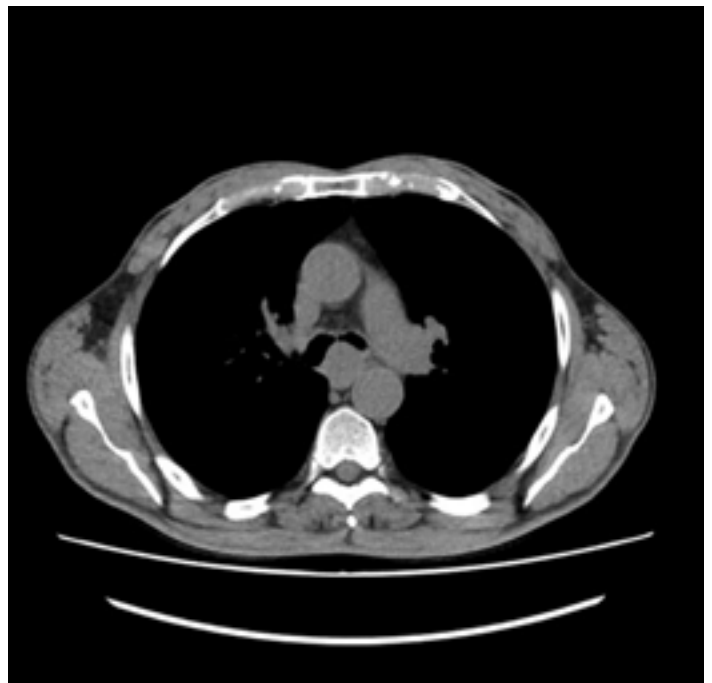
A 72-year-old male attended for annual clinical and imaging surveillance of a 6mm left upper lobe nodular opacity. His medical history was significant for COPD and acute myeloid leukemia 30 years prior which was treated with chemotherapy, whole body radiation and bone marrow transplant. He was a current smoker with a 50-pack year history. He was asymptomatic except a long-standing history of dyspnea on exertion relating to his COPD. Interval surveillance CT demonstrated a new 2cm soft tissue mass in the subcarinal region with mild effacement of the posterior airway. The LUL lesion was stable. The patient was initially referred for EBUS, but on endoscopic evaluation was escalated to urgent rigid bronchoscopy for diagnostic sampling and debulking.

Based on the pathology, what diagnosis should be excluded?

1. Sarcomatoid Carcinoma of the Lung
2. Large cell Neuroendocrine Carcinoma
3. Salivary Gland-Type Tumor
4. NUT Carcinoma
5. Thymoma

Which of the following is false in relation to this diagnosis?

1. Slow growing tumor
2. More common in the anatomical midline
3. Associated with a fusion oncogene
4. Pathological features of undifferentiated carcinoma or poorly differentiated squamous cell carcinoma



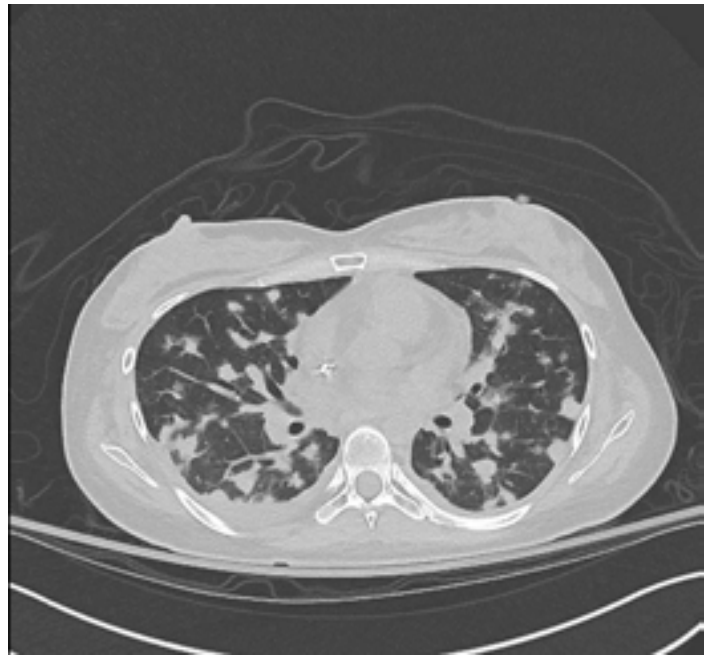
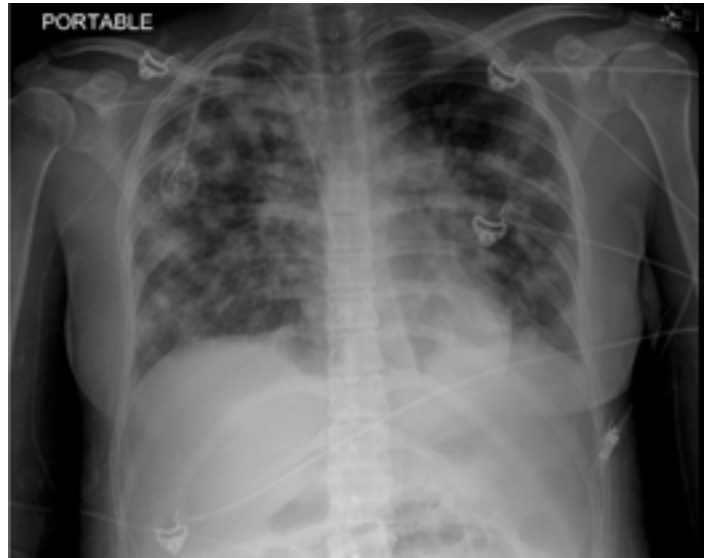
CASE 3

A Zebra Walks into the ICU

Mimi Richert, MD, Washington, DC

A 27 year-old woman with Hodgkin's Lymphoma,

status post allogeneic stem cell transplant two months prior, was admitted to the ICU with fever and hypoxia. Her hospital course had been complicated by GVHD-induced gastrointestinal bleeding for which she received tacrolimus, ruxolitinib, and methylprednisolone. At the time of ICU admission, she was on broad spectrum antimicrobials and antifungals. CT chest and sinuses showed worsening of scattered, diffuse peribronchovascular consolidations with surrounding ground glass opacities and moderate sinus mucosal inflammation. Bronchoscopy revealed scattered areas of friable mucosa and erythema, but BAL was without evidence of diffuse alveolar hemorrhage. Bacterial cultures were negative. Viral stain and fungal cultures were negative. BAL cytology and transcutaneous lung biopsy were performed.



1. **What is your diagnosis?**
 - a. Cryptogenic Organizing Pneumonia
 - b. Post-Transplant Lymphoproliferative Disorder
 - c. Disseminated Protozoan Infection
 - d. CMV Pneumonitis
 - e. Tuberculosis

2. **What would be an acceptable treatment regimen for this patient?**
 - a. Corticosteroids
 - b. Rituximab, Cyclophosphamide, doxorubicin, vincristine, and prednisone
 - c. Pentamidine, Fluconazole, and Miltefosine
 - d. Ganciclovir
 - e. Isoniazid, Rifampin, Pyrazinamide, and Ethambutol

Case 4

What if It's Not Just Air in There?

Prabhjot Sekhon, MD, New York, NY

A 14-year-old male with intermittent asthma and recent COVID-19 infection presented with sudden onset of breathlessness and was diagnosed with large left-sided spontaneous pneumothorax. Pneumothorax resolved 24 hours after pigtail catheter insertion (Image 1).

Four months after the initial presentation he presented again with subacute exertional dyspnea and left-sided chest pain. His exam was notable for limited movement of the left thorax with dullness to percussion at the base. Chest radiograph revealed loculated left mid-lateral pneumothorax with large opacity in the inferior left hemithorax. Contrast-enhanced computed tomography (CT) of the chest showed a left large hypoattenuating mass with mediastinal lymphadenopathy (Images 2a, 2b, and 2c).



What is the best next step in management?

- PET CT Imaging
- Thoracotomy for surgical resection
- Bronchoscopy
- VATS
- Thoracostomy tube placement

What is the most likely diagnosis?

- Empyema
- Tumor
- Hemothorax
- Pulmonary infarction
- Congenital lung malformation
- Diaphragmatic eventration
- Pneumonia

