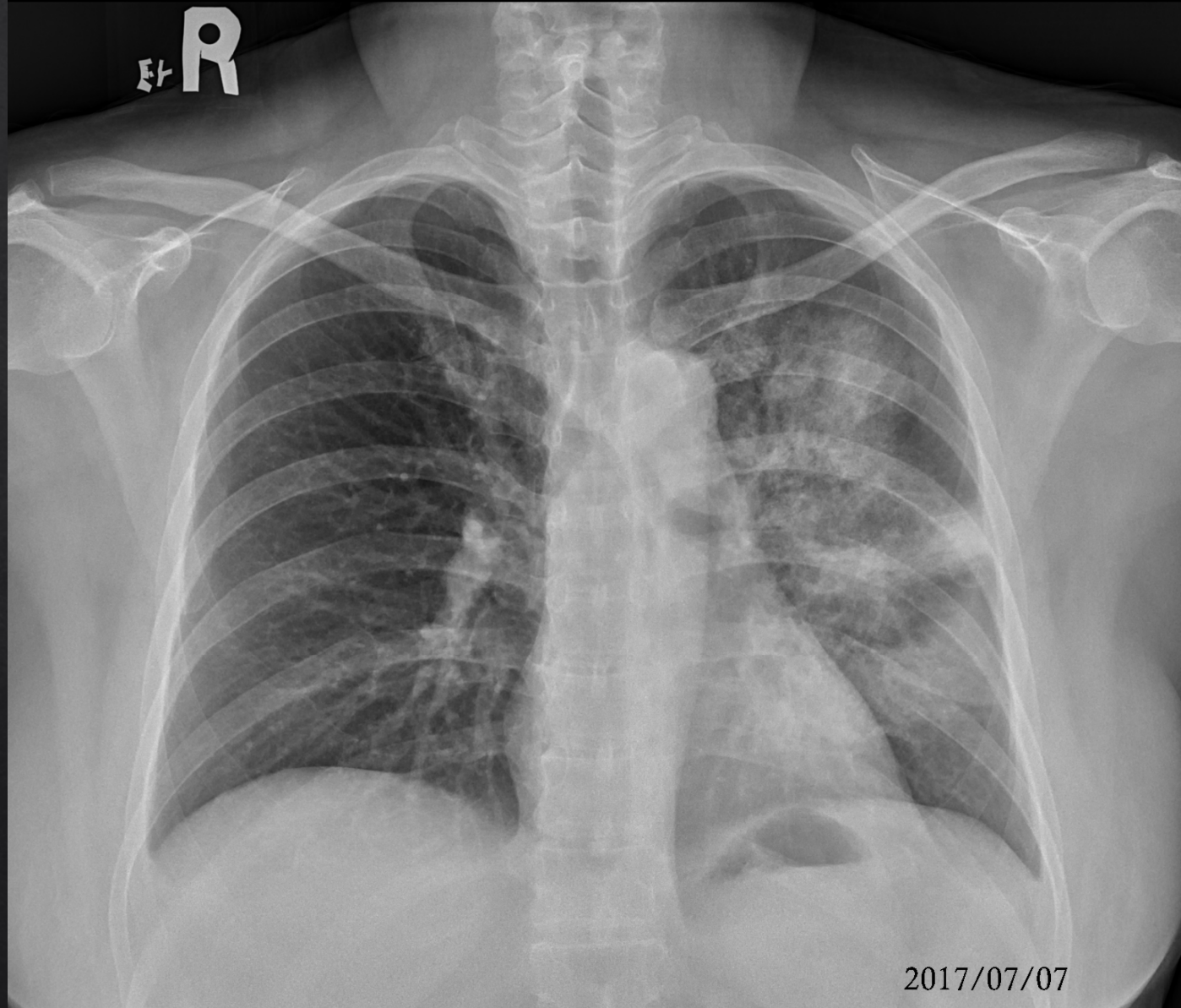
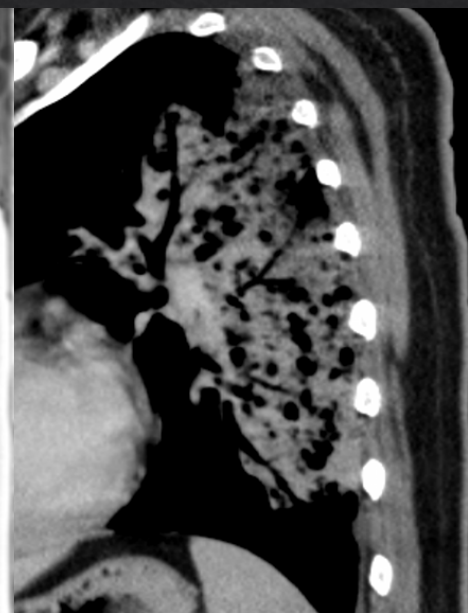
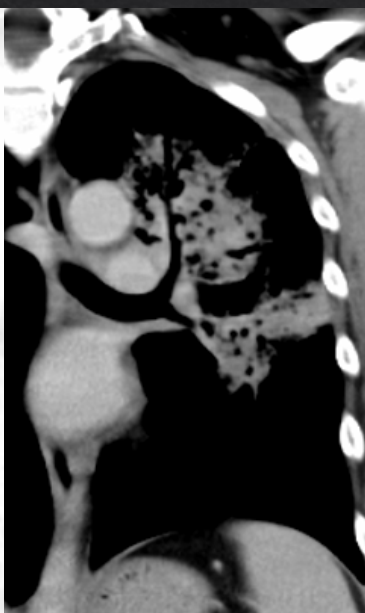
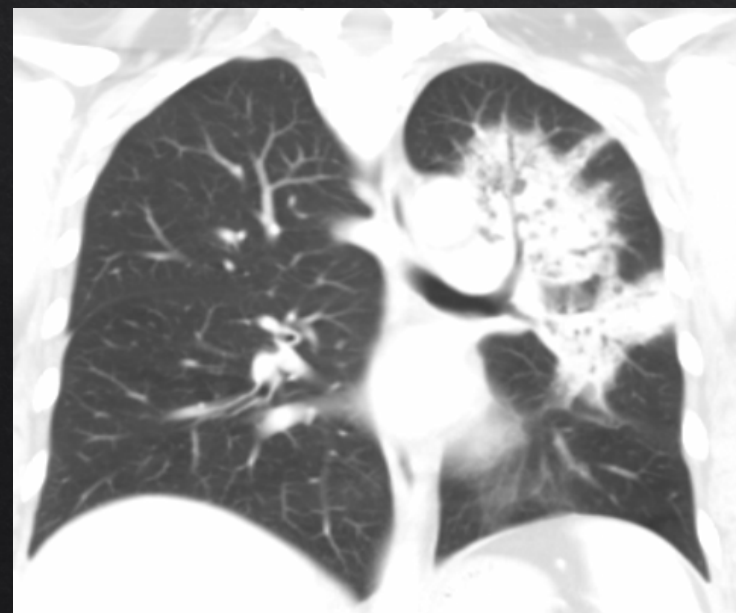
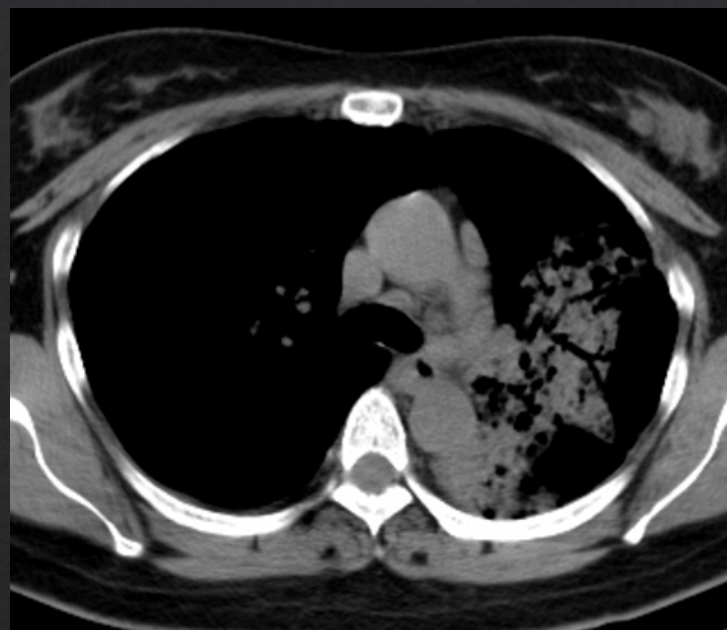
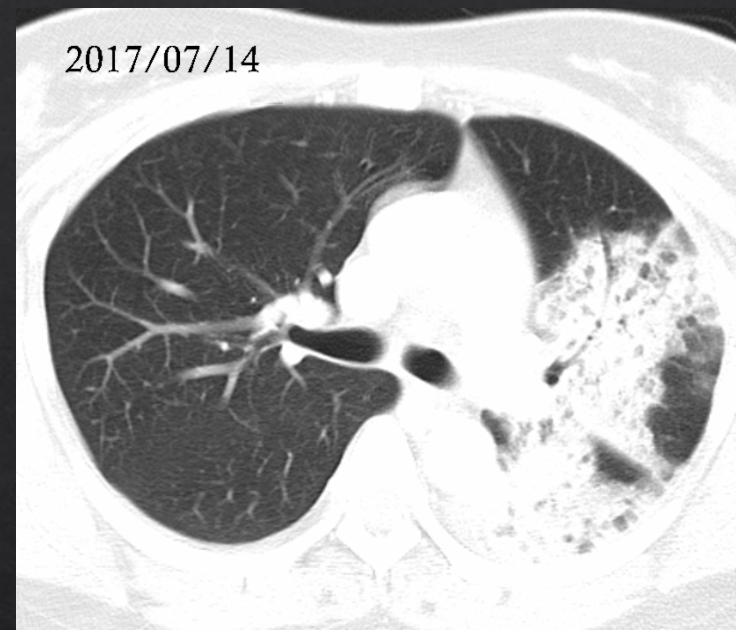


## Case 4

- ◇ 40 y/o, female
- ◇ Productive cough (2 wks), fever and myalgia (1 d)
- ◇ Smoking (-)
- ◇ PHx:
  - ◇ Caesarean section (20 d ago), G1P1A0, gestational diabetes and hypertension
- ◇ Lab:
  - ◇ WBC 13250 /uL (Neu 85.6%, Lym 5.8%, Mono 7.3%, Eos 1.0%, Baso 0.3%)
  - ◇ CRP 9.88 mg/Dl
- ◇ Image:
  - ◇ 2017/07/14 Chest CT (No C +C)



2017/07/14



# Pathology

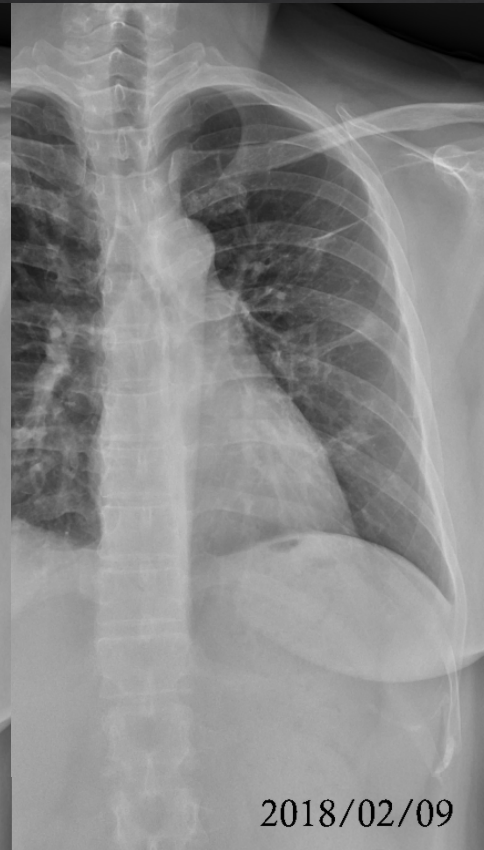
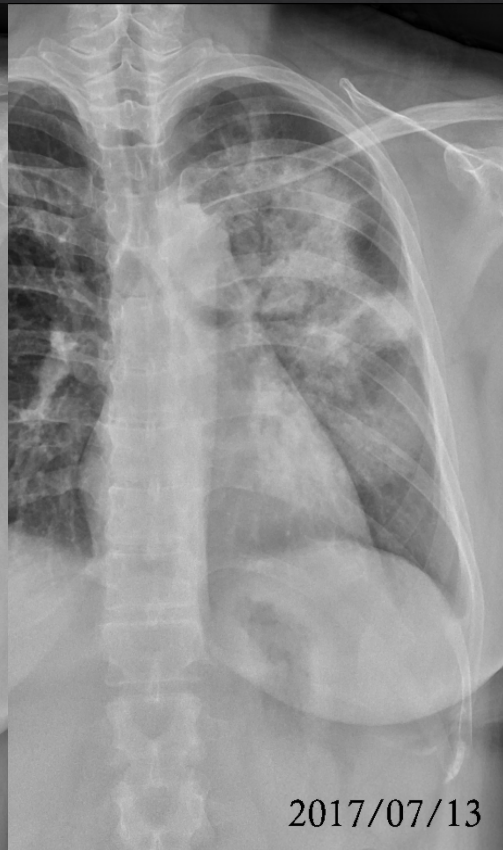
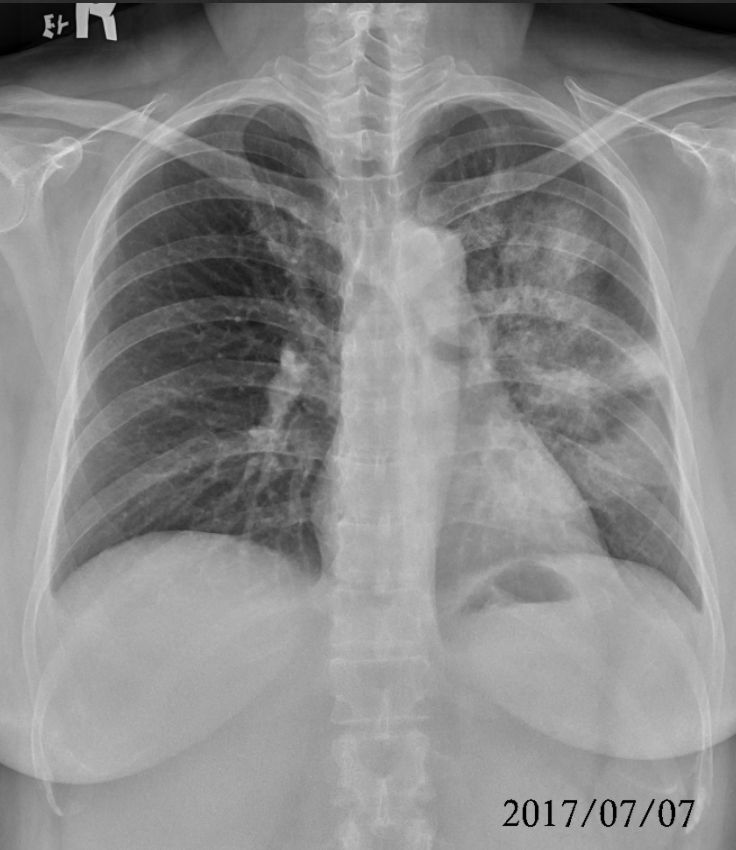
◆ Diagnosis: Lung, upper and lower lobes, left, CT-guided needle biopsy, cryptococcosis

◆ Report:

Microscopically, it shows a picture of granulomatous inflammation in lung composed of many granulomas containing many multinucleated giant cells, macrophages, and inflammatory cells in lung tissue. In multinucleated giant cells, many grayish round or ovoid fungal spores are present in cytoplasm. The fungal spores are positive for PAS stain and no acid-fast bacillus is found. Cryptococcosis is diagnosed.

◆ Lab: Cryptococcus Ag: Positive[1:256]

Improvement after anti-fungal treatment



Fluconazole

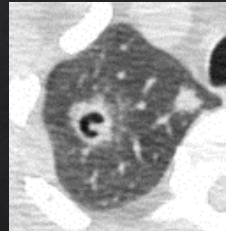
# Cryptococcosis

- ◇ Consider cryptococcosis in immunocompromised patients with 1 or more lung nodules or masses that may cavitate

- ◇ CT

- ◇ Pulmonary nodules or masses

- ◇ Cavitation, more common in immunocompromised patients, air-fluid levels in abscesses
    - ◇ Peripheral > central lung
    - ◇ Poorly circumscribed margins
    - ◇ Clustered nodules most common
    - ◇ Solitary & scattered nodules less common



- ◇ Patchy airspace consolidation (70% in immunocompromised patients; 10-30 % in immunocompetent patients<sup>1</sup>)
  - ◇ Ground-glass opacity, CT halo sign
  - ◇ Mediastinal lymphadenopathy
  - ◇ Pleural effusions

- ◇ Top Differential Diagnoses

- ◇ Squamous cell carcinoma

- ◇ Most common lung cancer to cavitate (15%)

- ◇ Pulmonary metastases

- ◇ Well-defined pulmonary nodules or masses
    - ◇ Hemorrhagic metastases may exhibit irregular margins & surrounding ground-glass opacity: Renal cell cancer, melanoma, & choriocarcinoma
    - ◇ Squamous cell carcinomas & sarcomas may cavitate

- ◇ Septic emboli

- ◇ Poorly defined pulmonary nodules or masses
    - ◇ Varying degrees of cavitation

- ◇ Wegener granulomatosis

- ◇ Multiple cavitory pulmonary nodules or masses
    - ◇ Consolidation & ground-glass opacity less common

<sup>1</sup> Chang WC, Tzao C, Hsu HH, et al. Pulmonary cryptococcosis: comparison of clinical and radiographic characteristics in immunocompetent and immunocompromised patients. Chest 2006; 129: 333-40.

# Unilateral Consolidation

## ◇ Community Acquired Pneumonia

- ◇ Lobar
- ◇ Bronchopneumonia
  - ◇ Peribronchial, often multifocal consolidation
  - ◇ Possible endobronchial spread

## ◇ Bronchioloalveolar Carcinoma

- ◇ Slowly progressive lung consolidation
  - ◇ May increase in both size and density
  - ◇ Patients often treated for recurrent pneumonia in same lobe
- ◇ CT often shows mixed consolidation and ground-glass opacity
  - ◇ Crazy-paving and septal thickening less common
  - ◇ Dilated airways within consolidation: "Pseudocavitation"

## ◇ Lung Contusion

- ◇ Radiography and CT
  - ◇ Nonanatomic distribution of consolidation and ground-glass opacity

## ◇ Endobronchial Tumor

- ◇ Endobronchial soft tissue mass or broncholith obstructing bronchus
  - ◇ Primary lung carcinoma
  - ◇ Metastases: *Melanoma, breast, renal cell, colon*
- ◇ Air bronchograms often absent within consolidation
  - ◇ CT may show fluid attenuation filling bronchi
- ◇ Signs of volume loss

# Unilateral Consolidation

## ◆ **Coccidioidomycosis**

- ◆ Endemic in desert regions of southwestern USA
- ◆ Single or multiple foci of lung consolidation
- ◆ Nodules less common, may cavitate
- ◆ Lymphadenopathy in 20% of patients
- ◆ Pleural effusion in 10-20% of patients

## ◆ **Blastomycosis**

- ◆ Endemic in central and eastern USA along major rivers and around the Great Lakes
- ◆ Single or multiple foci of lung consolidation
  - ◆ Slow to resolve or respond to therapy
- ◆ Nodules and masses cavitate in 1/3 of patients
- ◆ Lymphadenopathy uncommon
- ◆ Pleural effusion in 20% of patients

## ◆ **Diffuse Alveolar Hemorrhage**

- ◆ Usually related to capillaritis
  - ◆ *Wegener granulomatosis*
  - ◆ *Microscopic polyangiitis*
  - ◆ *Systemic lupus erythematosus*
  - ◆ *Drug toxicity*
- ◆ Unilateral less common than bilateral
- ◆ Lung periphery often spared

## ◆ **Eosinophilic Pneumonia**

- ◆ *Löffler syndrome*
  - ◆ *Simple pulmonary eosinophilia*
  - ◆ Patients asymptomatic or present with fever and cough; spontaneously resolves
  - ◆ Transient or migratory solitary or multiple foci of lung consolidation
- ◆ Other forms of eosinophilic pneumonia usually bilateral

# Unilateral Consolidation

## ◆ Pulmonary Emboli

- ◆ Consolidation from infarction, atelectasis, or hemorrhage
- ◆ Solitary or multiple
- ◆ Small pleural effusion may be present
- ◆ Infarct on chest radiograph: **Hampton hump**
- ◆ Infarct on CT: **Peripheral wedge-shaped, unenhancing focus of consolidation with central lucencies**
  - ◆ **Resolves from periphery to center**

## ◆ Lymphoma

- ◆ 4% of lung malignancies
- ◆ Non-Hodgkin lymphoma
  - ◆ 30% lung involvement
- ◆ Unifocal or multifocal consolidation or nodules
- ◆ Air bronchograms often present