



# 肺部感染症之影像判讀 (I) : Infection

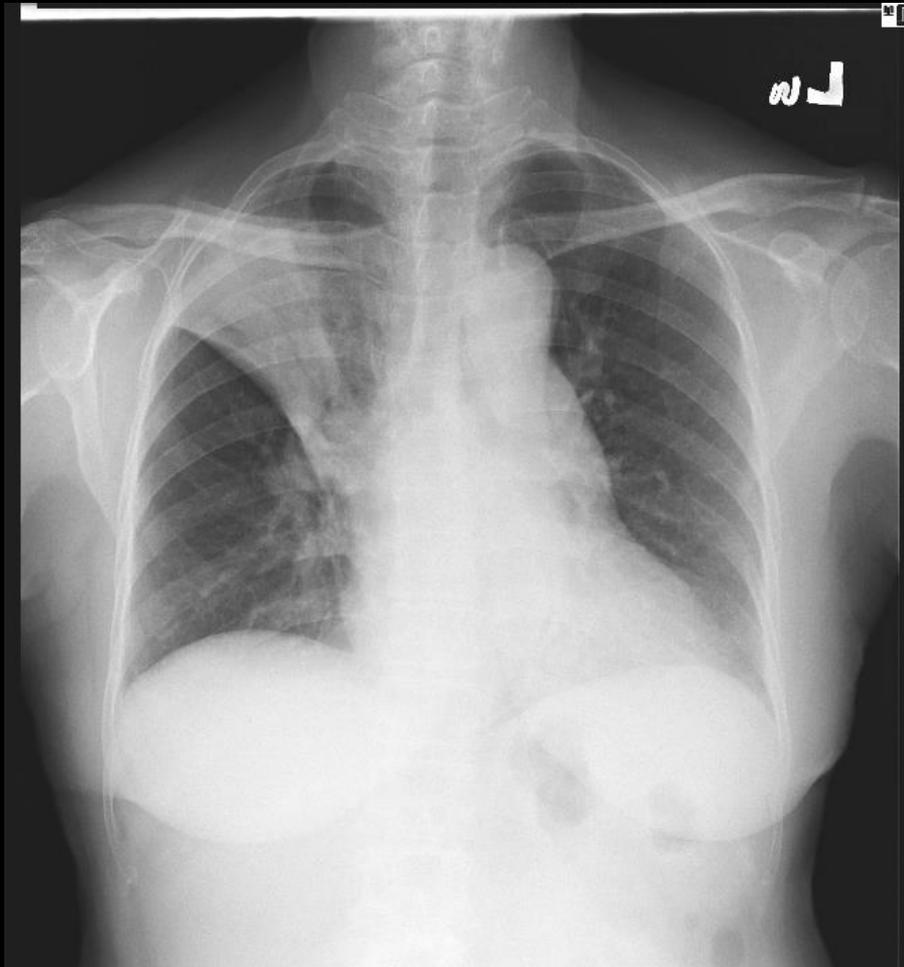
高雄榮總 胸腔內科 朱國安醫師



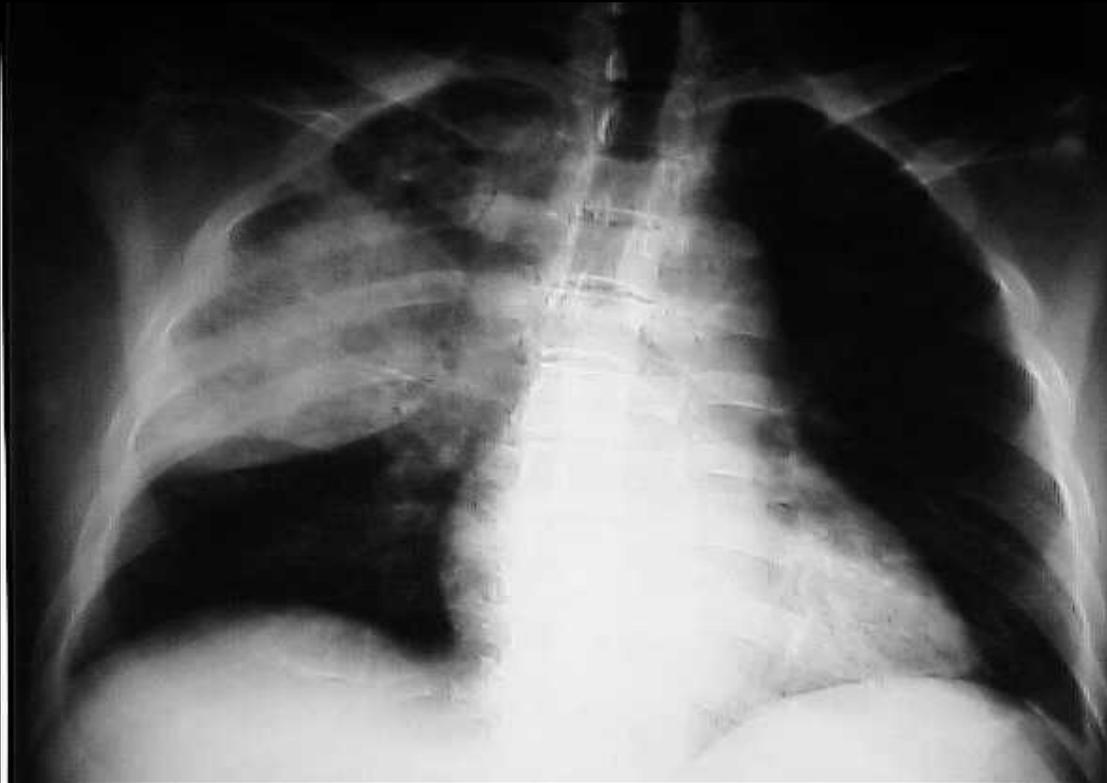
# Contents (1) : Infections

- **Airbronchogram**
- Lobar pneumonia
- Bronchopneumonia and Segmental pneumonia
- Interstitial pneumonia
- Bilateral pneumonia
- **Serial follow up images**
- Rapid progression pneumonia
- Delayed(Un)-resolved pneumonia
- **Complication** of Pneumonia (air, cavity, fluid, ARDS, pneumotocele ...)
- Pneumococcal pneumonia
- Klebsiella pneumonia
- PJP pneumonia
- Viral
- **Septic emboli**
- **Tuberculosis**
- **DD: Conditions mimicking pneumonia ( CHF, sputum, Cancer ...)**

# Pneumonia – air bronchogram



# Pneumococcal Pneumonia

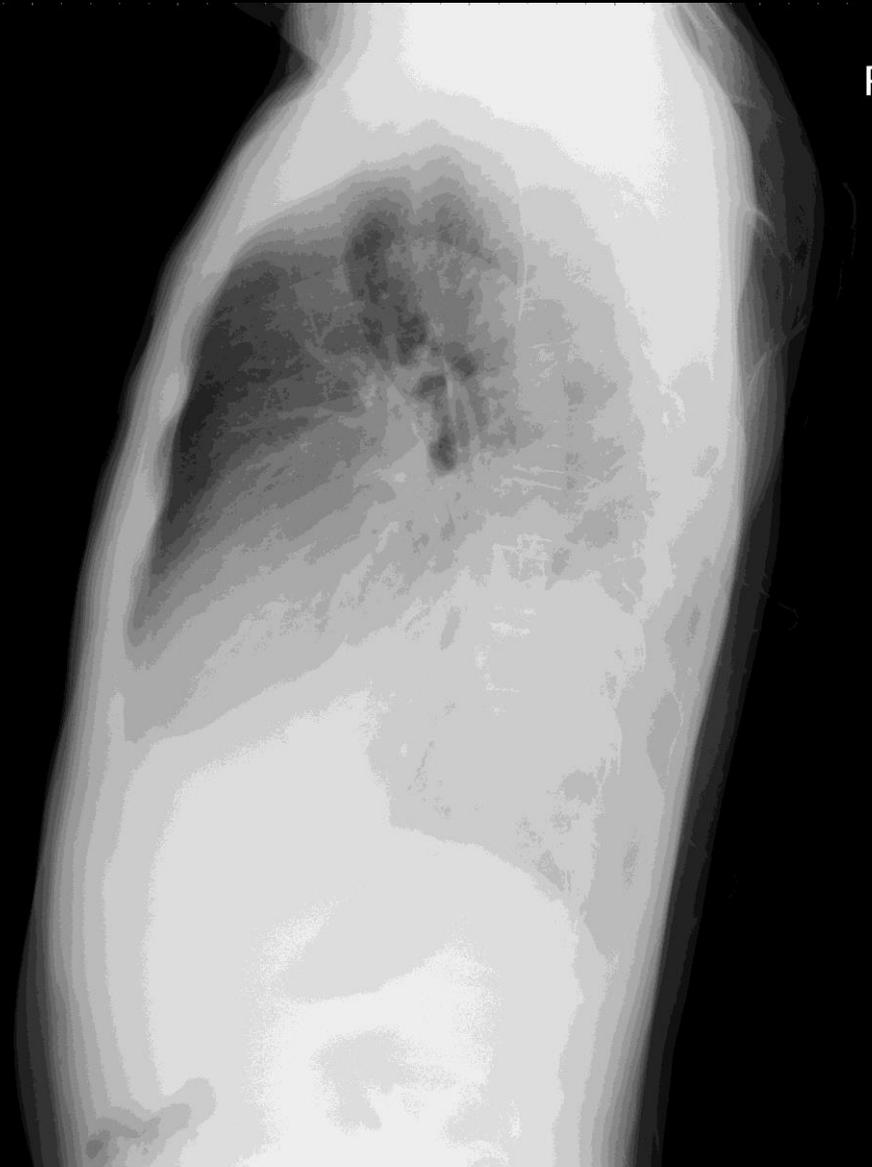
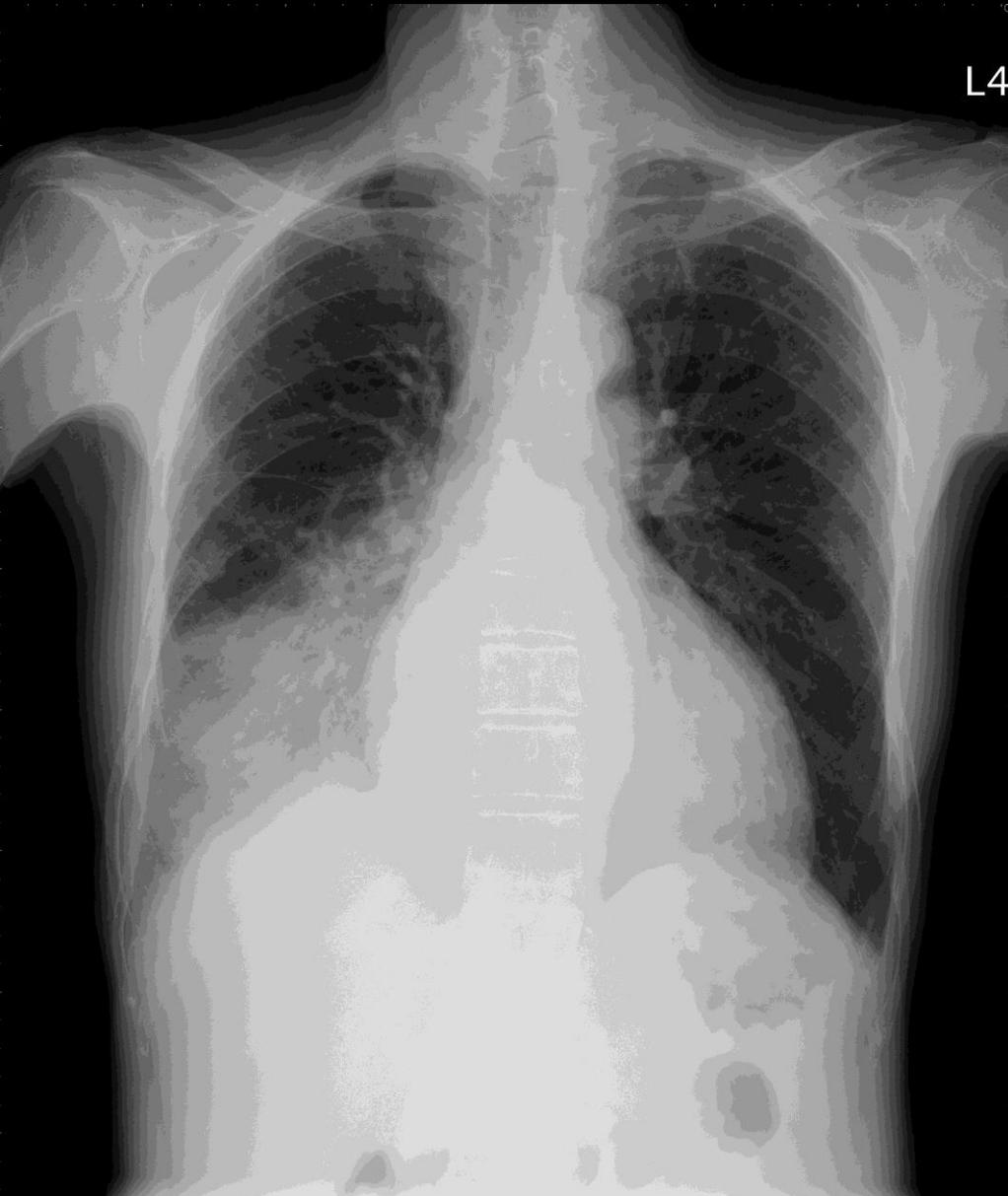


# Pneumonia : *K. Pneumoniae*

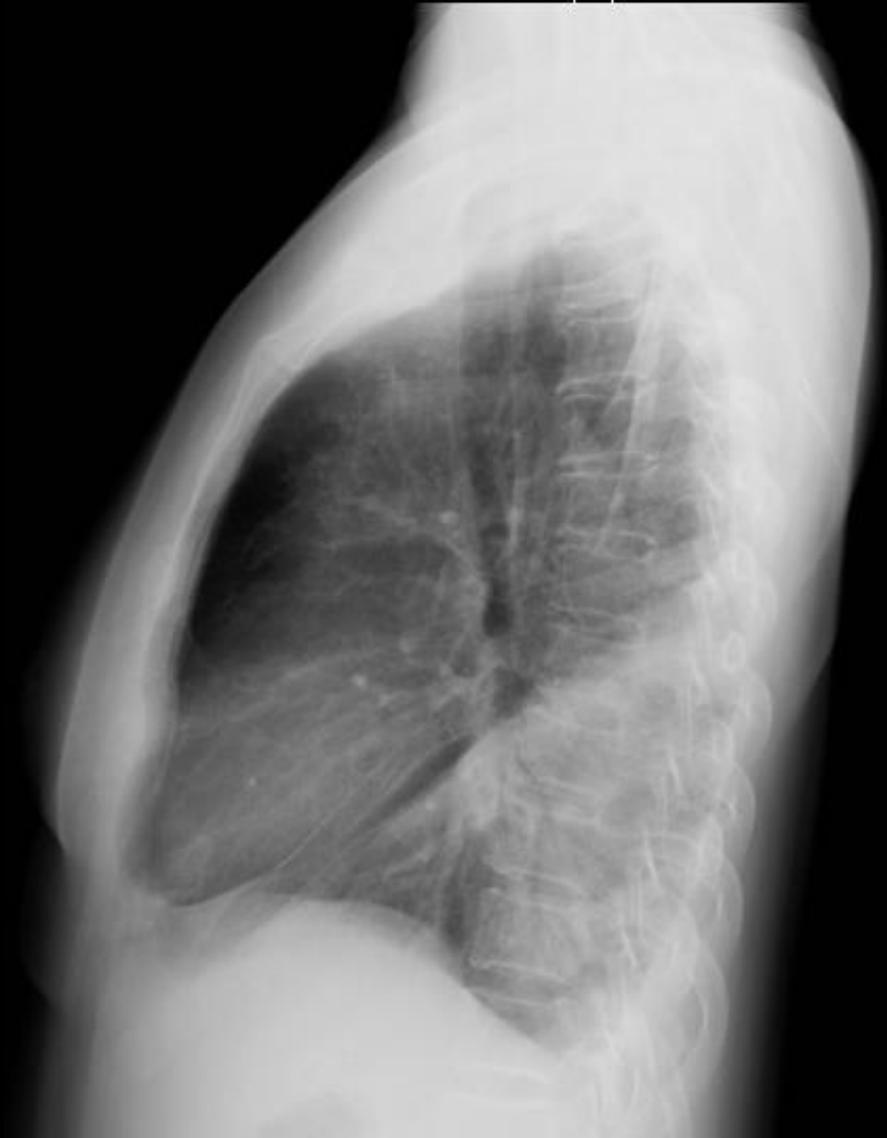
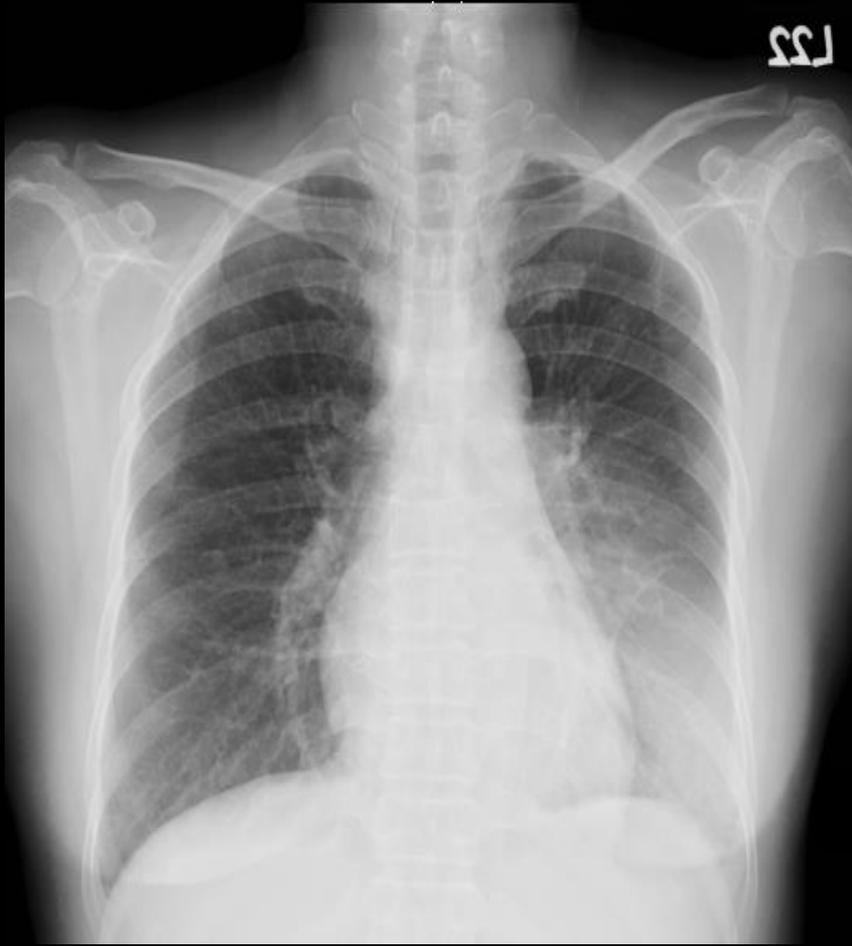


"Bulging fissure"

# RLL lobar pneumonia : DD. RML, effusion



pneumococcal pneumonia , Pneumococcus Ag+



# Bronchopneumonia vs Segmental pneumonia



# Serial Follow up in infection diseases

# FU CXR within 12 hours



*1 months*



追蹤片子可以及早發現惡化情況

DM patient, FU within 2 days.

cavity, abscess



**FU within 2 days.**

Worse pneumonia or  
effusion ?



# Complications of pneumonia

25 y/o woman, DM, Rapid worse pneumonia LLL , (1)



25 y/o woman, DM, Rapid worse pneumonia LLL ,  
FU 1 week later (2)



**Air fluid level , DD. abscess or empyema ?**



**\* FU within 2 days.**

**Pleural effusion, Not  
Pneumonia worsening.**



# Treatment failure

診斷錯誤

用藥錯誤

併發症未治療

## \* 當病情惡化或者治療沒有改善時，考慮

- 診斷錯誤：CHF, bronchiectasis, TB, CA, etc.
- 細菌診斷錯誤：mixed infection, anaerobes, atypical.
- 藥物種類劑量期間不當：
- 新的細菌或者抗藥性產生：ESBL, Pseudomonas, etc.
- 發生併發症 - Lung abscess, Empyema - drainage...
- 病人病情不穩定，抵抗力差，宿主疾病與抵抗力不佳

# Effusion



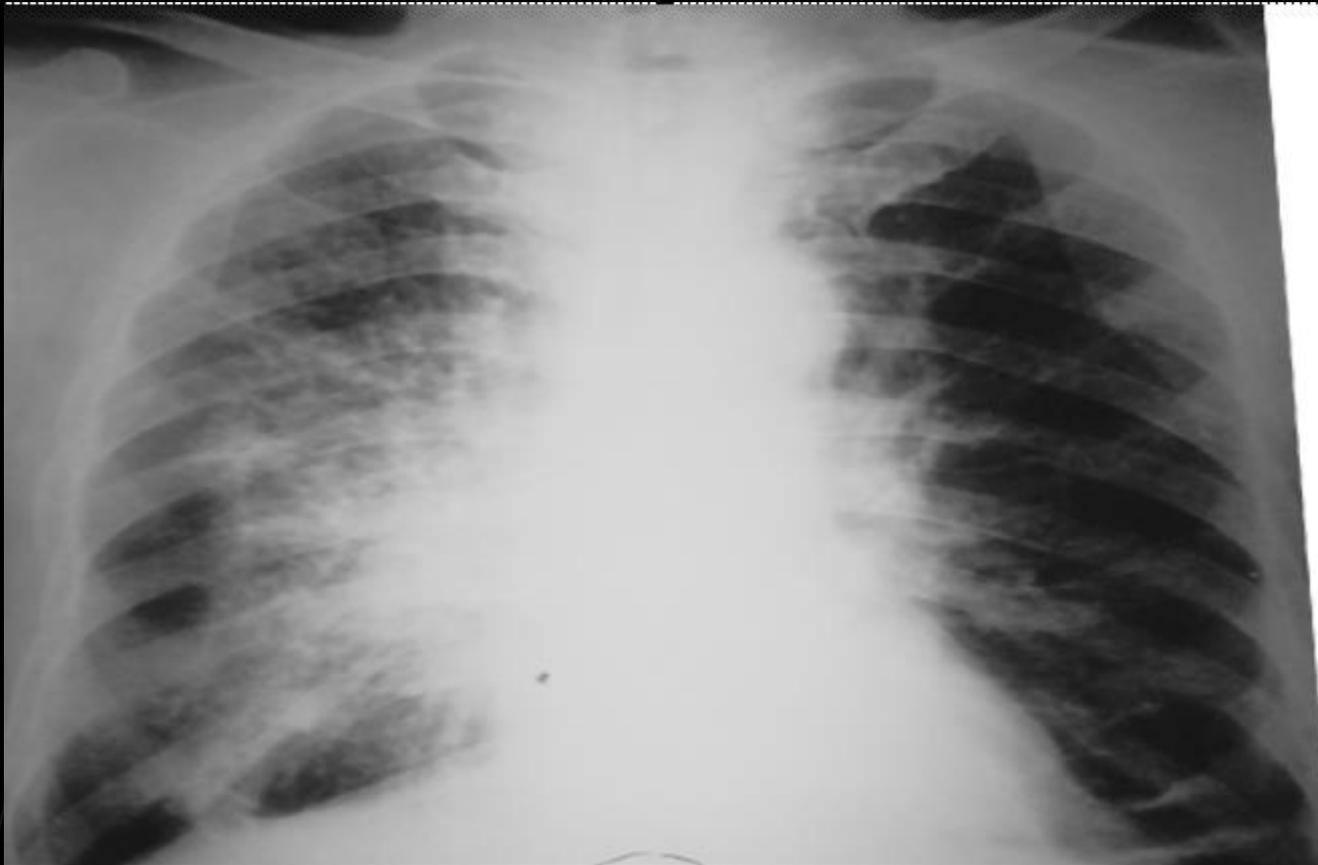
28 y/o female, DM. RLL infiltration,  
cavity like.



# Clinical Image mimicking Infection, Pneumonia

CHF, Collapse, Cancer, sputum,  
bronchiectasis.

Fever, cough, for 2+ months. Location and shape ?



History of Rt lung R/T, R/T pneumonitis.



Pneumoconiosis

# Pulmonary alveolar proteinosis



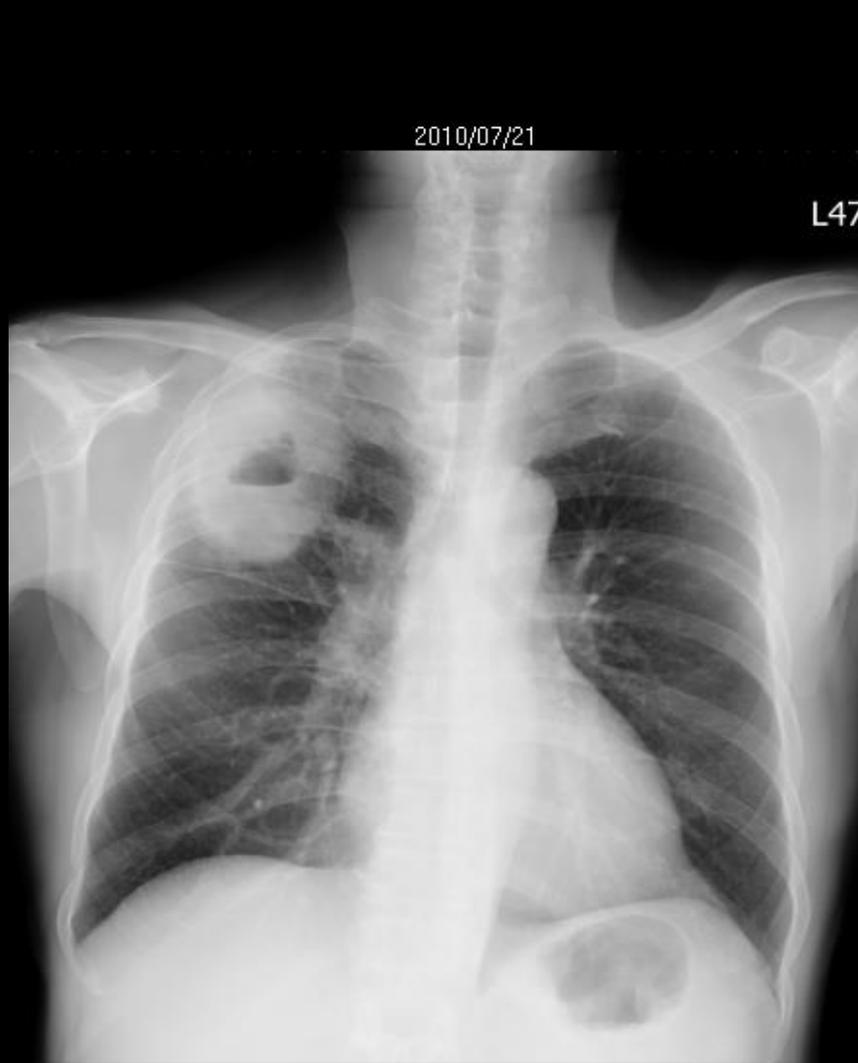
"crazy paving"

# Cavitary lung abscess ?



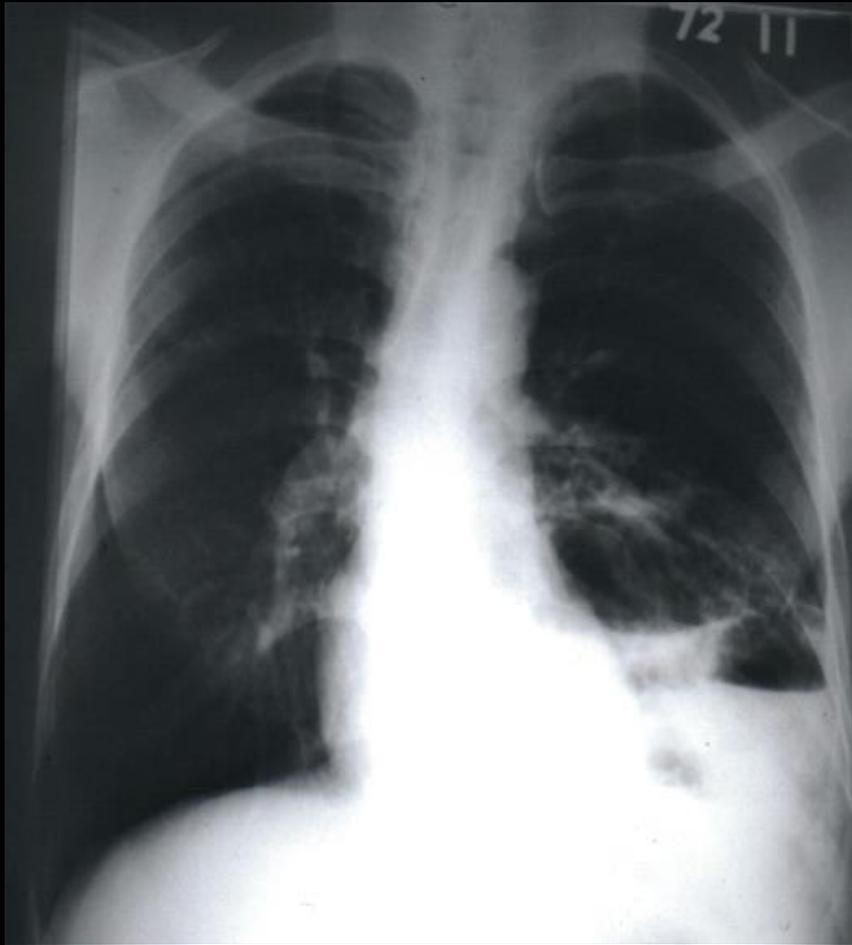
Hiatal Hernia .

chronic cough, sputum, intermittent mild fever. Location and shape ?



Cavitary lung cancer, squamous cell; DD. Abscess

25 y/o man, chronic cough, sputum  
10 years



Sequestration , LLL

# Tuberculosis

Chronic, Location, Pattern

Old with New lesions

(兩側、上肺、濃淡不一、新舊雜陳)

# Primary TB



# TB caseous pneumonia



- RUL
- Irregular infil, density.
- Cavity.

# RUL TB + Lt bronchogenic spread



# AFB 4+, Bil. Upper, Cavities



# TB interstitial lung



# TB pleurisy RUL TB with pleurisy



# Milliary TB

- Diffuse small faint miliary nodules ( behind heart , diaphragm)



TB with back pain

2007/09/03



2007/09/17



TB spine



# 肺部呼吸道疾病之影像 判讀 (II) : Airway



# 重要内容



## AIRWAY : CXR , CT

- Bronchiectasis, ABPA
- Trachea, upper airway.
- Small airway, mosaic pattern

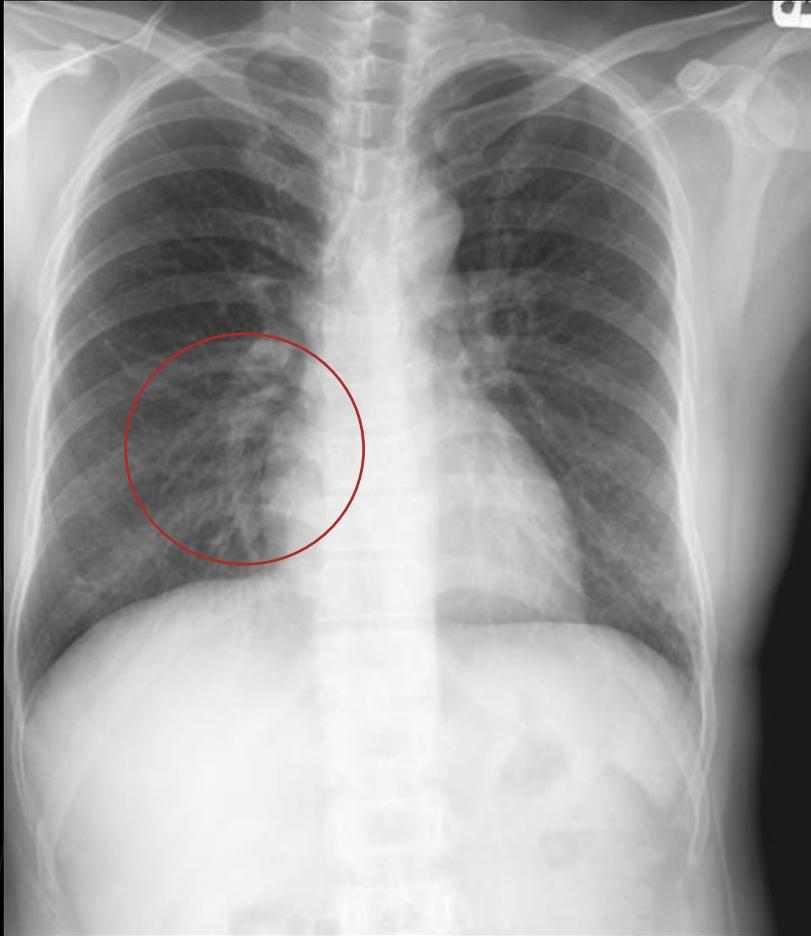
# Bronchiectasis

## HRCT:

CLASSICAL AIRWAY DILATATION AND BRONCHIAL WALL THICKENING (TRAM-TRACK).

SIGNET-RING SIGN IN CROSS-SECTION WITH THEIR ACCOMPANYING PULMONARY ARTERY.

# Bronchiectasis



# Lady Windermere syndrome: RML+Lt Ling Lobe bronchiectasis : MAC

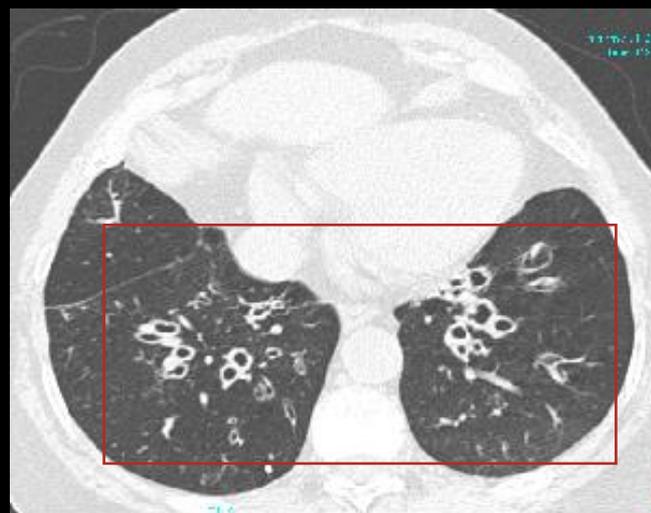
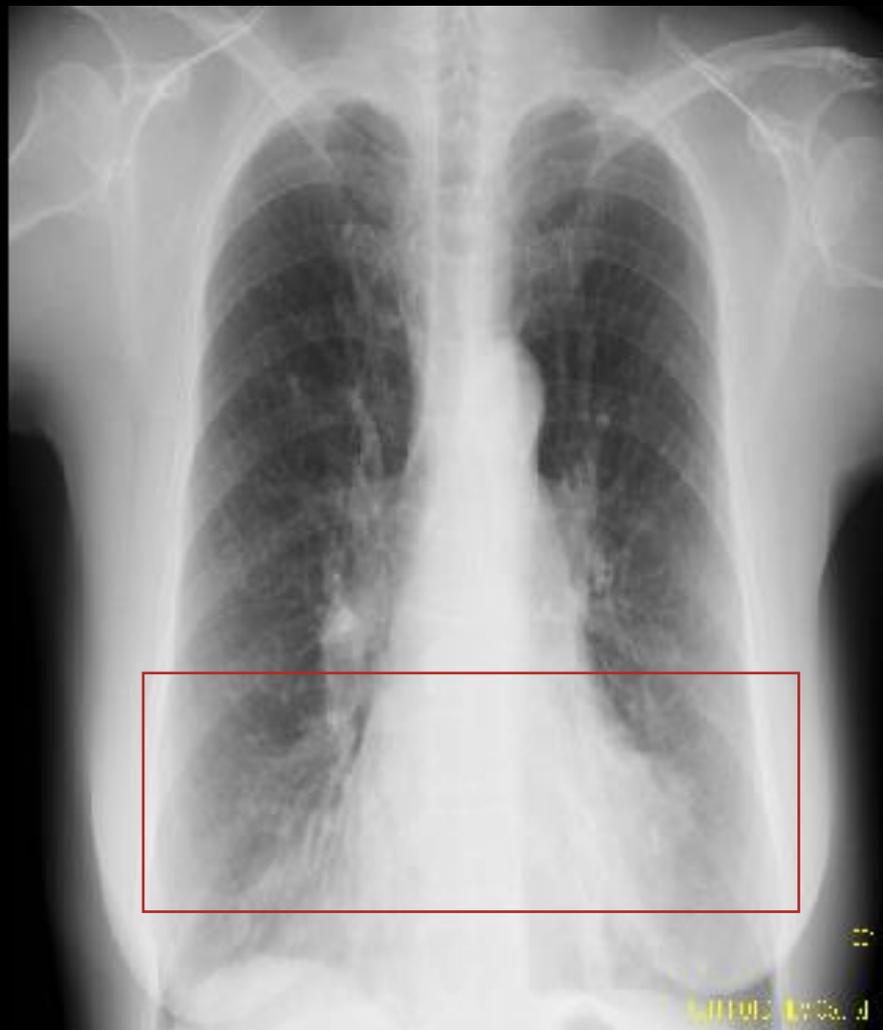
2009/06/29



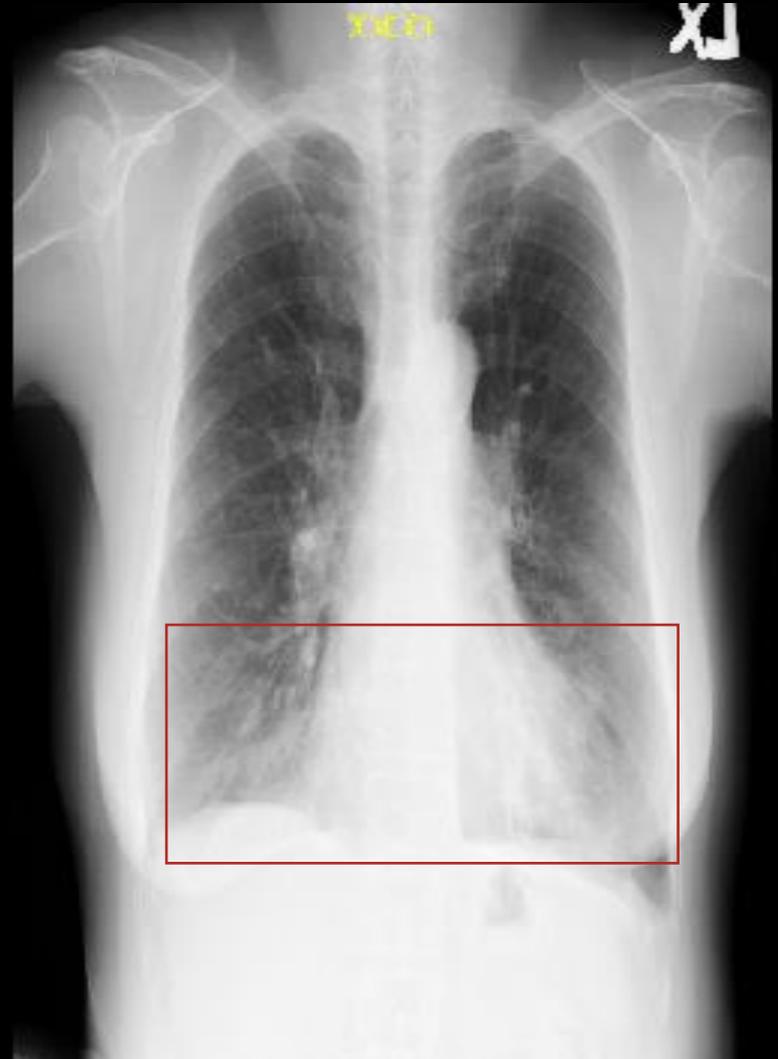
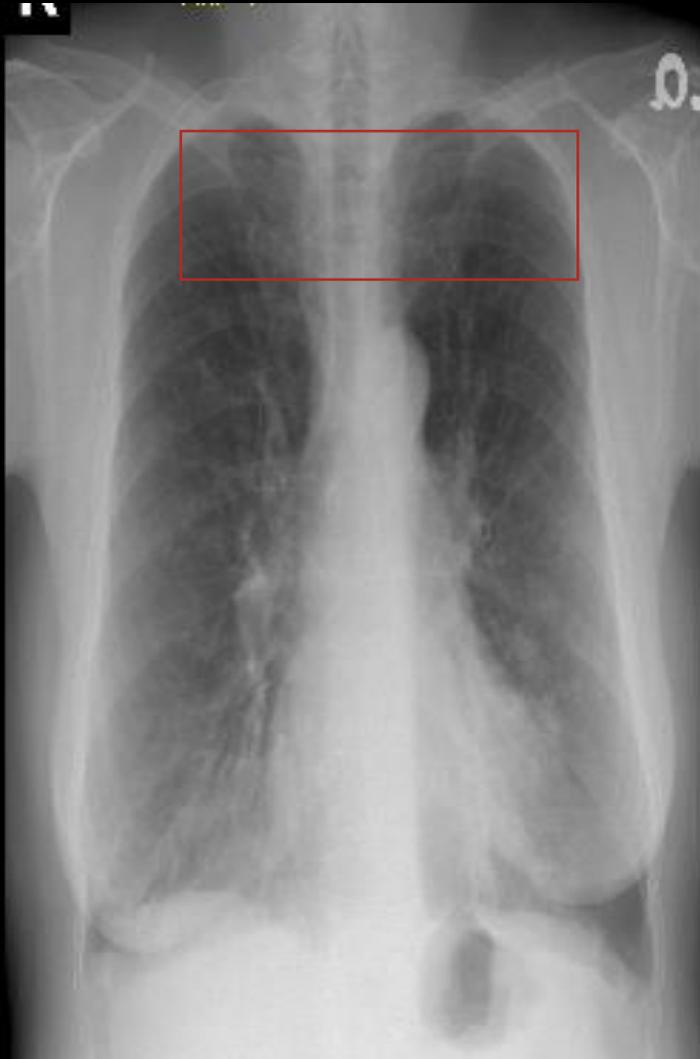
2009/06/29



# Bronchiectasis : lower



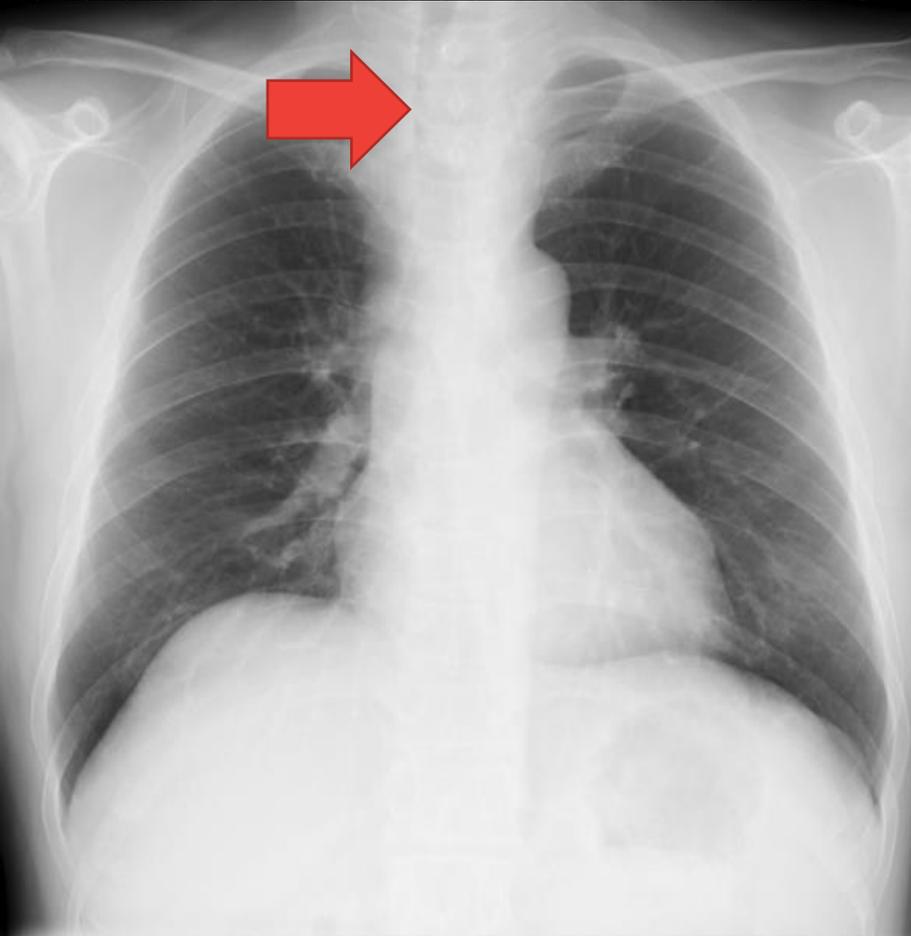
# Bronchiectasis : Upper, Lower



# Large Airway

TRACHEA AND LOBAR BRONCHUS

# Trachea tumor + Stent



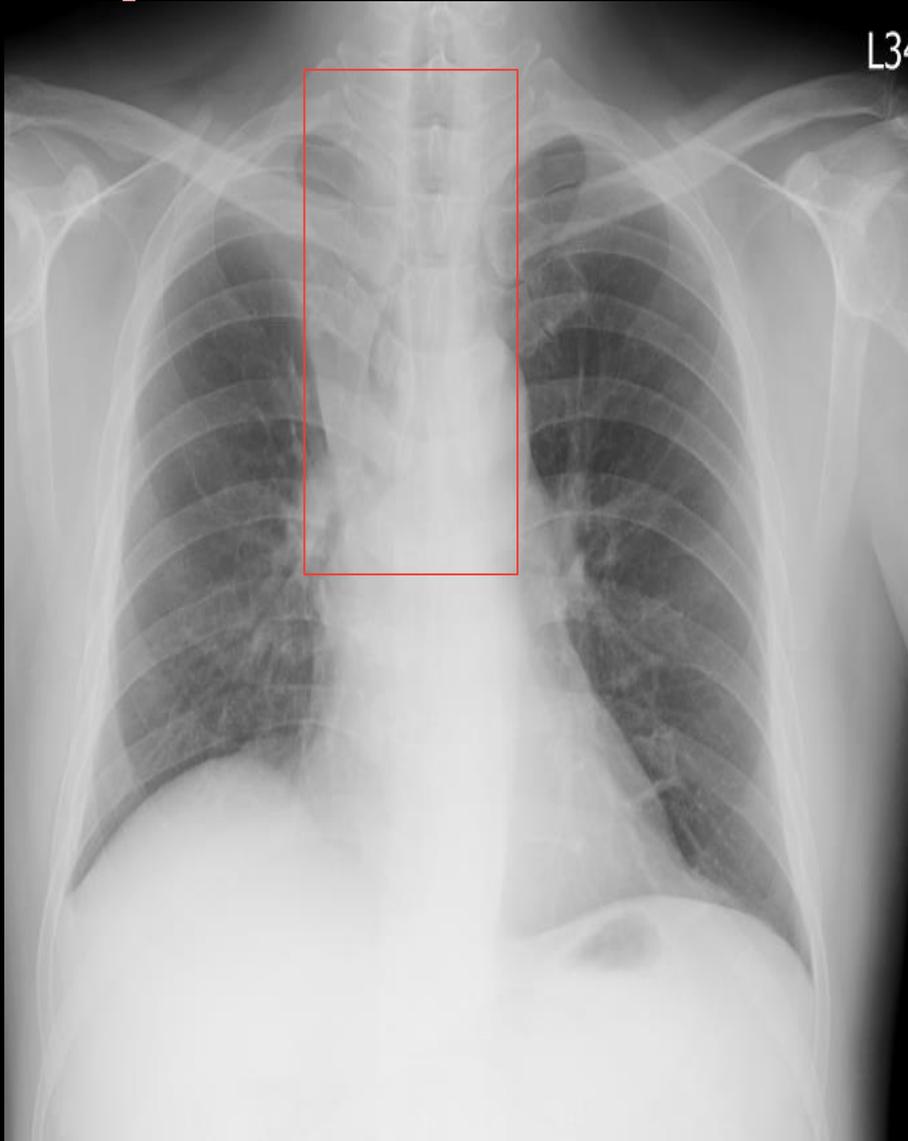
# Trachea stenosis

2010/06/17

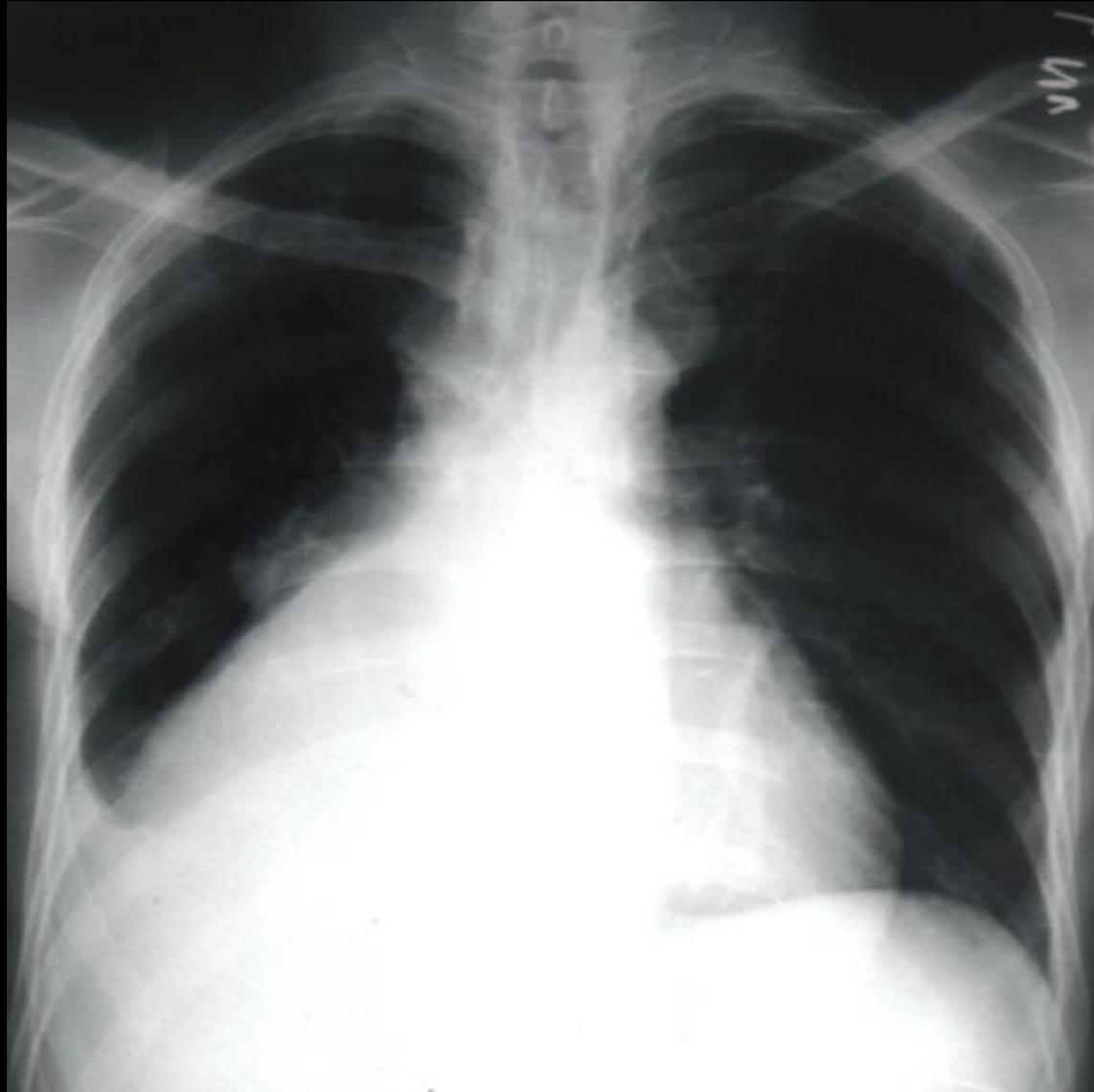
L 48



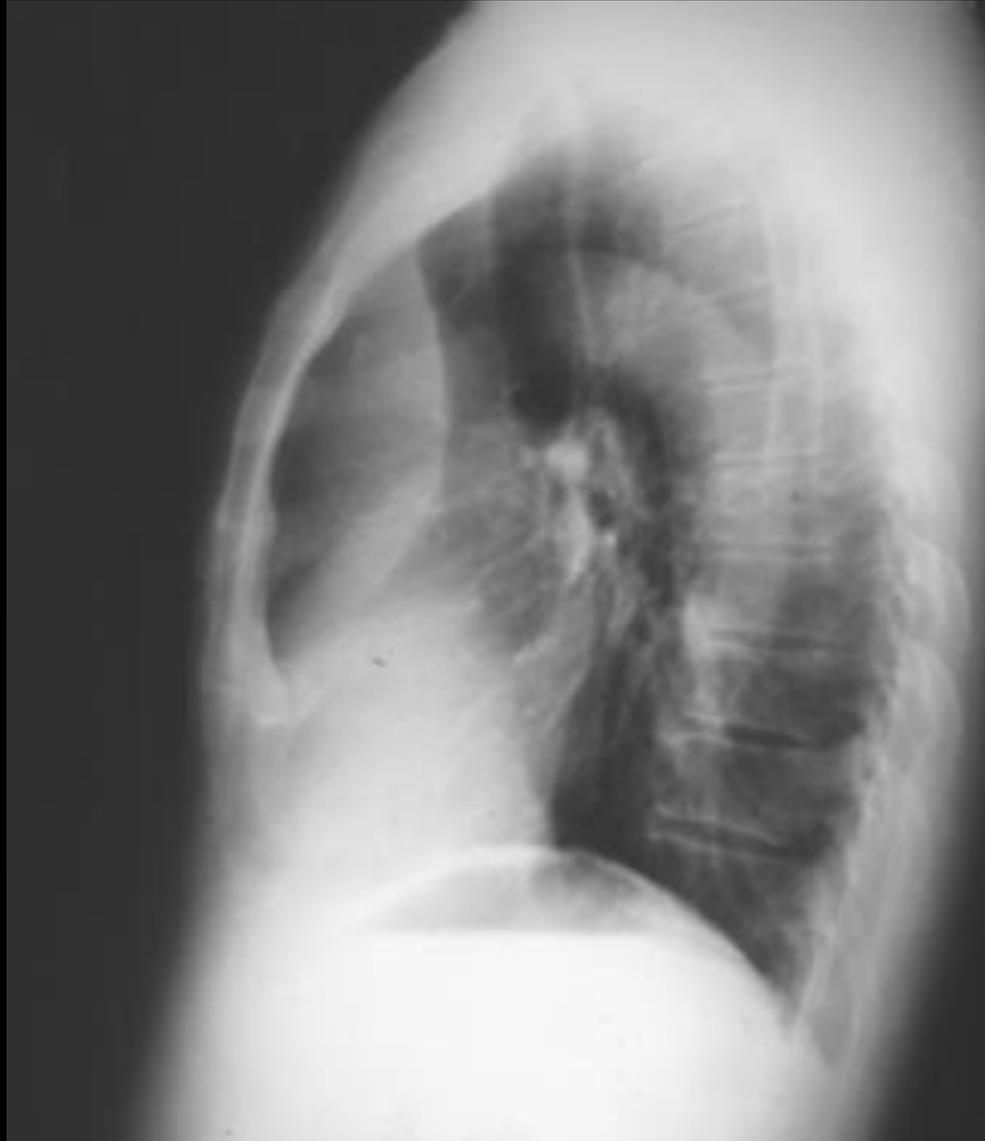
# Collapse, RUL (possible TB)



Collapse, RLL : DD. pneumonia

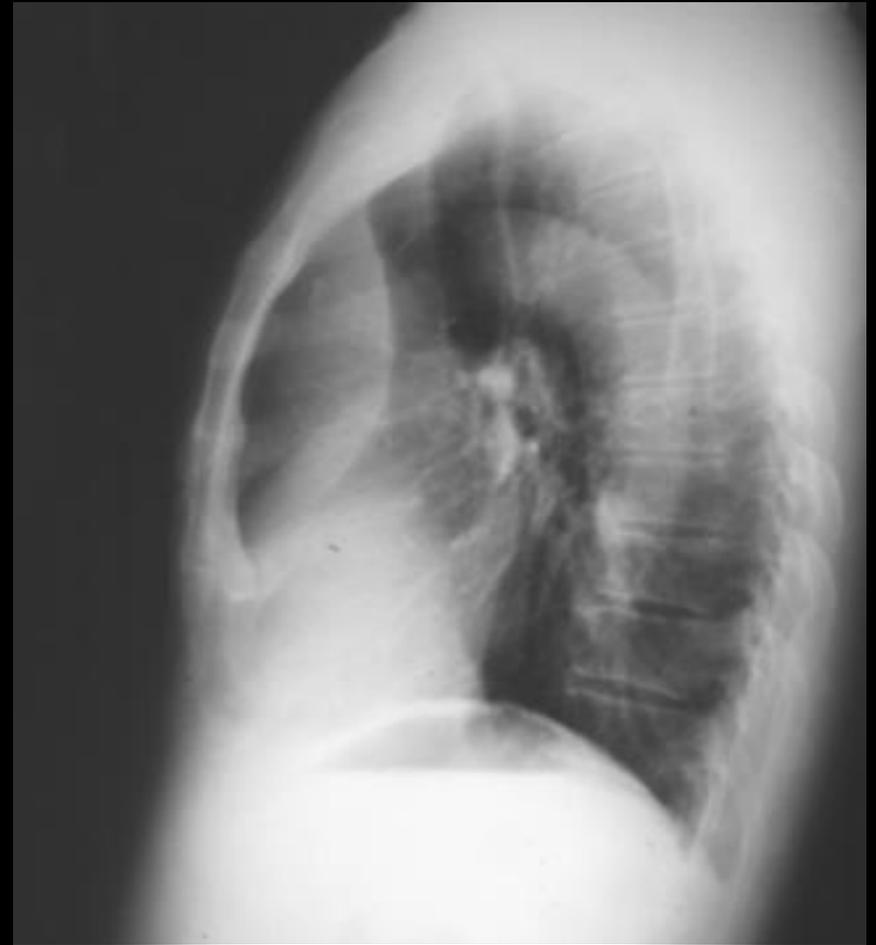


# Collapse Bi-lobe, Rt or Lt ?



RUL + RML

# Collapse, Bilobe: RUL + RML



# Collapse, Lt Upp Div (Lt ling L ?)

2007/11/12



2007/11/12



# Collapse, LUL

2008/04/22

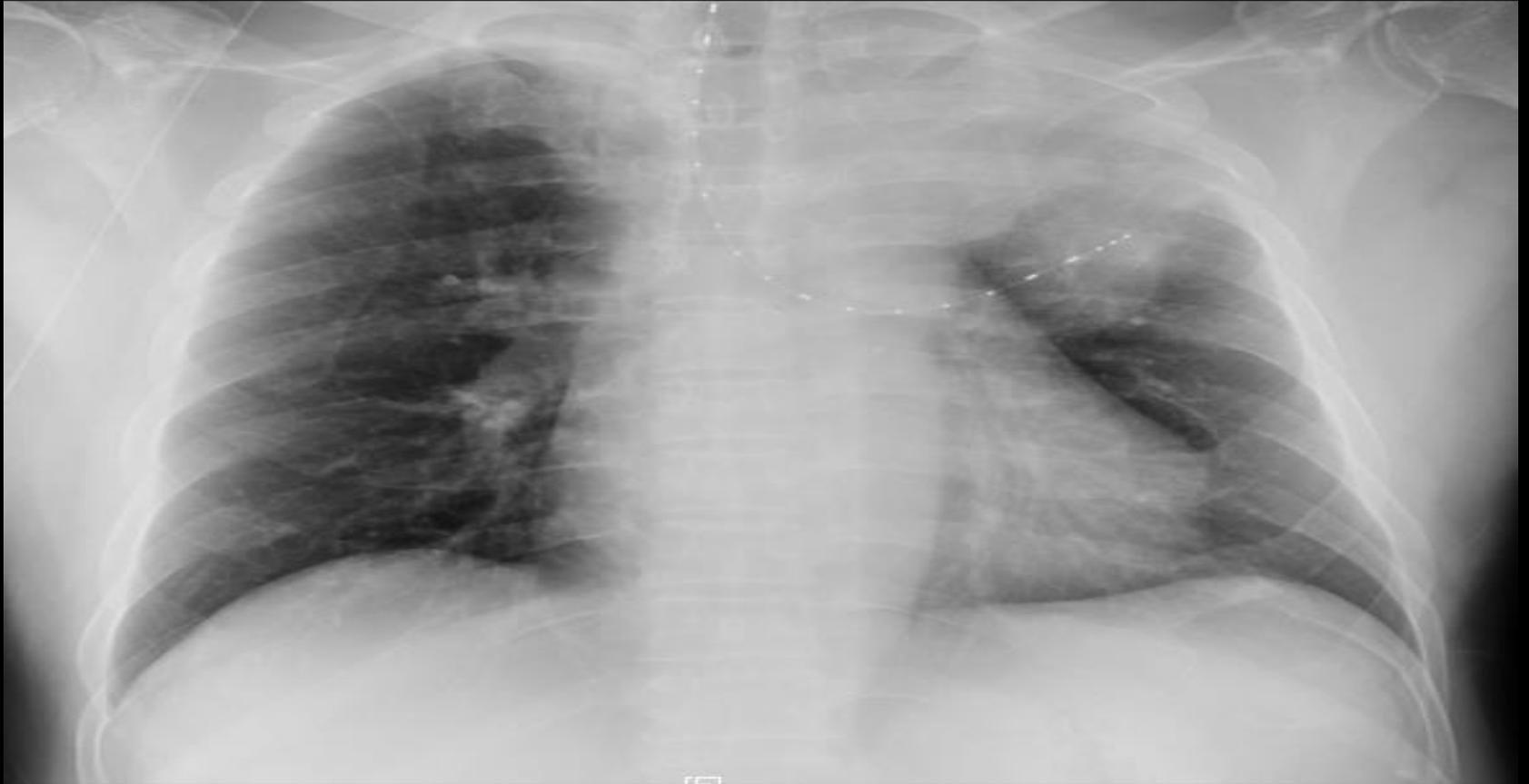


2009/05/04



What is this ?

2007/11/15



# 結語

- 感染症，影像判讀，往往需要配合臨床、細菌學、系列影像變化，尤其注視是否有併發症。
- 單獨影像，配合斷層，可有較多資訊供判讀；其中：  
pneumococcus, Klebsiella, septic emboli, Tb 時有較特殊影像。
- 許多疾病影像類似感染症，需要（配合臨床）鑑別診斷。
- 氣道疾病，斷層檢查對部分診斷有幫助。

