

General Data

- 姓名:張 O O
- 性別: Female
- 年齡:77 y/o
- 體重:58.5 kg
- 職業:退休教員

Chief complaint

Cough off and on for weeks

Present illness

- This 77-year-old woman She had suffered from intermittent cough for weeks.
- She had tenderness over RLL about one month ago. Thus, she visited our OPD.
- The CXR and chest CT revealed solitary pulmonary nodule over posterior aspect of RUL.

Present illness

- The PET examination also showed a focal area with glucose hypermetabolism in the posterior aspect of RUL.
- The whole body bone scan revealed increased activity in the T7, T8 and L4-5 level is demonstrable, most likely due to degenerative changes.
- The MRI showed no evidence of abnormal space-occupying lesion nor abnormal enhancement in the brain.

Personal history

- Smoking: (-)
- Drinking: (-)
- Betel nut eating: (-)
- Food of allergy: (-)
- Drug of allergy: Cefamazine

Past history

- Medical history: nil
- Surgical history:
 1. left osteoarthritis s/p total knee replacement two years ago

Image



2005/09/06

- Cardiomegaly with tortuous aortic knob
- Focal bulging of anterior right hemidiaphragm

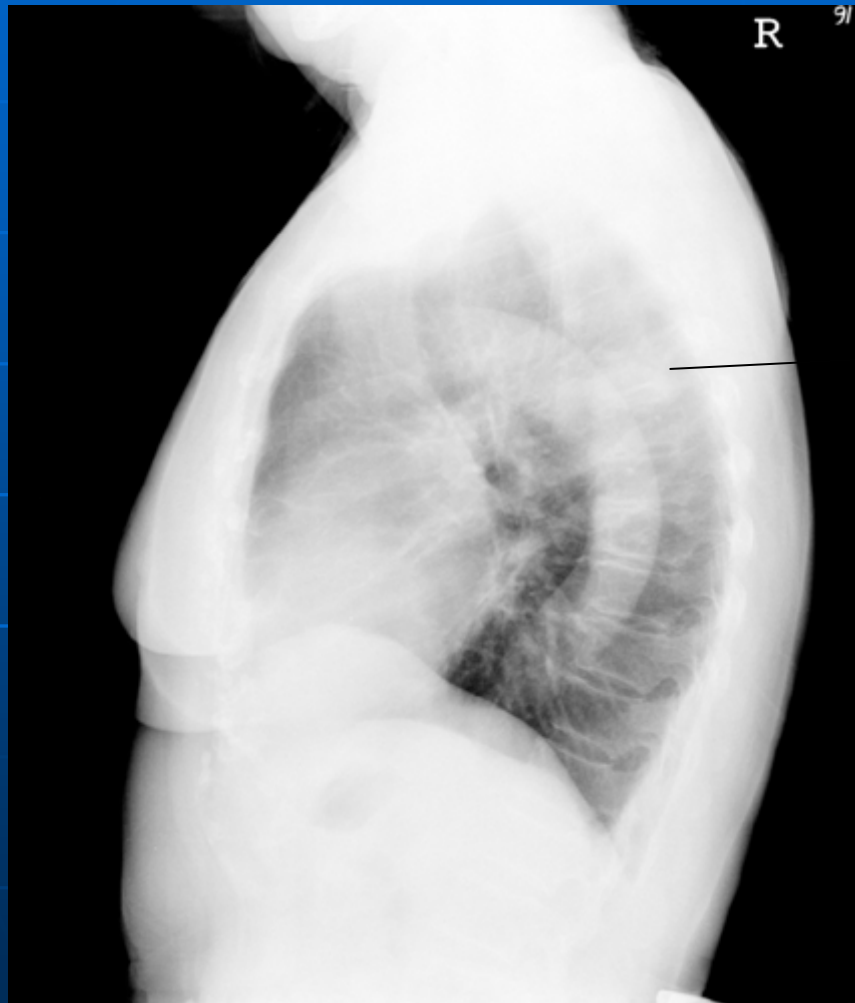
Image



2005/12/29

- An ill-defined pulmonary nodule with surrounding linear infiltrate over RUL.
- Cardiomegaly with tortuous aortic knob
- Focal bulging of anterior right hemidiaphragm

Image



2005/12/29

- An ill-defined pulmonary nodule with surrounding linear infiltrate in posterior aspect of RUL of lung

Image



2005/12/29

- An irregular mass with spiculation and heterogeneous contrast enhancement
- This mass was noted at the right upper lobe measuring 3x2.5x2.5 cm in size.

Image

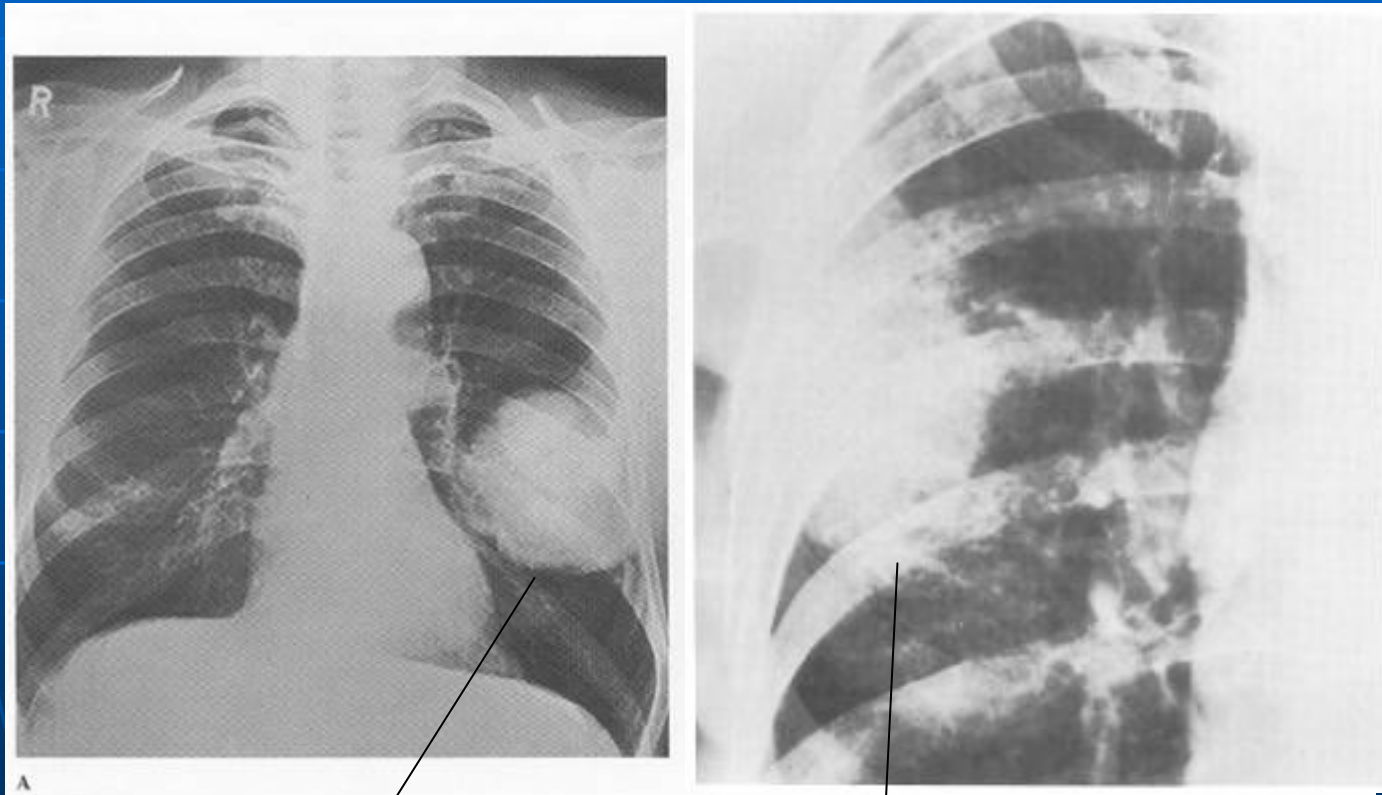


- multiple enlarged lymph nodes at the mediastinum

Differential diagnosis

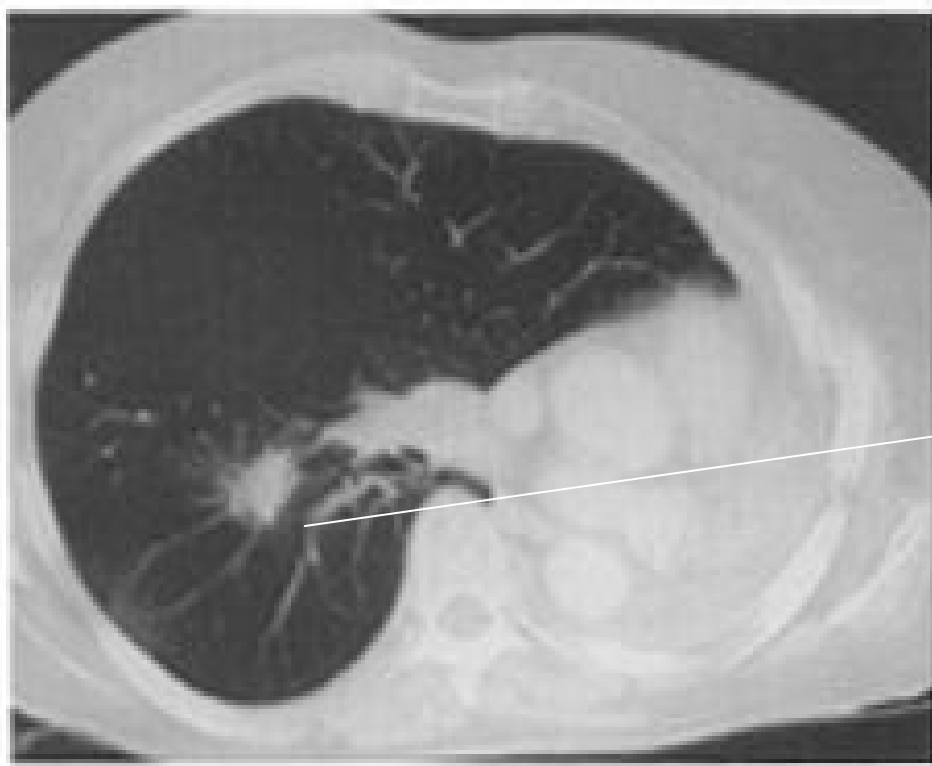
- Bronchial carcinoma
- Tuberculosis
- Cryptococcosis
- Lung abscess

Bronchial carcinoma



- Well-defined or ill-defined edge

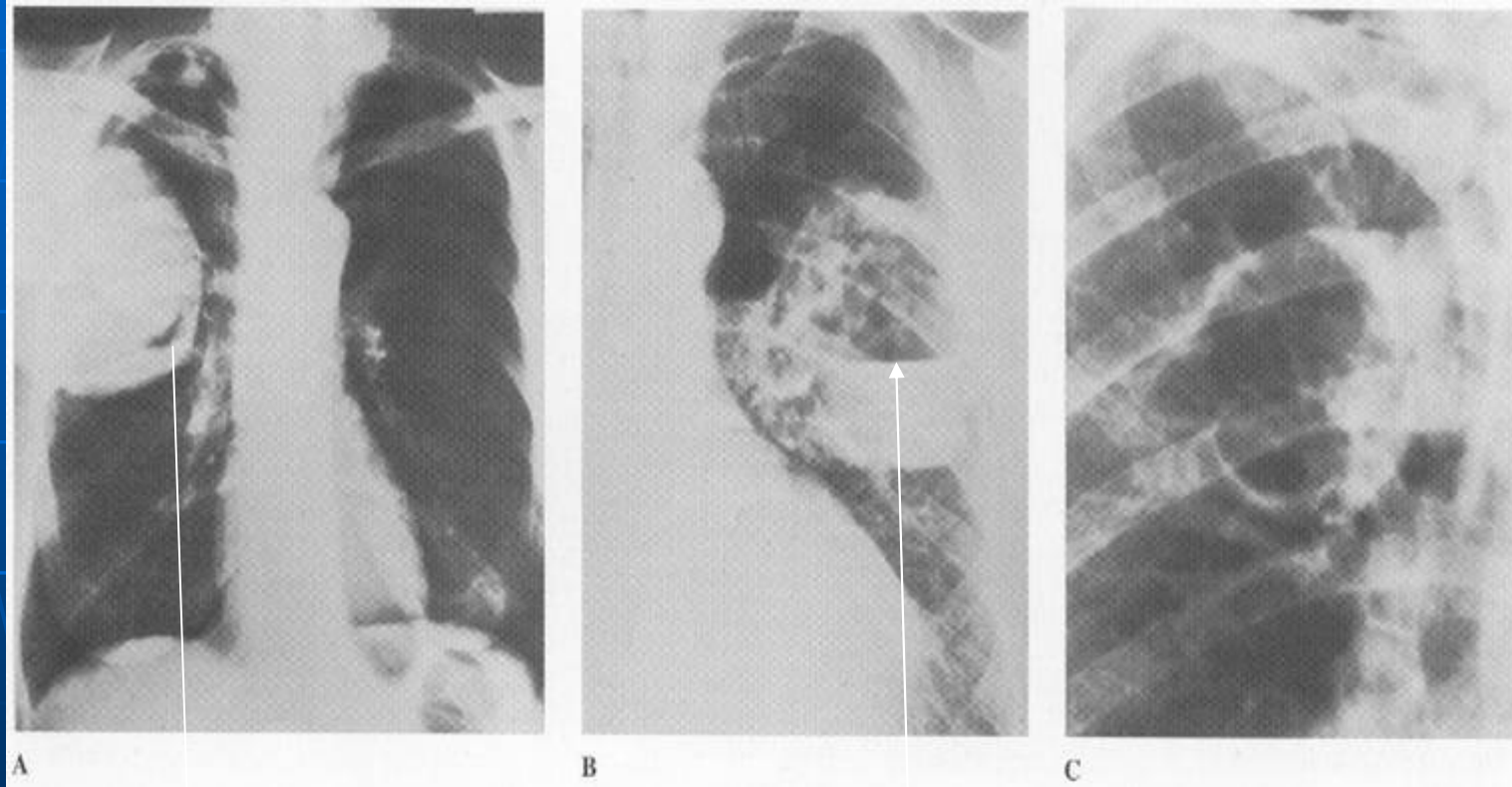
Bronchial carcinoma



- Bronchogenic carcinoma in the right lung s/p right pneumonectomy
- Second tumor with spiculated edges infiltrating into the adjacent lung (corona radiata)

Bronchial carcinoma

- cavitation



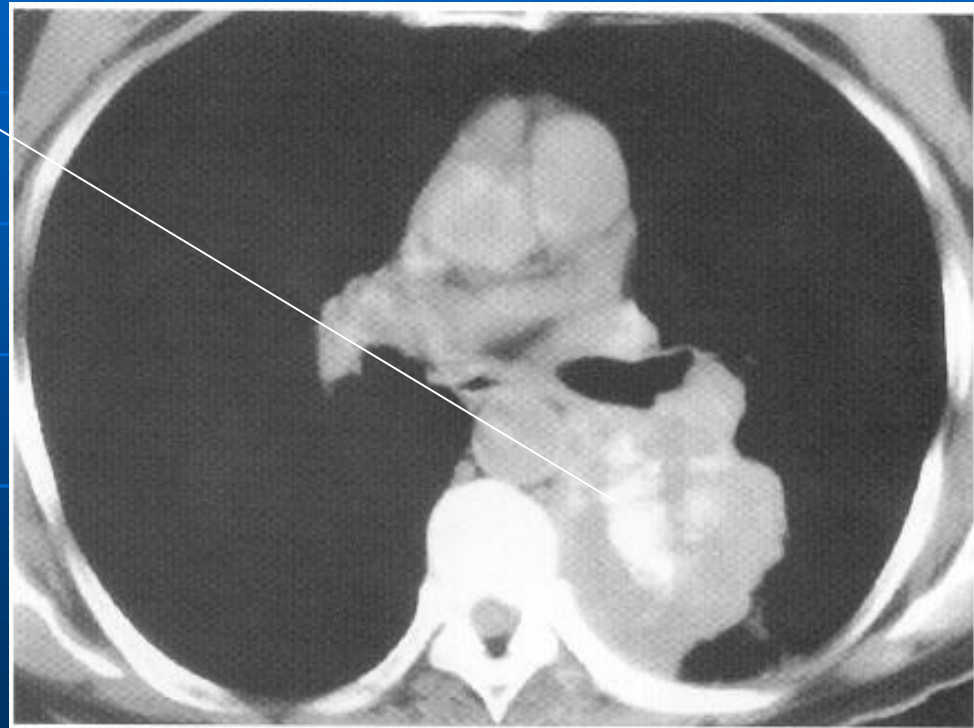
Eccentric cavity

Irregular inner wall
Air-fluid level

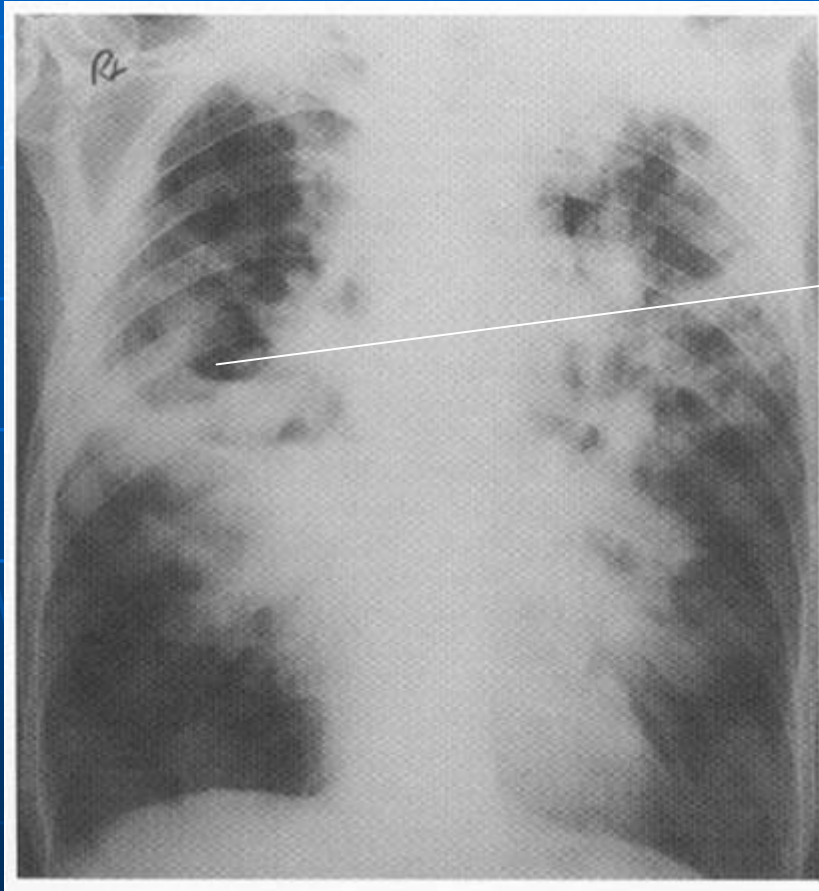
Thin wall

Bronchial carcinoma

- calcification

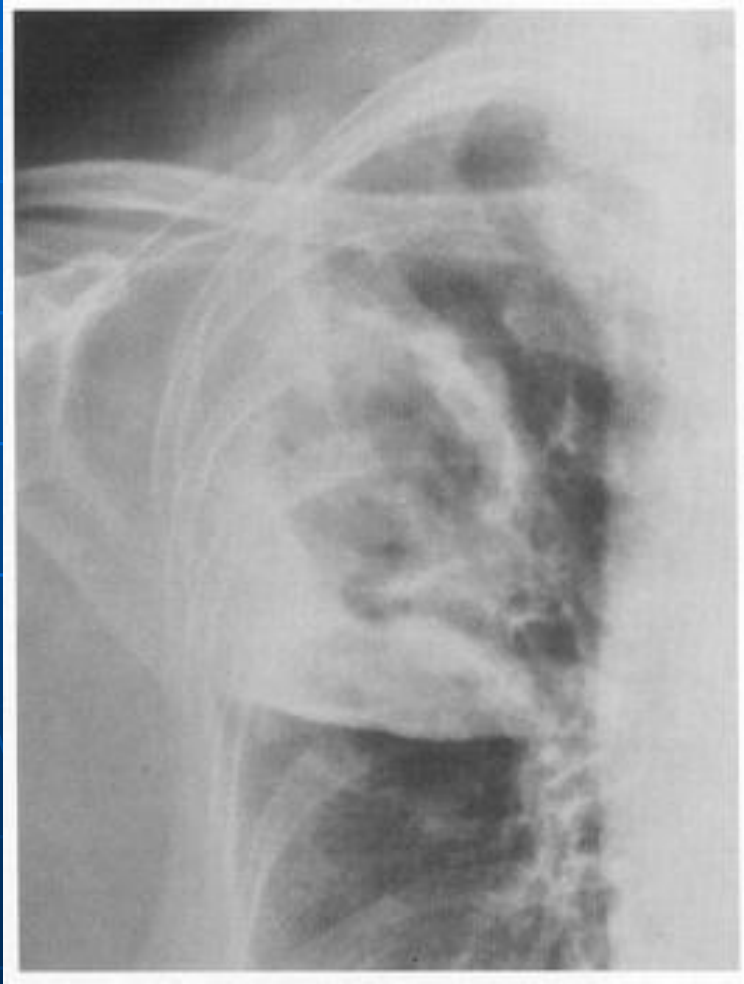


Tuberculosis



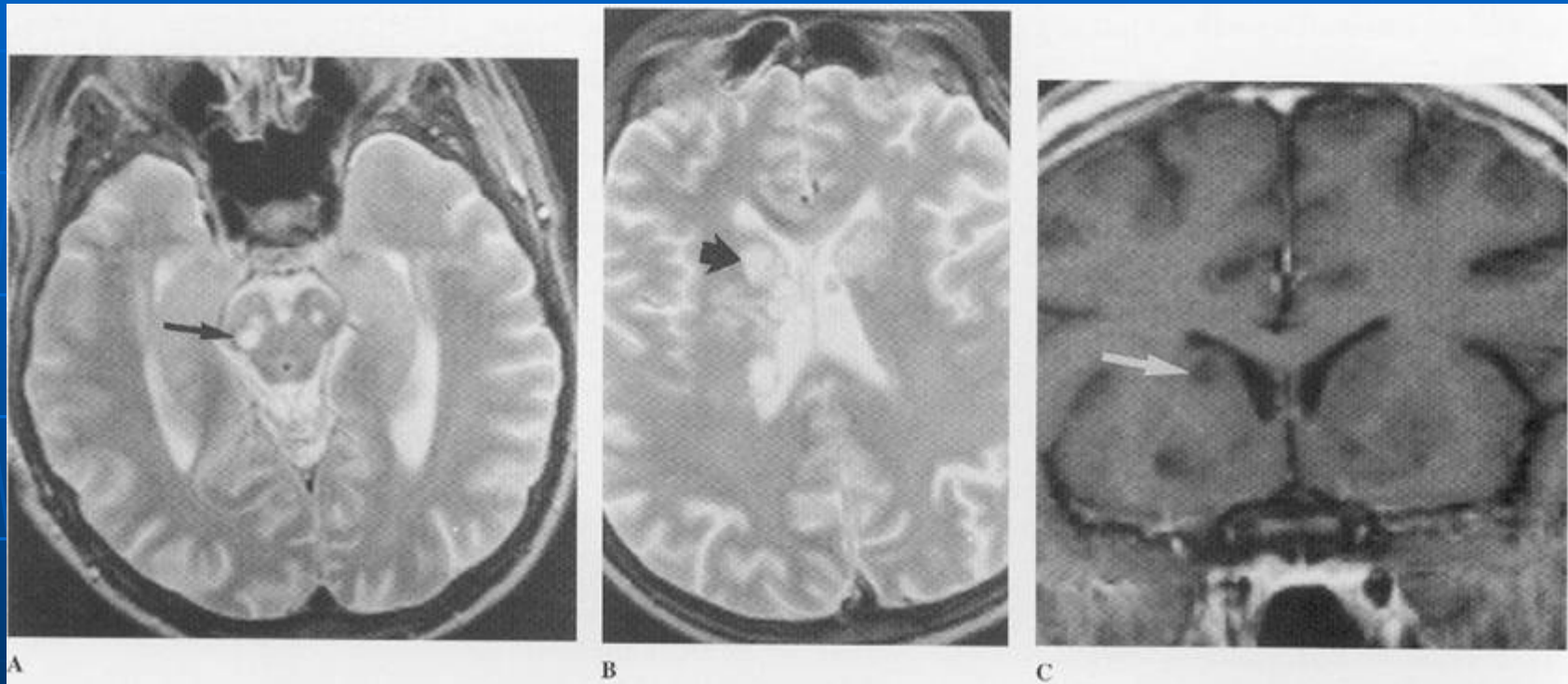
- Gross consolidation and cavitation over bilateral upper and middle zones
- the cavities contain air–fluid levels.

Cryptococcosis



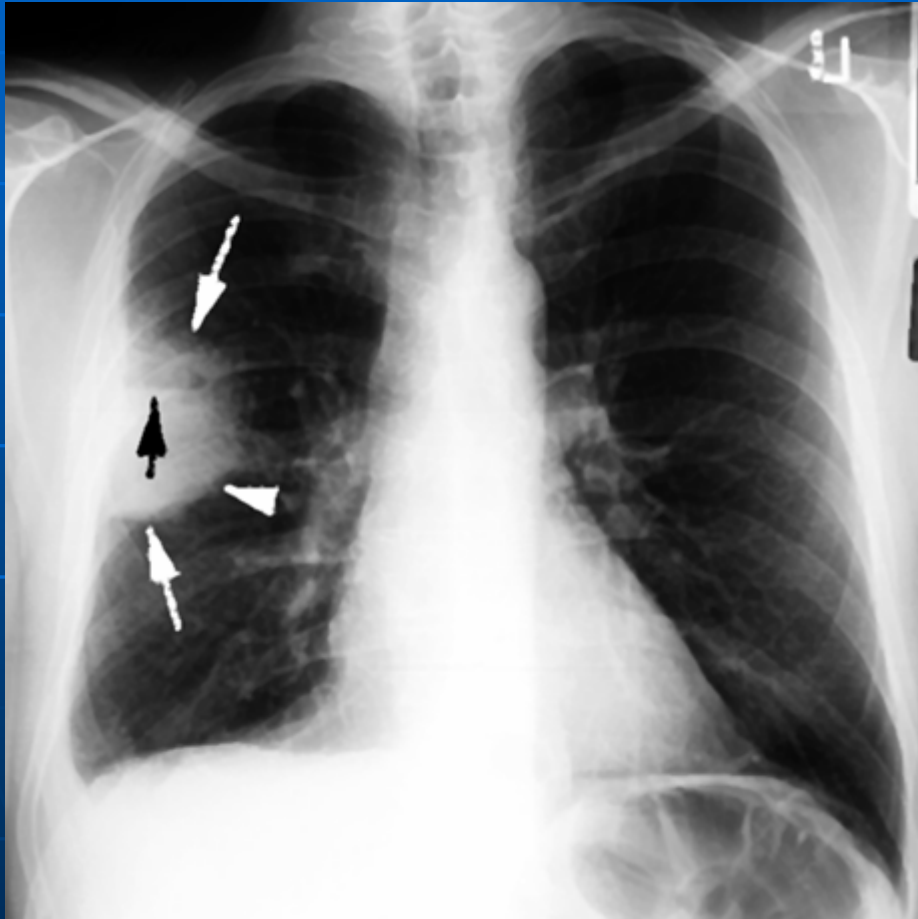
- Pulmonary mass, usually with ill-defined edge and sometimes cavitated
- Airspace consolidations
- Diffuse nodular or reticulonodular opacities

Cryptococcosis



- a **cryptococcoma** in about 10% of cases
- High density on T2 weighted images
Low density on T1 weighted images

Lung abscess



- Spherical shape
- Acute angle related to chest wall
- Air-fluid level (black arrow)
- Thick, nonuniform, irregular wall
- Surrounding consolidation (white arrow)

Lab data

94/12/29

- AFP: 1.48 ng/ml
- CEA: 3.13 ng/ml
- CA153: 10.89 U/ml
- CA199: 36.60 U/ml
- WBC: 5000 /ul
- HB:14.6 g/dl

Lab data

- ESR: 54 mm/1hr (M 0-10; F 0-20)
- ESR: 100 mm/2hr (M 0-20; F 0-40)
- Acid-Fast stain(-)
- TB culture: no growth
- MTB complex PCR: (-)
- cryptococcus Ag: (-)
- CT-guided biopsy of the nodule:
granulomatous inflammation

Impression

- Solitary pulmonary nodule s/p CT-guided biopsy with granulomatous inflammation r/o pulmonary TB
- Left osteoarthritis s/p total knee replacement

Treatment

95/01/09

- Ethambutol 400mg 2# qd
- Rifater 5# qd/ac
- Pyrazinamide 500mg 3# qd
- INAH 300/day

2006/01/03



2006/03/07



Treatment

95/03/07

- Rif 450/day
- INAH 300/DAY

95/07/06

- Stop anti TB med

2006/03/07



2006/07/25



Discussion

Tuberculosis(TB)

- Cause: *Mycobacterium tuberculosis*
- Reservoir: only human
- Transmission: airborne droplet nuclei

Tuberculosis

- Primary tuberculosis:
 1. The first infection with *Mycobacterium tuberculosis*
 2. Usually in childhood
- Post-primary tuberculosis:
 1. Believed to re-infection
 2. In adults

Symptoms and Signs

Symptom:

- Productive cough
- Fever
- Weight loss
- Hemoptysis
- Chest pain

Sign:

- Abnormal breathing sound

Lab studies

- Sputum smear (acid-fast stain)
- Sputum culture
- DNA PCR

Image

	Primary	Post-primary
Inactive	Normal radiograph	Normal radiograph
	Scarring (any site) + sequelae	Scarring (restricted site) + sequelae
	Calcification (nodes, lung)	Calcification (lung, nodes, pleura)
Indeterminate activity	Tuberculoma	Tuberculoma

Image

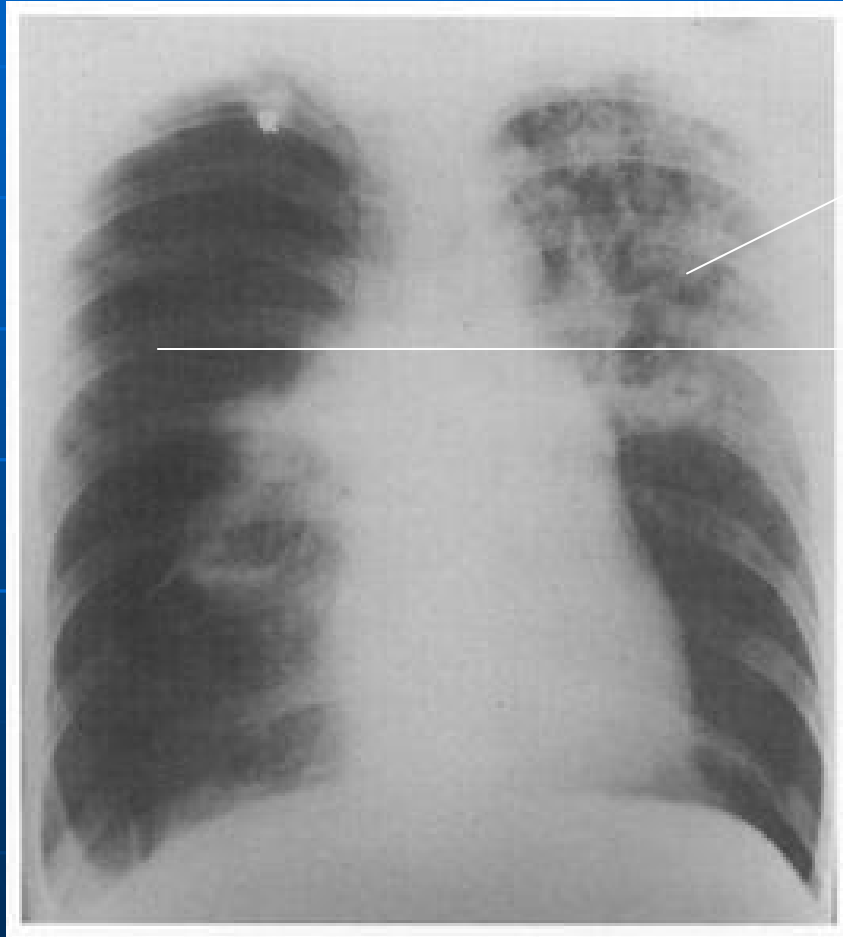
	Primary	Post-primary
Active	Consolidation (any site)	Consolidation (restricted site) Cavitation (restricted site)
	Adenopathy + sequelae	Endobronchial lesion + sequelae
	Effusion (pleural, pericardial)	Effusion (pleural, pericardial)
	Miliary tuberculosis	Miliary tuberculosis
	Other (e.g. bone)	Other (e.g. bone)

Primary tuberculosis



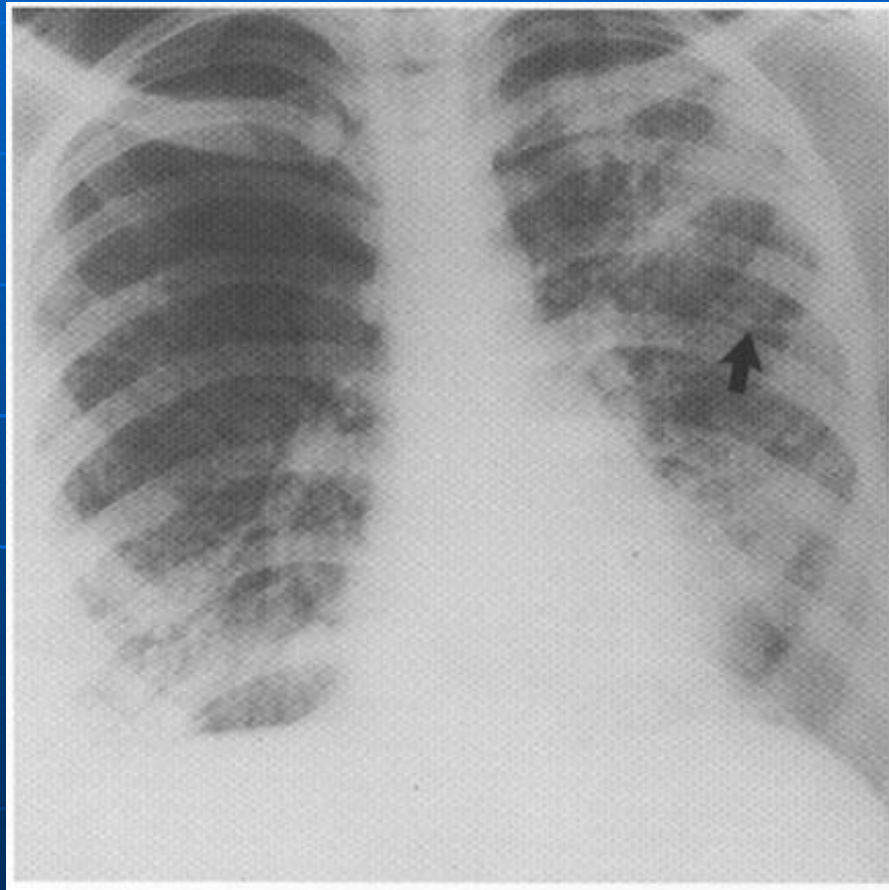
- Primary tuberculosis effusion
- invariably unilateral and commonly large and painless.

Post-primary tuberculosis



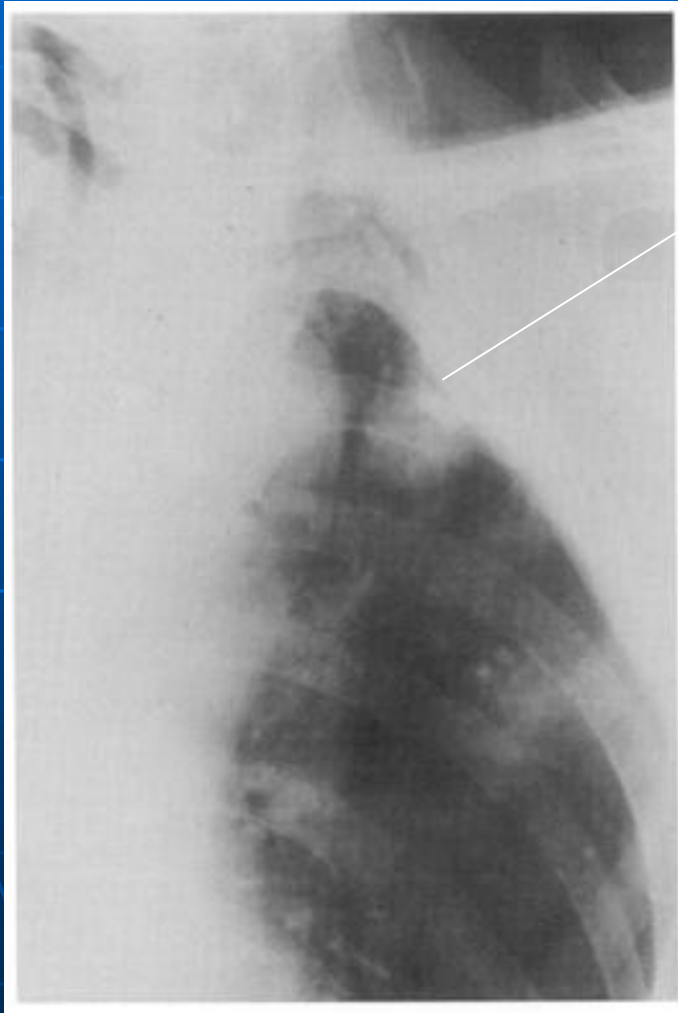
- nodular and linear shadows over left upper and middle zones.
- pneumothorax secondary to cavitory disease

Post-primary tuberculosis



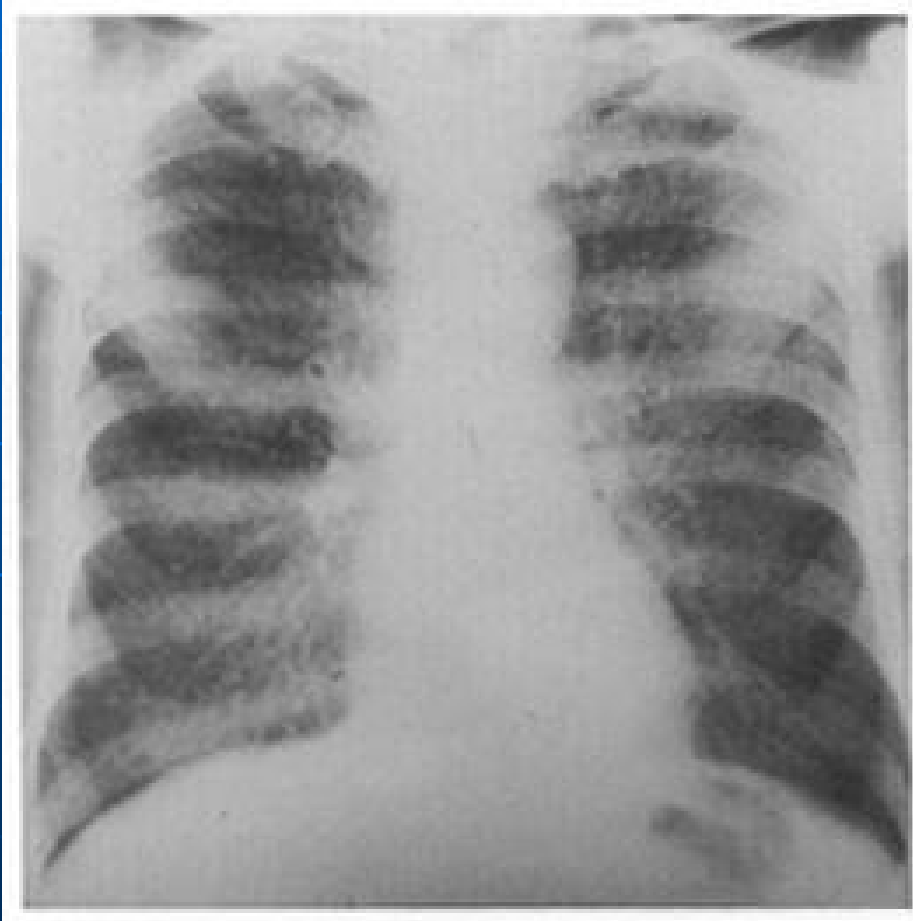
- Numerous 5 mm nodular shadows in both lungs
- tuberculous bronchopneumonia

Post-primary tuberculosis



- **tuberculoma**

Miliary tuberculosis



- Diffuse nodulation
- Nodules are approximately 1 mm in diameter and well defined.

Treatment

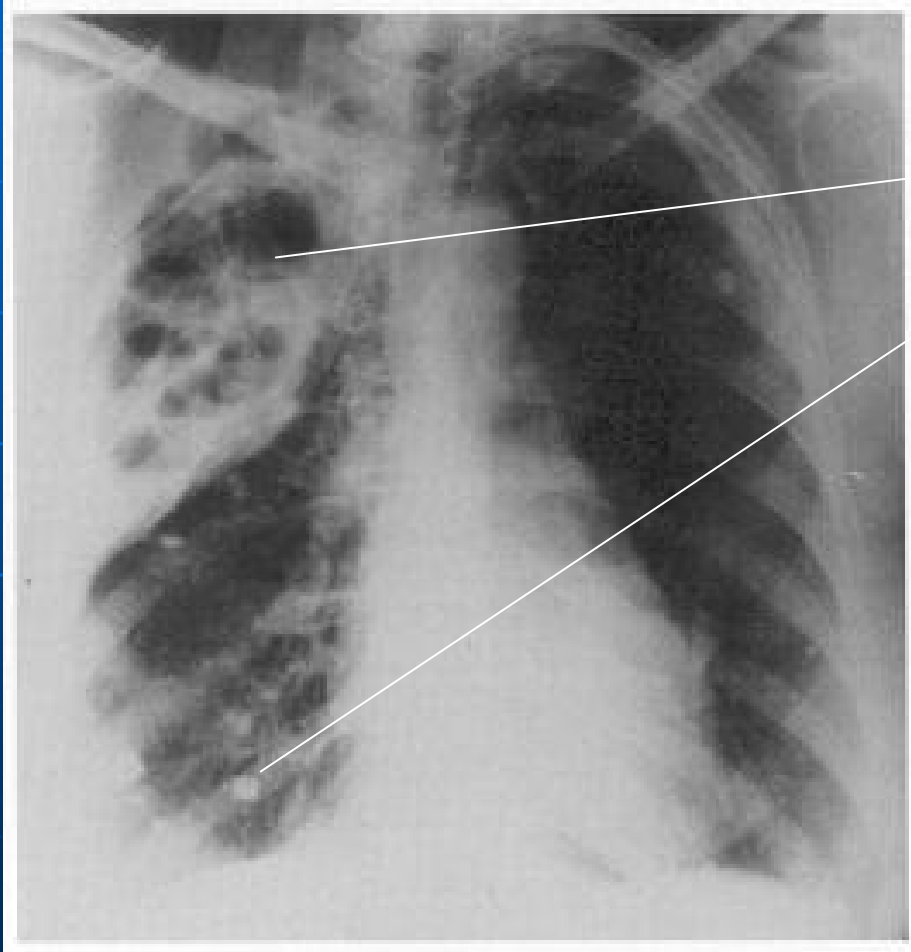
- Resistance to Isoniazid > 4%:
 - (1) 4-drug regimen: INH, rifampin, pyrazinamide, and either ethambutol or streptomycin
 - For a fully susceptible patient:**
 - (a) ethambutol (or streptomycin) could be discontinued.
 - (b) After 2 months of therapy, then INH plus rifampin for 4 months
 - For a patient, resistant to INH**
 - (a) rifampin, pyrazinamide and ethambutol for entire 6 months
- Therapy must be extended, while the P't has (1) cavity disease and (2) remained positive culture after 2 months of treatment.
- Directly observed therapy (DOT)

Treatment

Surgical care:

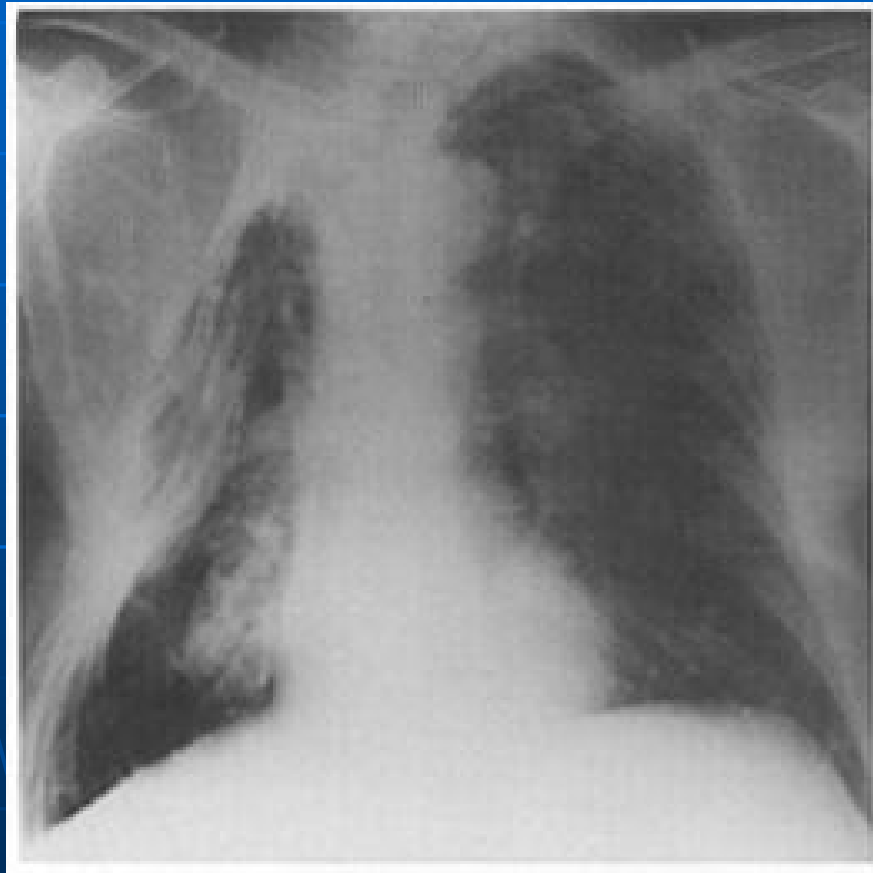
1. Segmentectomy (rare)
2. Lobectomy
3. Pneumonectomy
4. Pleurectomy (rare)

Plombage



- Right apical plomage with lucite balls, some of which contain air–fluid levels
- Bilateral calcified nodules are consistent with previous tuberculosis

Thoracoplasty



Prognosis

- Relapse rate: 0-4% within the first 2 years
- Most recurrent TB:
reinfection rather than reaction