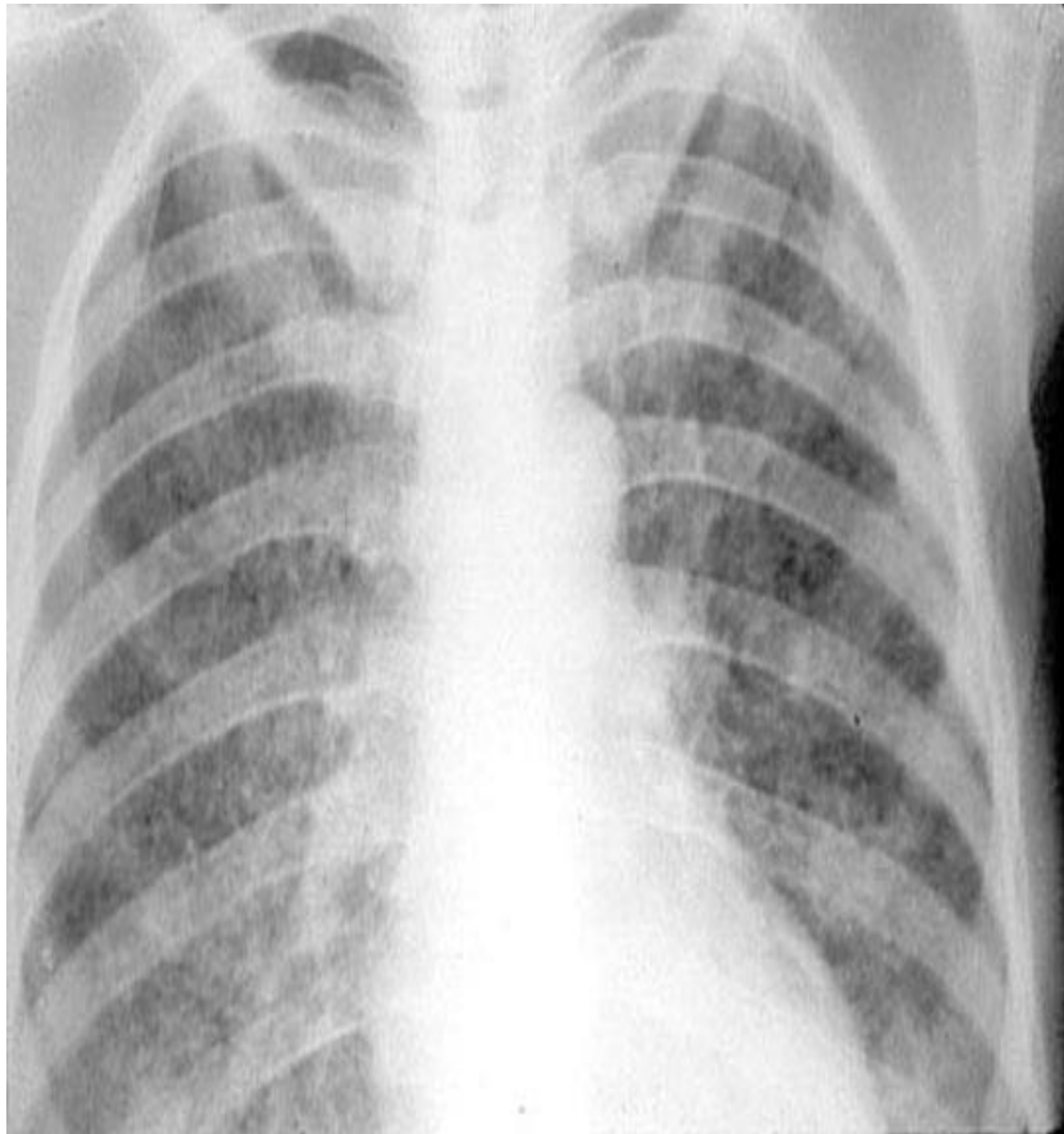
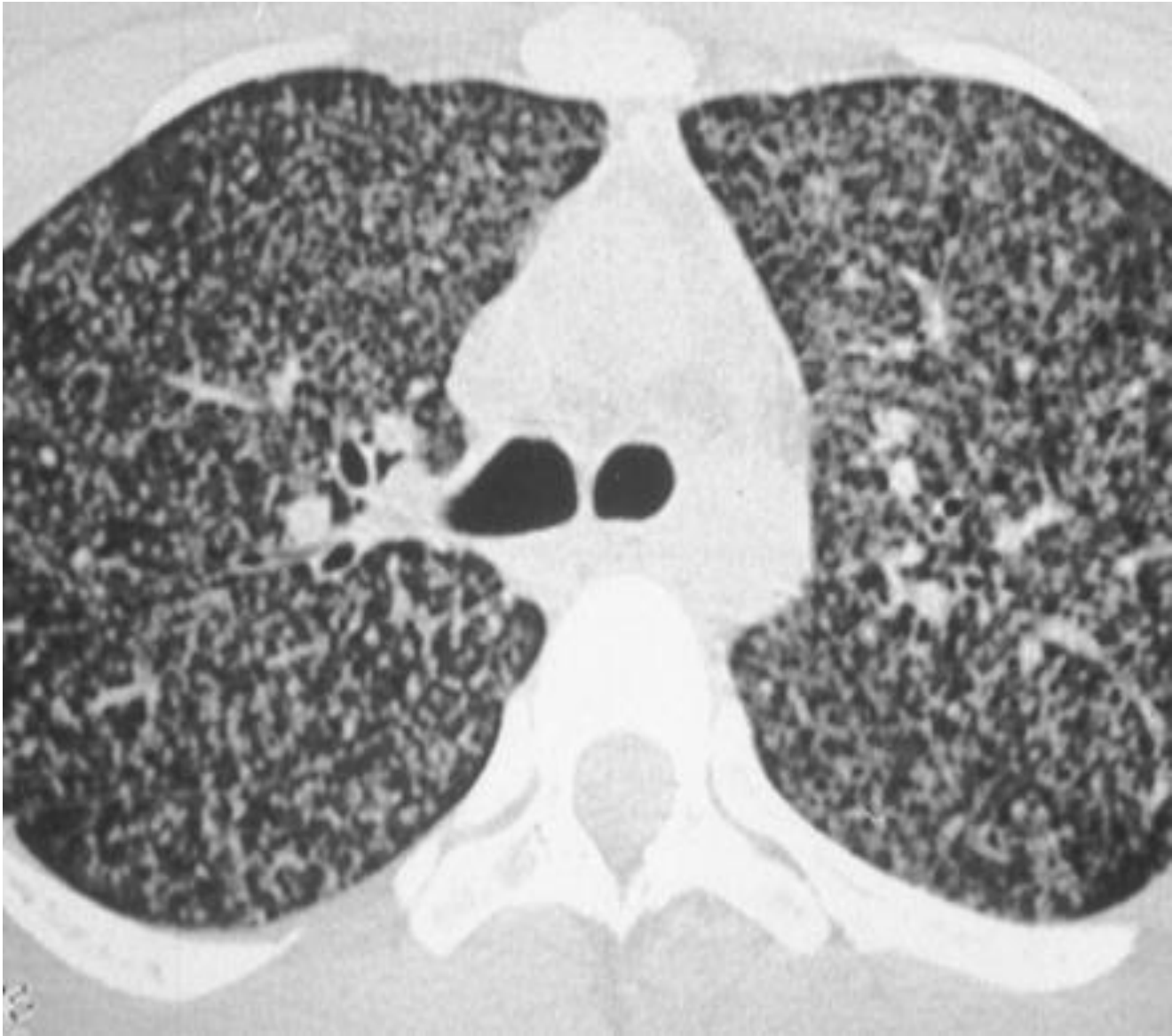


- 35 year old lady with fever and dry cough for 3 weeks.
- Night sweats
- Weight loss 5 Kg
- No history of contact with TB
- Clinical examination
 - Mildly unwell

Investigation

- FBC normal
- **ESR 53**
- U and E normal
- LFT – normal
- **CRP 40**
- **CXR**
- **Induced sputum**
 - Smear negative



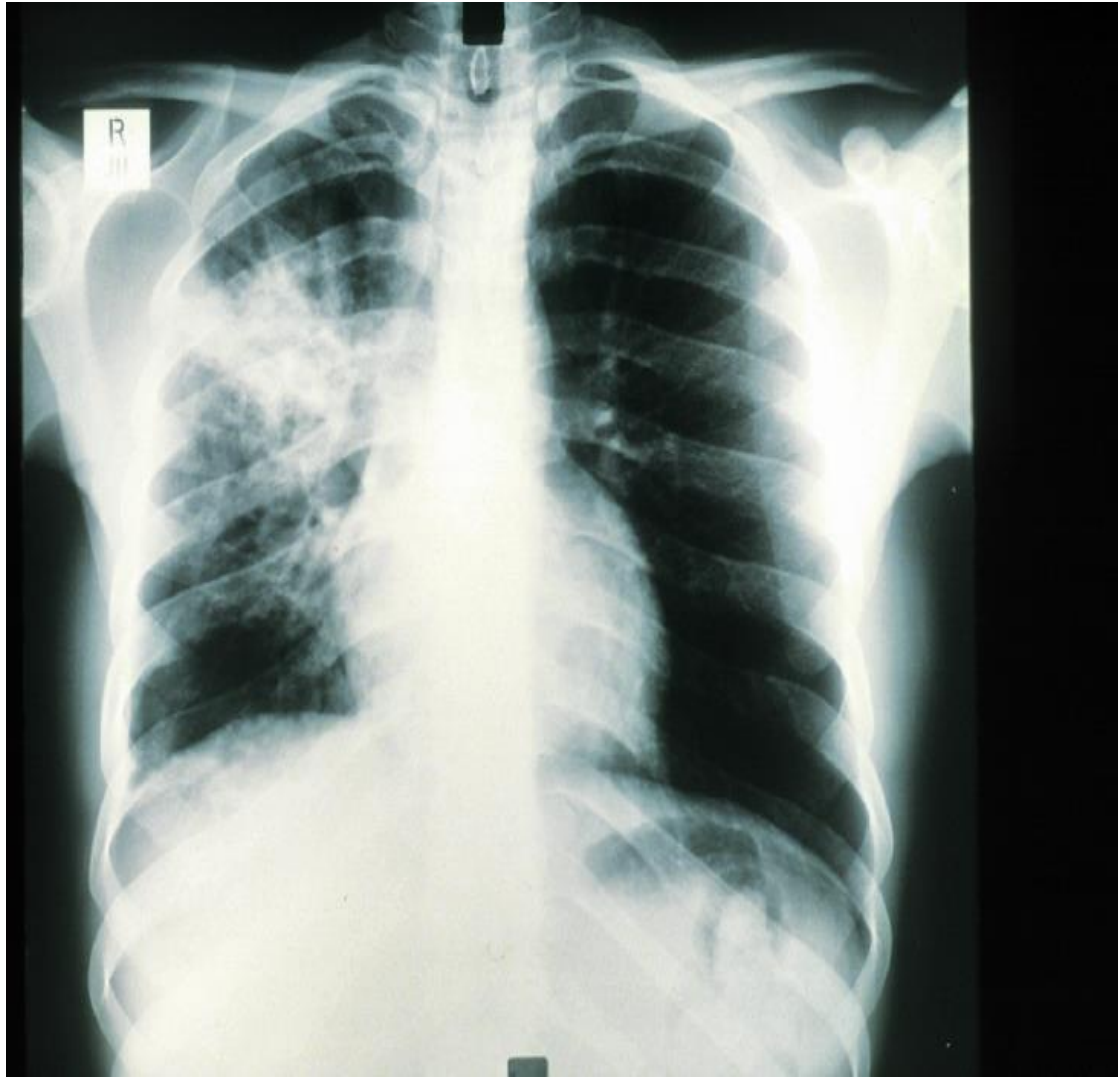


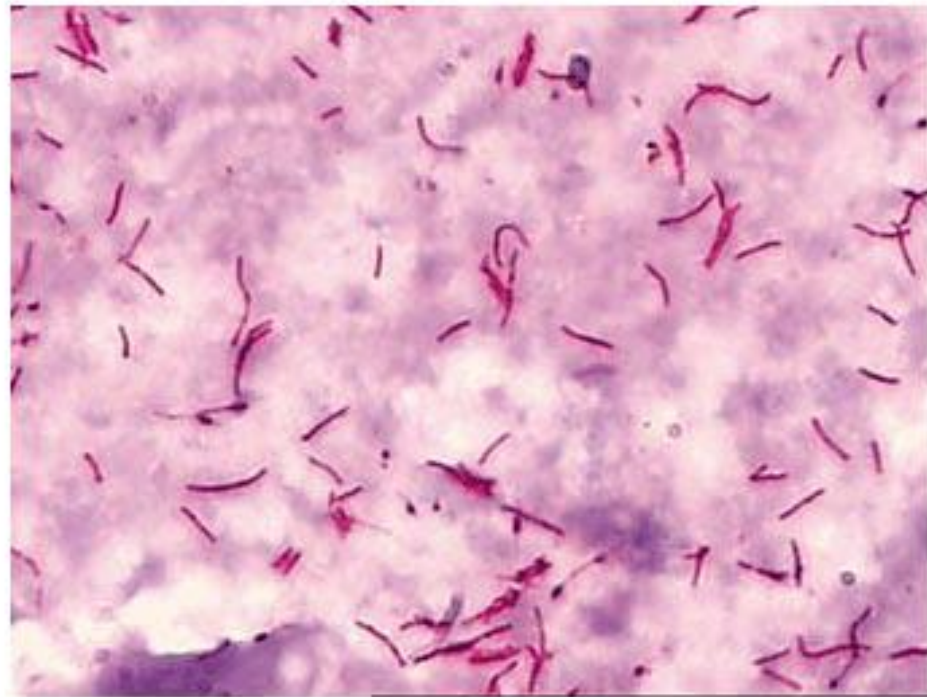
Progress

- Clinical diagnosis of TB
 - 4 drug treatment
 - Clinical improvement
- TB culture
 - positive at week 3
 - fully sensitive (week 5)

Case 2

- 30 year, male
- Presenting complaints
 - Fever, productive cough
- Clinical examination
 - R sided signs
- Investigations





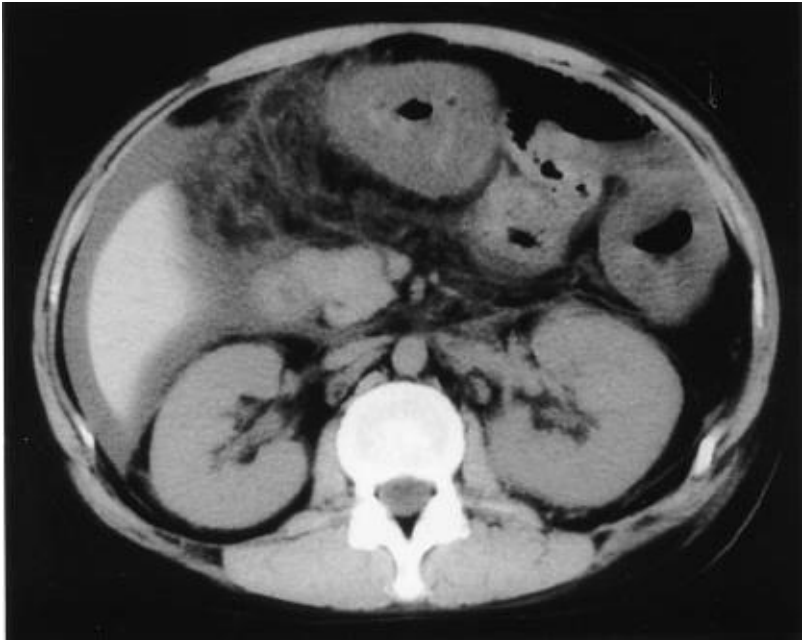
Case 3

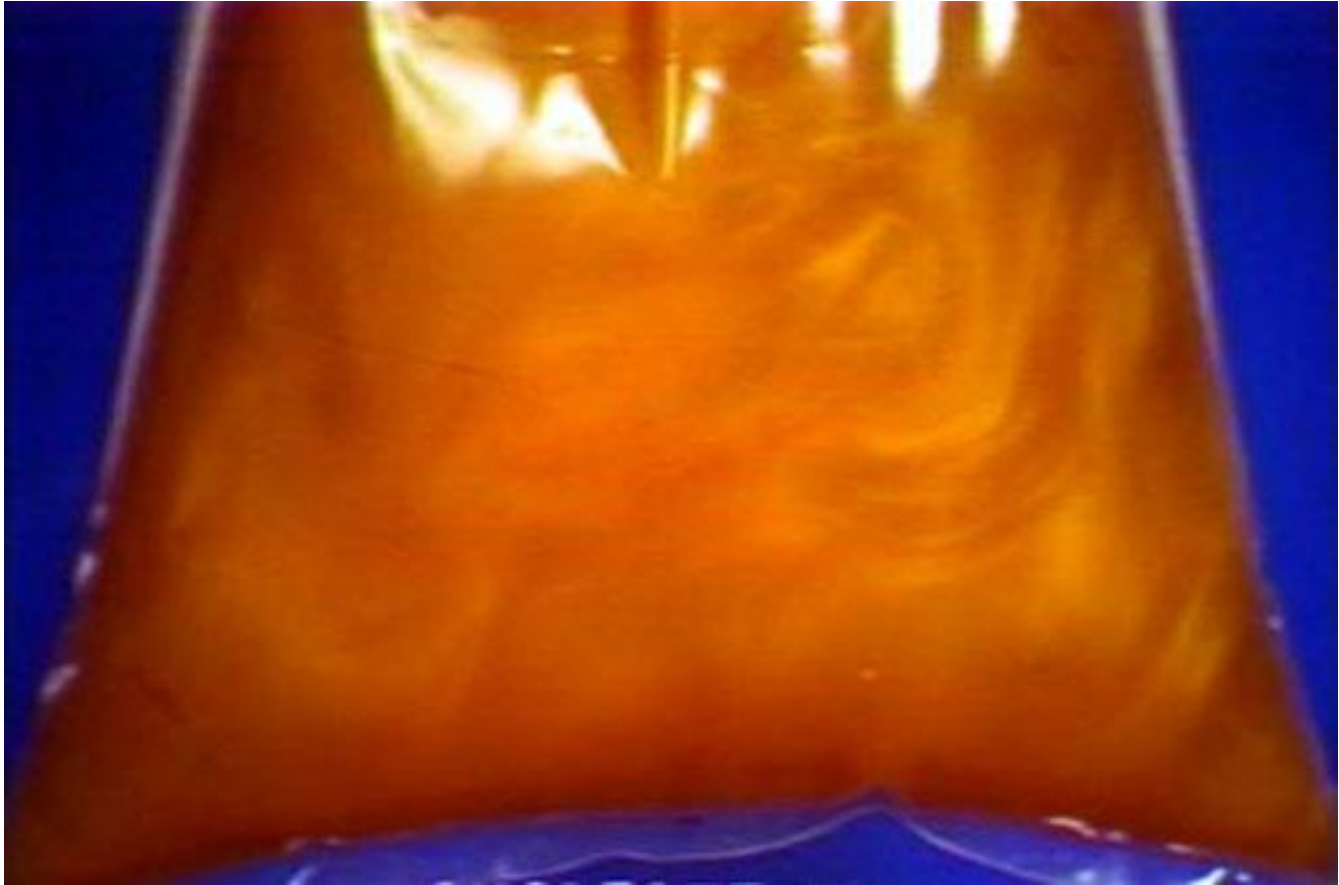




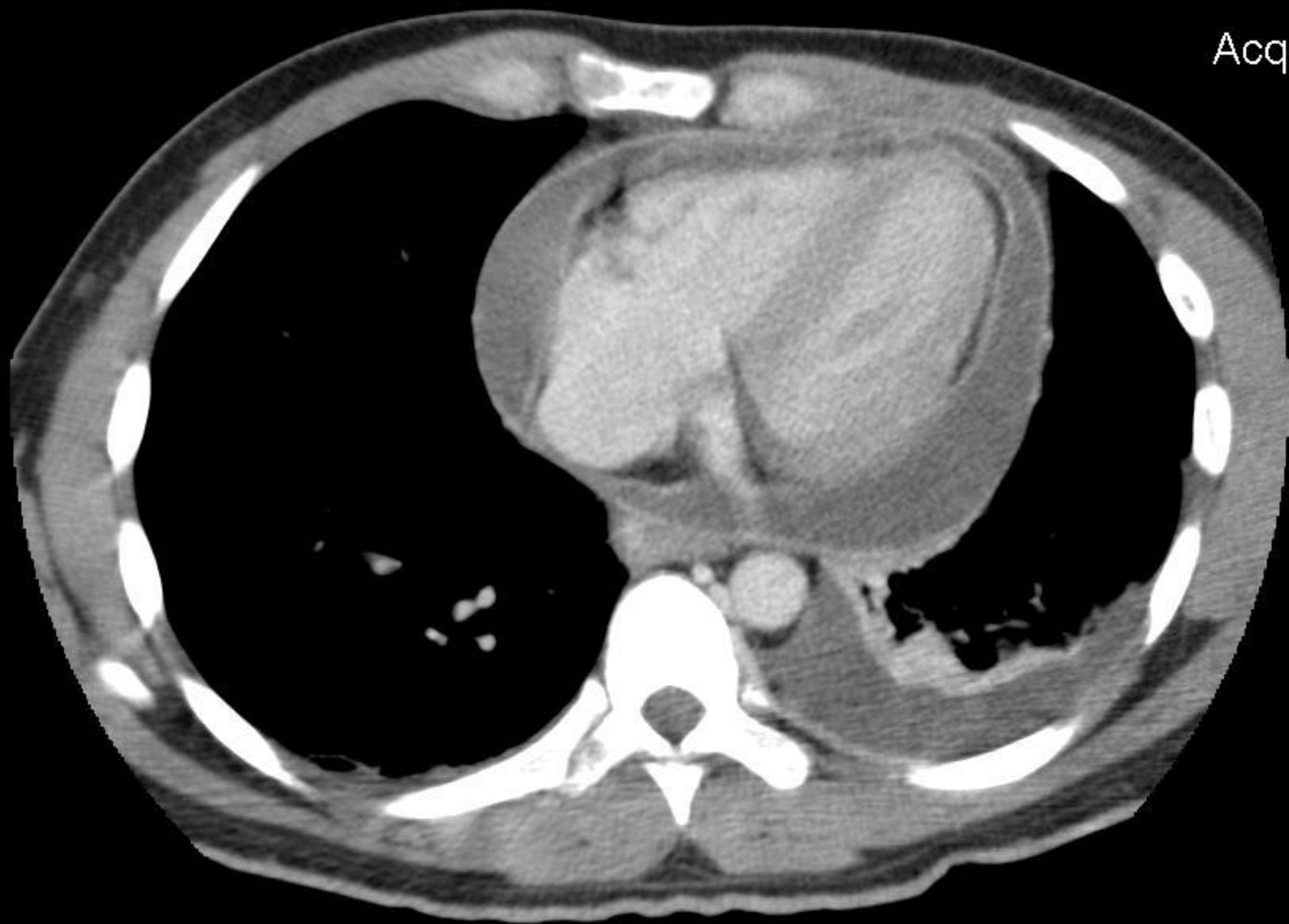
Case 4







Acq Tm



History

- Prehistoric Times
- 5,000-1000 B.C.: People began gathering in “urban” areas. Egyptian mummies showed evidence of TB.
- 4,000 B.C.: Indo-europeans of the copper and bronze ages, tracked by the evolution of language, move and settle areas from Northern Europe to India.
- Peak occurrence of TB in Greece 700-500 BC.
- Indo-europeans were cattle herders. The TB bacillus that infects humans is thought to have evolved from a bacillus carried by cows.

Clinical Aspects of TB

- Pathogenesis of tuberculosis: host & pathogenic factors
 - Host factors
 - Social e.g.
 - Poverty
 - alcoholism
 - Age e.g.
 - Baby
 - Teenage girl
 - Old age
 - Immunity e.g.
 - HIV
 - Malnutrition
 - DM
 - Pathogen factors
 - Virulence factors
 - Drug resistance

Pathogenesis

- MTB into lungs (or to cervical nodes or abdo. nodes)
- Replication of organisms
- Primary complex (lung and mediastinal lymph nodes)
- Mycobacteraemia with potential for 'seeding'
- Consequence of tuberculous **infection**
 - Symptomatic illness – **disease** (minority)
 - immunological control (majority) with Ghon focus on Xray. Infection is 'contained' by granuloma but not eliminated

Clinical features

- Clinical illness
 - Pulmonary
 - Extrapulmonary

Clinical illness

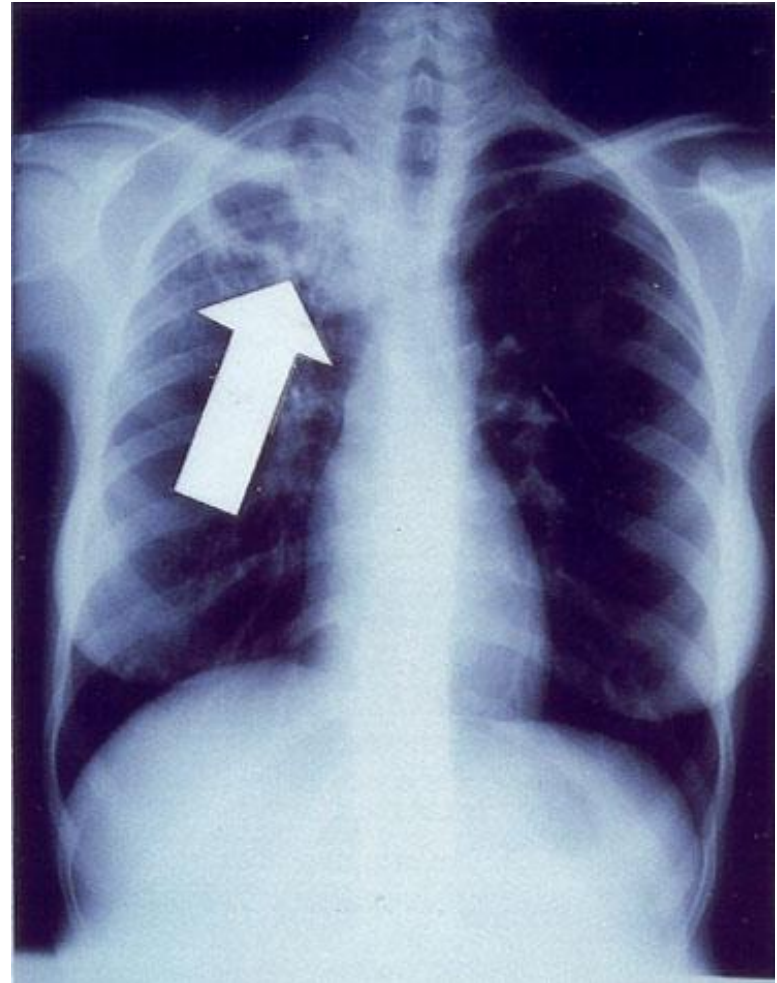
- Chest
 - Pulmonary
 - Pleural
 - Mediastinal nodes
 - pericardium
- Extra pulmonary
 - skin and soft tissues (including lymph nodes)
 - Bone
 - Abdominal
 - Intra cranial
 - other

Clinical Features, Diagnosis

Chest radiography

Chest radiography

- Abnormalities often seen in apical or posterior segments of upper lobe or superior segments of lower lobe
- May have unusual appearance in HIV-positive persons
- **Cannot confirm diagnosis of TB!!**



Classic adult TB CXR

- PA view
 - diffuse parenchymal disease with multiple cavities and bulla formation on the left
 - Sputum smear was positive for AFB



Bacteriologic Exam

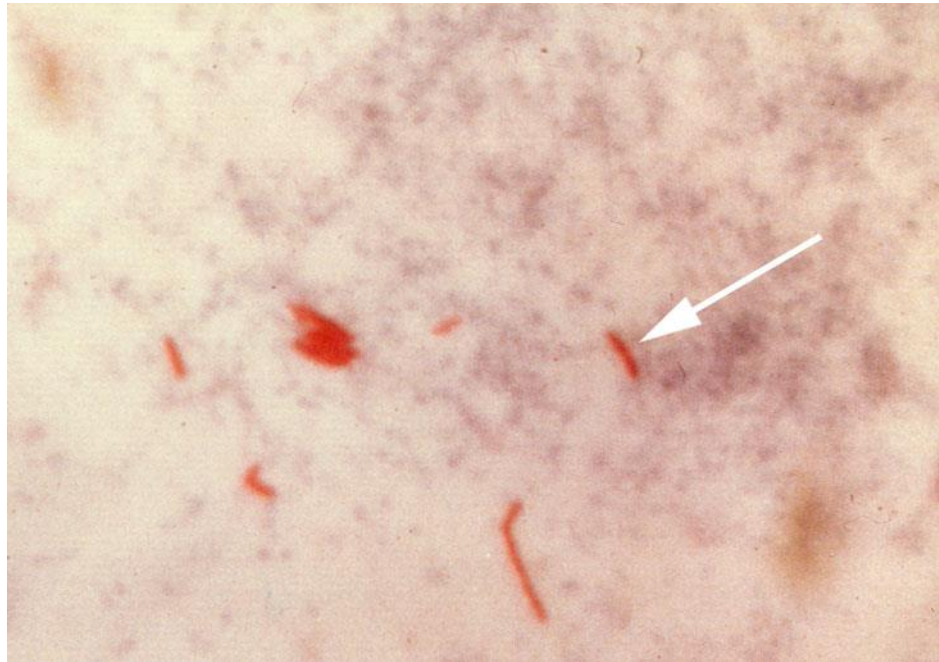
Smear Examination

- Strongly consider TB in patients with smears containing acid-fast bacilli (AFB)
- Results should be available within 24 hours of specimen collection
- Presumptive diagnosis of TB
- Not specific for *M. tuberculosis*

AFB Smear

- Sputum smear microscopy allows a rapid, inexpensive and reliable identification of patients with pulmonary tuberculosis (PTB) where there are more than 5000 bacilli/ml of sputum.
Sensitivity: 40-70%
- Specificity: 90%

AFB smear



Open tuberculosis

- A tuberculous ulceration or other form of tuberculosis in which **tubercle bacilli are present in the excretions or secretions.**
- **Pulmonary tuberculosis, especially with cavitation.**

Cultures



Cultures

- Sensitivity: 80-85%
- Specificity: 98%
- Times needed:
 - Solid medium
 - 4-8 wks
 - Liquid medium
 - 2 wks

Treatment

- **2 Groups depending upon the degree of effectiveness and potential side effects**
 - **First Line: (Primary agents)**
 - *are the most effective and have lowest toxicity.* Isoniazid, Rifampin, thambutol, Pyrazinamide, Streptomycin.
 - **2nd Line**
 - *are less effective and most toxic.* Amikacin, Kanamycin, Capreomycin, Viomycin, Kanamycin, Cycloserine, PAS

New Cases

- Patients who have never received treatment for tuberculosis or taken it for less than one month. This group includes the following:
 - Smear positive pulmonary tuberculosis.
 - Smear negative pulmonary tuberculosis.
 - Extra-pulmonary tuberculosis.
- The treatment for this group of patients should be 6 months short course chemotherapy (SCC).
- 2HRZE/4HRE

Monitoring

Perform Sputum Exam	Treatment regimen 6 months
At the end of the initial phase	The end of 2nd month
During the continuation phase	The start of 5h month
At the end of treatment	The end of the 6th month

Retreatment

- Check for resistance
- 6 HREZ
-

Monitoring

Perform Sputum Exam	Treatment regimen 6 months
At the end of the initial phase	The end of 2nd month
During the continuation phase	The start of 5h month
At the end of treatment	The end of the 6th month

Problems of TB therapy

- Toxicity e.g. liver
- Multiple therapy
- Prolonged treatment
- Drug interactions

Prevention

- Early detection
- Education and screening
- Engineering controls
- Personal hygiene and isolation of infected cases.

Take Home Message

- Non-specific symptoms
- Often over diagnosis
- AFB smear
 - Rapid diagnosis, presumptive diagnosis
- Culture
 - Gold standard, more sensitive

Thanks for your attention!