Chapter 4
Man 80 years old. Weight loss and asthenia, no sputum available.
No improvement with ceftriaxone treatment.
Bilateral non homogeneous alveolar opacities. Probable cavities in the left superior lobe. AFB positive in bronchial aspiration after bronchial endoscopy: **TB pneumonia**
Man, 32 years old. Admission in the emergency unit for life threatening hemoptisy. Past history of TB treatment many years ago but no information about duration and type of treatment. Improvement with glypressine IV.
Chest X ray: fibrotic and retractile picture of the upper lobe with ascension of the minor fissura (red arrow). Possible associated bronchiectasis. Notice also ascension of the right diaphragm and right hilus:

**TB sequela.** AFB negative; no need of new TB treatment. But high risk of repetition of life threatening hemotisy: Lobectomy with surgical excision of the sequela area has to be discussed
Scan view of the previous case: TB sequela with bronchiectasis is confirmed.
Man, 34 years old, repeated bronchial infections with purulent sputum. Repeated AFB negative. Notion of severe lung disease in childhood.
Chest X ray: Alveolar opacities in the inferior lobe with round not well limited cavities. Clinical context with such radiological aspect suggests Bronchiectasis (TB sequellae, or measles, or wooping cough during childhood).
Scannographic view of the previous case
Case 4

Young man, dyspnea and non productive cough. Extreme weakness and weight loss. HIV positive

Courtesy Dr Peo Setha Cambodia
Association of middle lobe atelectasis, alveolar picture around left hilus with cavity, diffuse nodules in the 2 lungs: It is TB (too weak to produce efficient sputum for analysis. Probable hilar adenopathies. This association of different type of tb lesions are very frequent in case of TB/HIV
Man, 60 years old. fever and repeated hemoptoïc sputum. Past history of TB treatment a long time ago but no more precision about date and duration. Repeted negative sputum for AFB.
Typical aspergilloma in upper left lobe (notice round cmass surround par clear crescent): TB sequella. No need of TB retreatment. In this case surgical treatment (lobectomy) has to be considered.
HIV neg. Cough and fever AFB negative in sputum. Tuberculin skin test positive 18mm. Sister treated for TB
Probable left TB infiltrate with negative microscopy
Man, HIV+, severe dyspnea, increasing progressively for 2 weeks; nearly normal auscultation, SaO2 86%
Chest Xray: **diffused interstitial and alveolar picture.** The most probable diagnosis is **pneumocystosis.** Cotrimoxazole and corticosteroid treatment must be began without delay, with oxygenotherapy.
Woman, HIV positive, non productive cough and worsening condition. Probable severe immunodepression.
Chest X ray: diffuse nodules and macronodules, no cavity, and enlargement of the mediastinum, suggesting mediastinal adenopathies. The most probable diagnosis is **TB in HIV context** with severe immunosuppression. In another clinical context, this picture could also suggest carcinomatous miliary.
Fever, cough and hemoptoïc sputum for few weeks.
Worsening condition and weigh loss.
1° Opacity of the right superior lobe. This opacity is alveolar: non homogenous, not well limited and systematised: the inferior edge is limited by the small fissura (yellow arrows). There is a cavity in the opacity.

2° on the left side, alveolar picture or infiltrate in the retroclavicular area. The bilateralility and the aspect of the lesions are indicative of TB. AFB in sputum should be positive and confirm the diagnosis because of the cavity in which bacilli are very numerous and in communication with airways.
Woman, 60 years old, past history of TB more than 10 years ago.
Chronic cough with abundant sputum. Repetet AFB negative.
No improvement with TB retreatment.
Chest X ray: Retraction of the right hemi-thorax with many round cavities with fluid fluid levels: Typical pictures of **diffused bronchectasis, sequellae of TB.** If AFB neg, no need of retreatment
Woman, worsening condition, cough and dyspnea. Past history of pelvic tumor.
Lung metastasis (leiomyosarcoma)
Case N°12

Dyspnea increasing progressively and anterior thoracic pain.

Courtesy Dr Van den Homberg-Tanzania
This enlargement is nearly symmetric between the left edge (incompletely seen) and the right one. The heart looks like a « callebasse ». This is highly indicative of a pericardial effusion, associated with left pleural effusion.

In the context of country with high incidence of TB, the most probable diagnosis is pleural and pericardial tuberculous effusion.
Chapter 5
Man, 50 years old. Fever right thoracic pain and abundant purulent sputum
AFB negative
Chest X ray: round bulky excavated picture: **Bacterial non tb abcess**. Notice the same dimension of the fluid level on the front and the lateral view: the opacity is in the lung and grows like a sphere. So the dimension of the section materialised by the fluid level has the same dimension on the front view and the lateral view. Notice also, the sharpness of the internal limit and the blur of the external limit on the front view which also suggests bacterial abcess rather than cavited cancer.
Man, 36 years old, asthenia, weight loss, fever for few weeks, Purulent sputum.
Bacterial abcess, TB?
AFB positive in sputum: TB. Notice the associated infiltrate above the right inferior lobe cavity with fluid level. The association is very indicative of TB. This is the difference with the previous case.
Magnified view and scan view of the previous case
Fever, cough and dyspnea with left thoracic pain
Chest xray: complex opacity of the left lung with fluid level. Encysted pleurisy or pulmonary abcess? Lateral view gives the answer: the dimension of the fluid level is not the same on the front view and the lateral view (different from previous case N°7). The fluid level is in the pleural cavity: **encysted purulent pleurisy with pyopneumothorax**. Pleural drainage is necessary for recovery.
Scan view of the previous case
Man, worsening condition and dyspnea. Smoking more than 30 cigarettes /day for 30 years. AFB negative in sputum.
CXR: non cavited opacity of the left upper lobe and enlargement of the superior mediastinum with filling of the left aorto pulmonary window, suggesting adenopathies.

On the lateral view, one can see partial atelectasis of the superior left lobe (culmen segment) and mediastinum adenopathies.

TB is not impossible but improbable: no cavity in the upper left lobe opacity, no associated nodules, and AFB negative. The most probable diagnosis is **bronchial cancer with mediastinal metastatic nodes**. Bronchoscopy is required for confirmation of the diagnosis.
Previous case. Elargment of mediastinal nodes and partial atelectasis of upper lobe

Normal lateral view
Scan view of the previous case: bulky neoplastic mass of the left upper lobe with direct extension in the mediastinum, and neoplastic adenopathies.

(Cxr taken in supine position, because of severe weakness)
Chest X ray: bilateral alveolar syndrome with enlargement of cardiac silhouette (but chest x ray in supine position, not perfect quality, and emphasizing enlargement of mediastinum).
Cardiogenic acute pulmonary oedema. Quick improvement with diuretic and anti arterial hypertension treatment
Man, dyspnea and worsening condition. Past history of prostatic cancer.

Chest x ray: abundant pleural effusion pushing back mediastinum. Punction; sero fibrinous fluid
Chest x ray of the previous case after drainage and hormonal treatment. Notice the round opacities around the thoracic wall: **residual encysted pleural effusion**
Scan view of the previous case: encysted pleurisy (red arrows)
Chest X ray of the previous case after 6 months of hormonal treatment.
Woman, chronic cough with morning abundant sputum. Repeted bronchial infections and frequent antibiotic treatment.
CXR: typical railway picture in the right inferior and middle lobe with associated round cavities, : *Bronchiectasis*
Scan view of the previous case: typical aspect of localised bronchiectasis.
Chronic severe exercise dyspnea for several years. Decreasing of respiratory sounds at auscultation and tachycardia. Past history of pleural effusion and tobacco use.
Difficult CXR with associated patologies:
- retractile picture of the left apex and ascension and putting out of shape of the diaphragm
- hypertrophy of the left and right pulmonary arteries, with thoracic distension.
- probable diffuse pleural thickness, sequella of tb pleural effusion (false aspect of ground glass attenuation of the lung fields)

Association of probable TB sequella with emphysema and pulmonary arterial hypertension.
Man 72 y. Cough, worsening condition with weight loss and dyspnea

AFB neg

Would you prescribe TB treatment to this patient?
Round bulky opacity, without excavation. Its **not TB**.
It is a bronchial cancer.
No need of TB treatment.
Man, 45 years old, dypnea and cough with fever. Worsening condition.
Normal auscultation. AFB negative in sputum.
This miliary is difficult to see. A good quality CXR and careful analysis is required. If not, the diagnosis can be missed. Notice the contrast between severity of clinical context and few radiological signs.
Man, 54 years old, heavy smoker. Non-productive cough, CXR April 2009
Same patient, dec 2010, persistant non productive cough

Probable right hilar adenopathy
Same patient, April 2012, persistent cough and slight right posterior thoracic pain

Right inferior lobe atelectasis
Same patient Dec 2012, persistent cough, right thoracic paint ant weight loss with worsening condition

Right inferior lobe and middle lobe atelectasis. Cancer developed in the intermediate bronchus. Cancer was already visible in the right hilus area on the CXR of Dec 2010 but missed by radiologist and clinician...
Scan view of the previous case
Woman 56 years old, smoker, worsening condition and dyspnea. Left supra clavicular adenopathy.
Chapter 6
Chronic cough and exercise dyspnea.
Right, well limited opacity, in contact with the right edge of the heart: it is a middle lobe opacity. It is a retractile opacity, because of attraction of the mediastinum on the right side, and attraction of the small fissura (yellow arrows): middle lobe atelectasis.

It is associated with alveolar opacities of the right inferior lobe, and right hilar adenopathies (red arrow). TB with tuberculous pneumonia of the right inferior lobe and middle lobe atelectasis is possible. Sputum analysis for AFB must be performed to confirm the diagnosis. Bronchial cancer with atelectasis and metastatic adenopathies is also possible.

Courtesy Dr Jan Van Homberg - Tanzania
Assymptomatic patient. Active case finding in jail in Laos.
Do you think this CXR is normal?
Bilateral Tb infiltrate, left side predominant. No sputum no symptom. Nevertheless in such case you must consider tb treatment, eventually after first line antibiotic treatment if no improvement in radiological aspect. There is a high risk, in case of no TB treatment that this patient develop in the future important cavited and contagious TB.
Man, poor social condition, weight loss and denutrition. HIV negative. Cough and hemoptoïc sputum. AFB negative. No improvement with amoxicillin. Do you prescribe TB treatment?
Chest X ray: alveolar picture and infiltrate of the 2 upper lobes: Tuberculosis of the 2 upper lobes: TP M-
Young man, 24 years old. Living with a friend who has been treated for TB. Slight fever and cough. No AFB in sputum.
CXR: Typical **TB infiltrate** of the right axillary area. In such Tb lesions with no cavities, there is no AFB in sputum, because not many bacilli in the Tb nodular lesions. Nevertheless, without TB treatment, there is a very high risk of developing severe TB lesions in the future (between 10 and 20% of risk).
Previous case before treatment (left cxr) and after TB treatment (right cxr: very few sequellae)
Man, worsening condition, weight loss. AFB negative in sputum.
Chest X ray: not technically perfect, no good contrast (vessels and aorta not visible behind the mediastinum silhouette)

Association of micronodules and linear pictures from hili to peripheric area. Possible hilar adenopathies. TB is possible but improbable. This picture strongly suggest carcinomatous lymphangitis
Woman, 26 years old, left thoracic pain with fever and chills on productive cough. Quick onset of the symptoms. No past history of lung disease.
Chest X ray: technically perfect. Left alvolar opacity which erase cardiac silhouette on the left inferior arch, positive silhouette sign: the opacity is anterior, in the inferior part of the superior lobe (lingula segment). Clinical and radiological signs strongly suggest acute infectious pneumonia. Quick improvement with 3 g/day of amoxicillin...
Man, thirty years old, HIV positive, cough and fever for more than one month, worsening condition with dyspnea. No sputum available. No improvement with amoxicillin.
Chest X ray: alveolar opacity of the left upper lobe, with left hilar enlargement and filling of the aorto pulmonary space = probable adenopathies. (red arrow)

On the right side, alveolar opacity of the middle lobe and probable adenopathies of the right latero tracheal area and left aorto pulmonary space (yellow arrows).

HIV context + subacute context + bilateral pneumonia + mediastinum adenopathies = probable TB even if AFB is negative.
Man, cough, fever and worsening condition for 3 months, recent abundant hemoptisy.
CXR: Systematised pneumonia of the right superior lobe with 2 cavities inside. Notice the drainage bronchus of the superior cavity (red arrow). Most probable diagnosis is **active TB**. AFB positive in sputum. Notice the right hilar enlargement suggesting adenopathy.
Case 9

Context of HIV, Kaposi cutaneous lesions. Hemoptysis. AFB negative in sputum.
Notice the retractile cavity in the right lung, which is surrounded by an aeric cystis. Middle lobe atelectasis These pictures look like TB sequella. In the retractile cavity there is a round dense opacity which strongly suggests aspergilloma which has developed in a old sterilised TB cavity (yellow arrow)
Fever and weight loss. Repeted AFB negative in sputum.
Chest x ray: Right laterotracheal and hilar adenopathies: Biopsy (mediastinoscopy): **bronchial cancer** (small cell type). TB adenopathy could also be possible on this radiological aspect.
Scan view of the previous case
Man, Dyspnea and fever. Normal auscultation, No sputum
TB miliary
Man, 45 years old, dyspnea and weight loss. Sputum negative for AFB.
Bronchoscopy: bronchial cancer (carcinomatous milirary on CXR). Confusion with milirary TB is possible.
Previous case: multiple metastasis: bone, brain, and lung.
Notice the unequal size of nodules which is not the picture of TB miliary.