Bronchial syndrome

Atelectasis
Draining bronchus
Bronchiectasis

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Atelectasis

Consequence of the obstruction of a bronchus **intrinsic** (tumor, foreign body, inflammatory stenosis) or **extrinsic** (compression by adenopathy or tumor)

The alveolar air gradually disappears and the lung tissue is retracted.

The **retraction** can involve one segment, one lobe or the whole lung
Main etiologies of atelectasis

- Bronchial cancer
- Tuberculosis
- Extrinsic compression by adenopathy TB (++ children) or malignant
- Foreign body (++++ young children, not always Radio opaque)

Less common causes:
- Asthma
- Chronic bronchitis
- Viral or bacterial pneumonia
- Atelectasis after thoracic or abdominal surgery, after trauma
- Many other rare etiologies: benign tumor, endobronchial metastasis, lymphoma, granulomatous inflammation regardless of etiology, bronchiolitis, cystic fibrosis, ...
ATELECTASIS

The radiographic appearance is an opacity, like a consolidation but:

Systematized (in contact with a fissure)
Retractile (decrease volume)
Homogeneous
Without air bronchogram
With a variable size: a segment, a lobe, the lung
M 59 y. Hemoptysis
Smoking = 40 pack-years
AFB sputum negative
Atelectasis of the right upper lobe

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Endoscopy: neoplastic bud in the RUL bronchus
Male, 75 years old, smoker, chronic cough and one episode of hemoptisis.
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Right lower lobe atelectasis by bronchial cancer
Middle lobe atelectasis
Partial atelectasis of the right superior lobe by cancer
Man, 56 years old. High fever, right abdominal and thoracic pain, Muscular defense of the right hypochondrium, X-ray: Middle lobe atelectasis
Liver abscess: the reduction of right hemidiaphragm mobility leads to atelectasis above the diaphragm «passive atelectasis»
Smoker 60 pack-years. Hemoptysis, thoracic pain and dyspnea. AFB sputum negative.

Left upper lobe atelectasis by cancer.
RUL consolidation by cancer
Atelectasis in the process of constitution

Notice the association with a big hilar round mass
Smoker 40 pack-years Hemoptisis
Left anterior thoracic pain and cough.
Recent weight loss & asthenia - AFB sputum negative
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Left anterior thoracic pain and cough.
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Left upper lobe atelectasis by cancer
Notice the round mass on the left hilus
Atelectasis + round hilar mass:

- In adults = most often cancer
- In children = most often TB
1 year old child
TB primary
1 year old child
TB primary

Bilateral adenopathies, Left lower lobe atelectasis: compression of the left inferior bronchus by mediastinal adenopathies
Atelectasis plus hilar mass: - in adult is often cancer

But not always…
Look for AFB in sputum systematically
W 37 years old, cough and dyspnea.

AFB +
Classic retractile evolution with TB treatment
Opacity of the whole left lung field
Do you think this is an atelectasis of the left lung?
Opacity of the whole left lung field

Do you think this is an atelectasis of the left lung?

No

The mediastinum is pushed by the opacity

= Great abundance pleurisy
Whole left lung atelectasis
Atelectasis
Retraction
Pushing back
Compressive pleural effusion
Atelectasis
Retraction
Draining bronchus

- TB cavern +++
- bacterial nonTB abscess +/-
Small TB cavern with a draining bronchus associated with a lower lobe TB pneumonia

Silhouette sign
Opacity does not erase the left side of the heart
TB cavity
Notice the draining bronchus and right axillary infiltrate
Bronchiectasis

Bronchial disease characterized by a permanent increase in bronchial caliber

The cartilaginous framework of the bronchial wall is destroyed or broken up
A. Normal lung
B. Bronchiectasis

Bronchiectasis: etiologies

Located
• Pulmonary TB
• Bacterial / viral infection in children (measles, whooping cough ..)
• Foreign body
• Bronchial stenosis, extrinsic compression (adenopathy)

Diffuses
• Bacterial or viral infection in children (measles, whooping cough ..)
• TB
• Cystic fibrosis
• Other congenital diseases: Situs inversus, Imotile cilia Syndrome
• Dysglobulinemia, chronic immune deficiency, autoimmune diseases ...
Bronchiectasis: clinical features

- Bronchopulmonary infections repeated
- Hemoptysis
- Significant, Chronic and often purulent sputum, with AFB negative
- Frequent history of TB or Severe respiratory infection in early childhood

Bronchiectasis is a frequent and underestimated pathology, especially in countries with high incidence of TB and childhood lung diseases
Bronchiectasis radiological features

- Round or cylindric images (clarity with thick or thin wall)
- Sometimes with fluid level if active infection
- Localized in a lobe or a segment, or diffuse

The lipiodol bronchography is replaced by the scanner
Bronchectasis (opacification with iodin hydrosoluble solution)
Bronchiectasis
(opacification with iodin hydrosoluble solution)
W. chronic cough with morning abundant sputum. Repeated bronchial infections and frequent antibiotic treatments.

Typical railway picture in middle lobe & RLL with associated round cavities: 

*Bronchiectasis*
Another case

Railway picture: Middle lobe bronchiectasis
With CT scan the diagnosis is obvious. Bronchography is not available now, you don’t have scanner. You must be able to identify Bronchiectasis on CXR.
Unilateral bronchiectasis of the left lower lobe.
Bilateral bronchiectasis
Digital hippocratism is often associated with bronchiectasis
Female, 25 y, chronic cough and purulent sputum * 
Measles at the age of 6 years

* Bronchorrhea
Young woman, 20 y, repeated bronchus infections from a very early age, and gradual respiratory insufficiency.

MUCOVISIDOSIS
(1 case/ 2000 births in Europa)
Right severe bronchiectasis, Retractile sequela of extensive TB of the right lung

Bronchiectasis is very frequent and underestimated, in countries with high TB incidence
Bronchial syndrome

You must be able to identify
✓ Atelectasis
✓ Draining bronchus
✓ Bronchiectasis

Dilation of bronchus, Bronchiectasis

is a common disease with many etiologies:
✓ Sequelae of TB
✓ Effects of early childhood infections (Measles +++, pertussis),
✓ Congenital malformations (rare)

Not to be confused with TB cavitations