

The respiratory system

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Introduction

Lung diseases account for up to a third of deaths in most countries and a major proportion of visits to the doctor and time away from work or school. The symptoms of pulmonary disease may be trivial or extremely distressing; either may indicate serious and life-threatening disease. The functional capacity of the lungs is large compared with everyday needs and therefore diseases may be very advanced before a patient seeks medical advice. The lungs are well-hidden and protected in the thorax, and this can make assessment and diagnosis difficult at times. As with every aspect of diagnosis in medicine the key to success is a clear and carefully recorded history.

Symptoms of respiratory disease

The principal symptoms of lung disease are *cough*, *sputum production*, *breathlessness (dyspnoea)* and *chest pain*.

Cough

A cough may be dry or productive of sputum.

- How long has it been present? A cough lasting a few days following a cold has less significance than one lasting several weeks in a middle-aged smoker, which may be the first sign of a malignancy.
- Is the cough worse at any time of day or night? A dry cough at night may be an early symptom of asthma, as may cough which comes in spasms lasting several minutes.
- Is the cough aggravated by anything, such as dust, pollen or cold air? The increased reactivity of the airways seen in asthma, and in some normal people for several weeks after viral respiratory infections may present in this way. Severe coughing, whatever its cause, may be followed by vomiting. In children with whooping cough a spasm of coughing is followed by a characteristic forced inspiration through a narrowed glottis creating a 'whooping' noise which is a form of *stridor* (see below).

Sputum

- Is sputum produced? What does it look like? Children and some adults swallow sputum, but it is

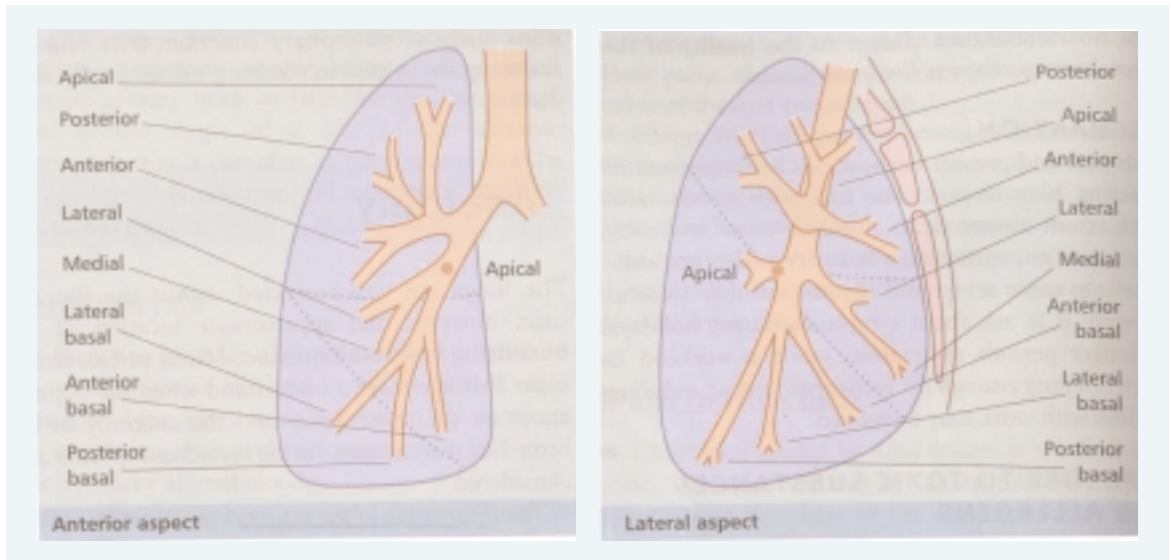


Fig. 7.1 The right lung (anterior and lateral aspects) showing the segmental bronchi. Dashed lines represent interlobar fissures.

General assessment

Even if an examination is specifically directed towards the respiratory system, it is incomplete if there is not also some general examination of the patient. Ideally, the patient should be comfortably resting on a bed, sitting at an angle of 45 degrees and supported by pillows.

The form, physique and general nourishment of the patient should be noted. The patient may be breathless even after the minimal exertion of

undressing and this is a valuable observation during the overall assessment. The nature of the voice (is it hoarse?) should be noted. The hands should be inspected for *clubbing* (see page 19), *pallor* or *cyanosis*. The lips and tongue should be inspected for central cyanosis (Fig. 7.4). A breathless patient may be using the accessory muscles of respiration (e.g. sternomastoid), which gives an indication of the severity of the breathlessness. Intercostal recession (a drawing-in of the intercostal spaces with inspiration) indicates severe airway obstruction and a very non-compliant lung.

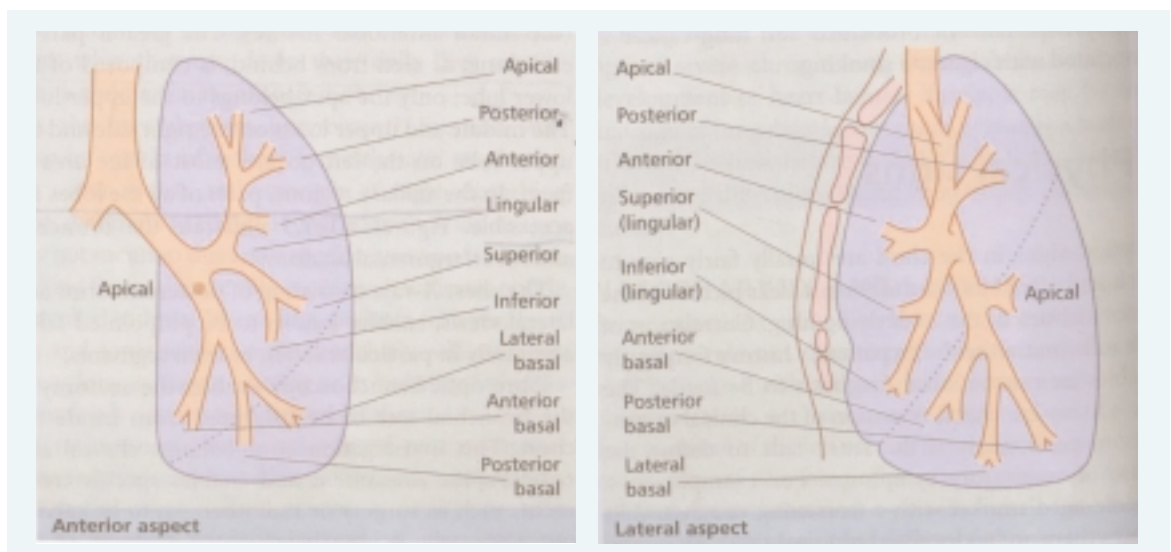


Fig. 7.2 The left lung (anterior and lateral aspects) showing the segmental bronchi. Dashed lines represent the interlobar fissures.

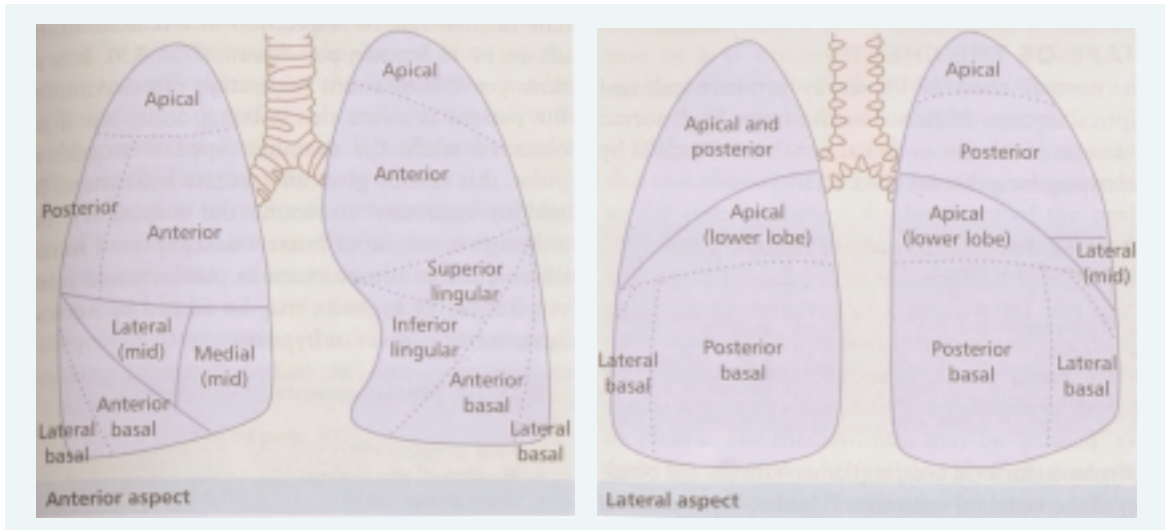


Fig. 7.3 The respiratory segments supplied by the segmental bronchi.

The *venous pulses* in the neck (see Chapter 8) should be inspected. A raised venous pressure is usually indicative of right heart failure but can be due to obstruction of the superior vena cava. In this case the patient often appears plethoric and has a swollen face. If the upper level of the venous pressure can be seen in the neck, venous pulsation is absent. This is usually due to malignancy in the upper mediastinum. If superior vena caval obstruction is present the patient must also be carefully examined for co-existent obstruction of the trachea and major bronchi. If the latter is present there may be an obvious stridor, and peak expiratory flow rate (see blow) will be reduced.

The *lymph nodes* in the supraclavicular fossae, cervical regions and axillary regions should be palpated. They are often enlarged secondary to the spread of malignant disease from the chest, and this finding will influence decisions regarding treatment. If malignancy is suspected within the chest, the abdomen must also be examined, paying particular attention to possible enlargement of the liver.

BOX 7.1 Points to note in a general assessment.

- Physique
- Voice
- Breathlessness
- Clubbing
- Cyanosis or pallor
- Intercostal recession
- Use of accessory respiratory muscles
- Venous pulses
- Lymph nodes

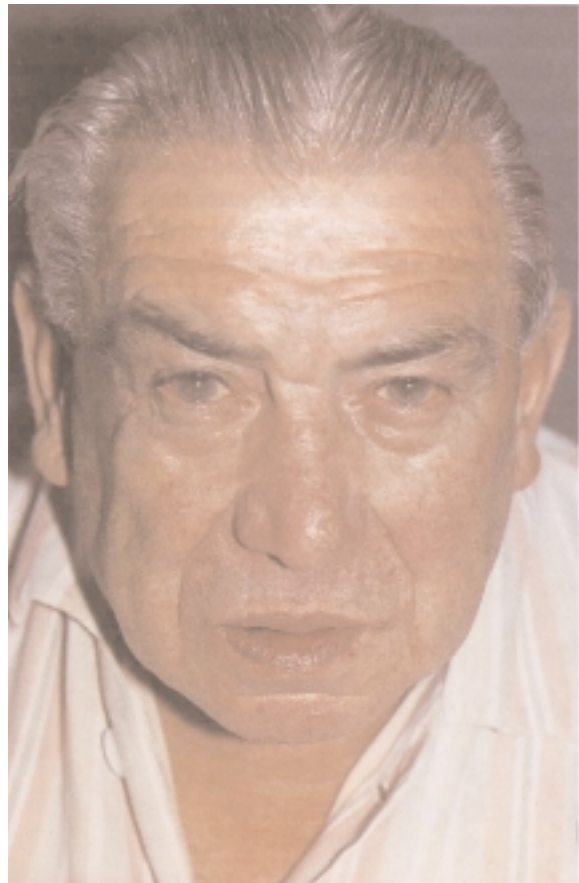


Fig. 7.4 Respiratory failure. The patient is breathless at rest and there is central cyanosis with blueness of the lips and face. The lips are pursed during expiration, a characteristic feature of chronic obstructive airways disease (COAD). This facial appearance is often accompanied by heart failure with peripheral oedema (cor pulmonale).