

Case 20 A fatal lung disease

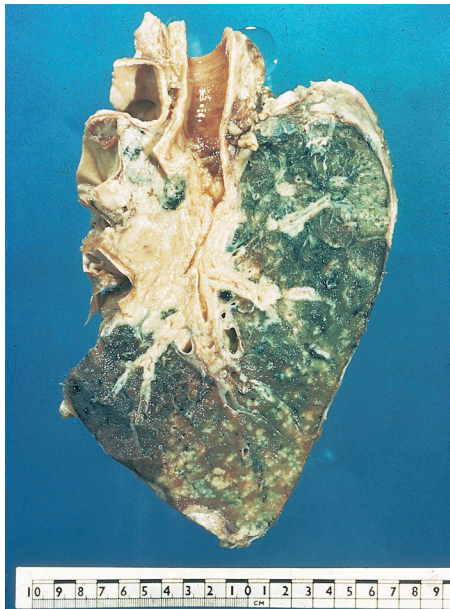


Figure 20.1

Figure 20.1 is the postmortem specimen of the lung of a man aged 68 years.

What is the obvious pathology?

An extensive carcinoma of the lung, which is invading the left main bronchus and with involvement of the hilar lymph nodes.

About how many deaths are attributed to this disease annually in the UK?

About 35000 deaths in 2011 – making it far and away the leading cause of deaths from malignant disease in the UK, accounting for over one-fifth of all cancer deaths. It is commoner in men than women, but this disparity is

lessening year by year. Survival is dismal, with 1- and 5-year survivals of 25% and 9%, respectively.

What are the known predisposing factors in this disease?

The main predisposing factor is cigarette smoking, although the condition occasionally occurs in lifetime non-smokers. Other factors include air pollution with diesel, petrol and other fumes. The incidence is higher in urban than in rural populations. Radioactive carcinogens in certain mines are also associated with lung carcinoma.

List the main histological types of this disease

- Twelve per cent are small cell (oat cell) carcinoma (Fig. 20.2a).
- Eighty-seven per cent are non-small cell lung cancer (NSCLC), divided into squamous cell (40%, Fig. 20.2b), adenocarcinoma (37%, Fig. 20.1c) and the remainder are undifferentiated large cell carcinoma (Fig. 20.2d).

List the pathways of spread of this tumour

There are four potential pathways of spread of a malignant tumour, and carcinoma of the lung may manifest all four of these in its advanced stage.

- **Local:** Invasion of the lung parenchyma, eventually reaching the pleural surface and chest wall; spread along the bronchus.
- **Lymphatic:** To the hilar, mediastinal and cervical lymph nodes.
- **Blood:** Especially to the liver, bone, brain and adrenals.
- **Transcoelomic:** Seeding over the pleura, with resulting pleural effusion.

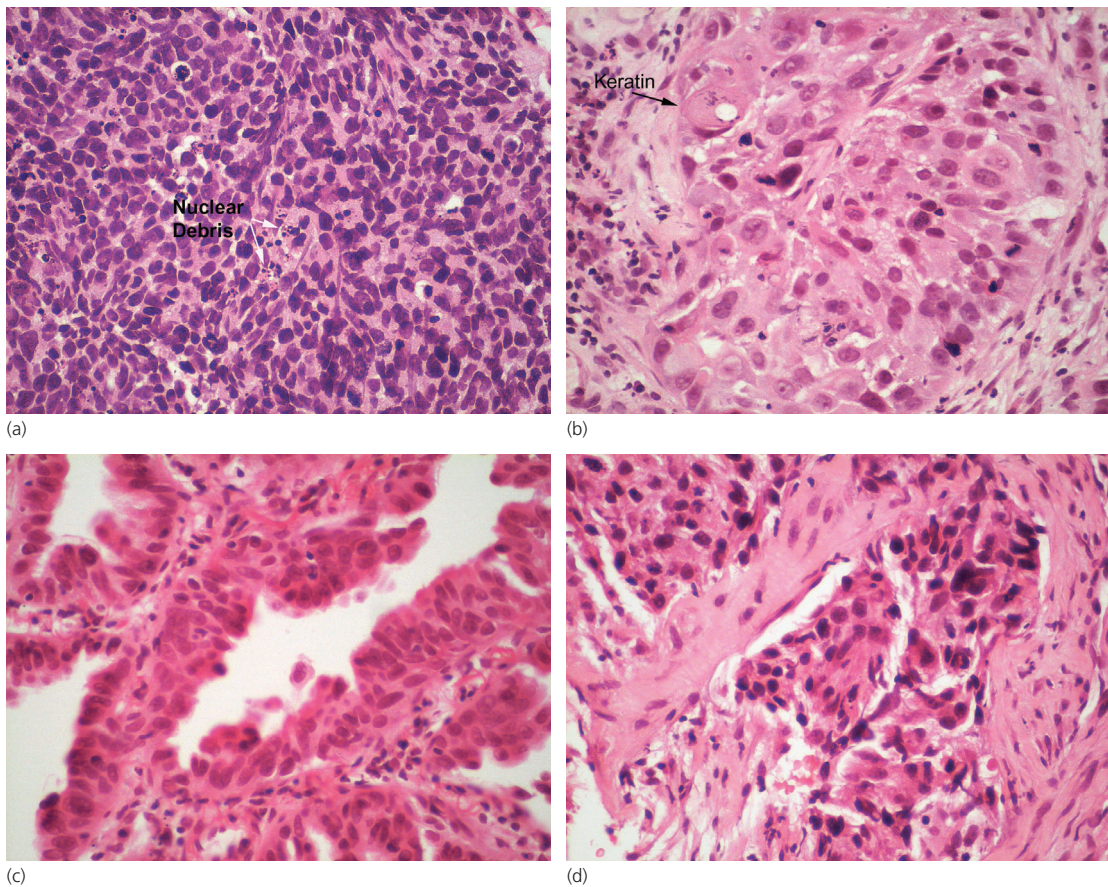


Figure 20.2 The different types of lung cancer. (a) Small cell carcinoma. There are numerous infiltrating small cells with prominent nuclei and little cytoplasm. The cells are fragile and prone to 'smear' artefact, and typical nuclear (karyorrhectic) debris. (b) Squamous cell carcinoma. Note the large eosinophilic cells and keratin in the tumour (arrowed). (c) Adenocarcinoma showing a typical glandular architecture with tall columnar cells. (d) Large cell carcinoma with large pleomorphic cells. (Magnification $\times 40$, haematoxylin and eosin stain.)