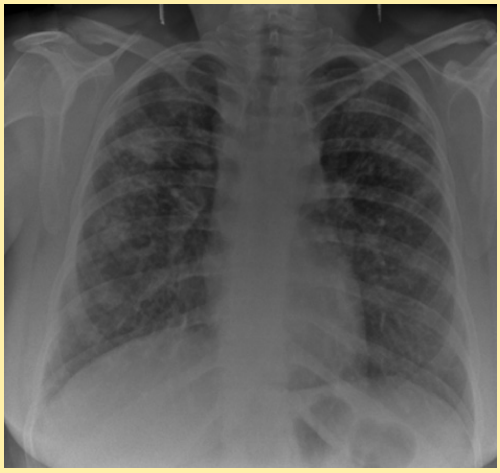
Radiology corner

Case 1

A 54-year-old female presents with dry cough and exertional breathlessness.

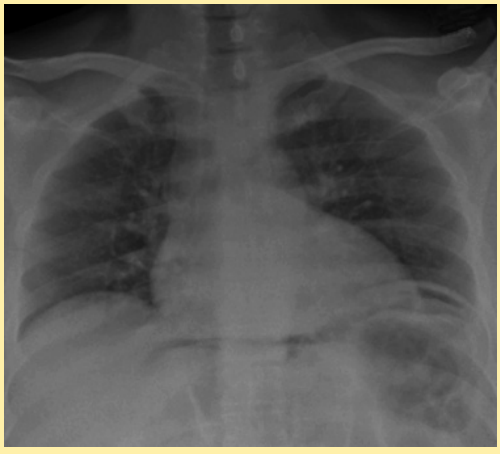
1. What is the most likely cause of these appearances (figure 1)?
   a) Bronchiectasis
   b) Sarcoidosis
   c) Pneumoconiosis
   d) Atypical infection
   e) Metastatic malignancy



Case 2

A 34-year-old alcoholic presents with chest pain.

1. What is the main abnormality (figure 2)?
   a) Pneumomediastinum
   b) Lobar collapse
   c) Bony abnormality
   d) Cardiomegaly
   e) Pneumoperitoneum



Answers

Case 1

1. b) Sarcoidosis. There are multiple nodular opacities noted throughout both lungs with larger conglomerate nodular opacities in the upper peri-hilar regions. This patient was previously diagnosed with sarcoidosis.

   Small, rounded or irregular opacities are the most common pulmonary pattern observed in patients with sarcoidosis. Irregular or reticulonodular opacities are more common than pure nodules and it is usually bilaterally symmetric most commonly more central, perihilar in the mid- and upper zones and generally spares the bases. Pneumoconiosis could have a similar appearance but this would be uncommon in a woman. Pulmonary metastases are usually more widespread and although they can occur anywhere, since they are generally blood-borne, are less likely to spare the bases.

Case 2

1. e) Pneumoperitoneum. There is evidence of pneumoperitoneum with free gas noted below the left hemidiaphragm extending medially to cross the midline.

   The differential for these appearances would include:

Perforated viscus	Gastric/duodenal ulcer Appendicitis Toxic megacolon Obstructed bowel
Iatrogenic	*e.g.* perforation post-ERCP or post-endoscopy
Post-surgical	Normal appearances post abdominal surgery or post laparoscopy

ERCP: endoscopic retrograde cholangiopancreatography

Case 3

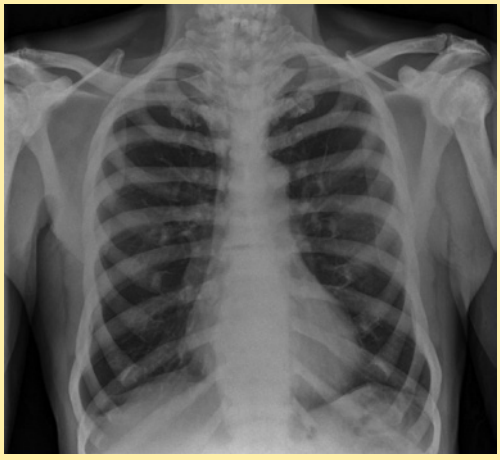
A 47-year-old female with a history of ischaemic heart disease presents with shortness of breath. Her previous chest radiograph was reported as being normal.

1. What is the main abnormality (figure 3)?
   a) Soft tissue mass and right pleural effusion
   b) Soft tissue mass and lobar collapse
   c) Pleural effusion and fluid in the right horizontal fissure
   d) Mastectomy, soft tissue mass and pleural effusion
   e) Mastectomy and pleural effusion

Case 4

A 51-year-old male presents with decreased appetite and fatigue.

1. What is the main abnormality (figure 4)?
   a) Cardiomegaly
   b) Soft tissue abnormality
   c) Mediastinal abnormality
   d) Bony abnormality
   e) Normal appearances



Answers

Case 3

1. c) Pleural effusion and fluid in the right horizontal fissure. There is a right-sided pleural effusion and in addition there is a rounded opacity within the right lower zone. This was due to encysted pleural fluid within the horizontal fissure and is sometimes termed a pseudotumour. This is due to a focal collection of fluid trapped in one of the fissures. These opacities are often oval or elongated along the direction of the fissure. Knowledge of the normal location of the fissures is helpful when considering the diagnosis and obtaining a lateral chest radiograph can be helpful in confirming the diagnosis. Other features of congestive cardiac failure, which is the most common underlying of a pleural effusion causing a pseudotumour, are often present.

   The investigation to perform next is a follow-up radiograph to ensure resolution following treatment with diuretics.

Case 4

1. d) Bony abnormality. The bones are diffusely sclerotic. This patient had chronic renal impairment and the findings are due to renal osteodystrophy.

   The most common cause of diffuse bony sclerosis is bony metastasis, particularly prostate cancer metastasis in a man and breast cancer metastasis in a woman. Less common causes to consider in the differential diagnosis include:

   - renal osteodystrophy
   - myelofibrosis
   - sickle cell disease
   - osteopetrosis
   - pyknodysostosis
   - fluorosis
   - mastocytosis