

## CLINICAL IMAGE

# Pneumoperitoneum after a bilateral pneumothorax

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A 52-year-old man presented to the general practitioner's office with a chief complaint of shortness of breath and bilateral chest pain. He was referred to the hospital by ambulance. During his transport to the emergency department he became unresponsive with deteriorating blood pressure and insufficient breathing. On arrival at the emergency department his physical examination showed an immeasurable oxygen saturation, very soft breath sounds bilaterally, blood pressure at 100/70 mmHg, and a Glasgow coma scale of six (E4M1V1). A chest X-ray was directly obtained due to suspicion of a pneumothorax. The chest X-ray showed a bilateral pneumothorax and pneumoperitoneum (*figure 1*). Needle thoracostomy was performed after which his work of breathing decreased. After tube thoracostomies were inserted his breathing pattern normalised and he became responsive.

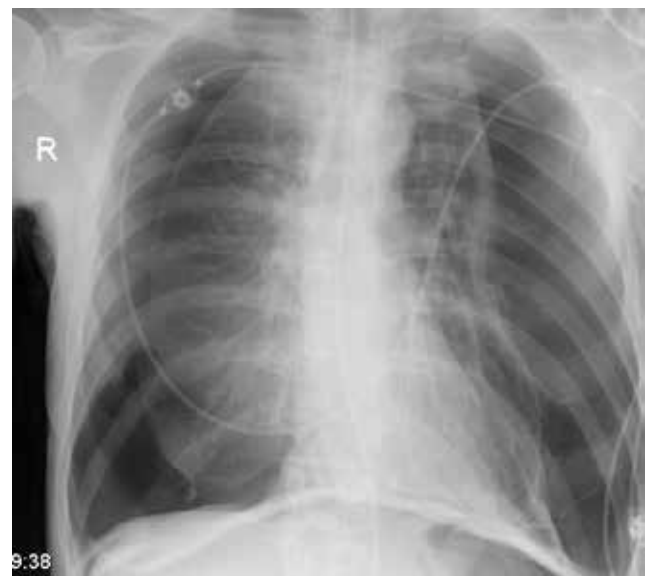
After regaining full consciousness, he explained that his shortness of breath began after lifting two heavy bags filled with newspapers. His medical history consisted of invasive stomach carcinoma with growth towards the oesophagus for which he underwent a oesophagectomy several years ago without any sequelae. He also had a history of smoking.

A CT scan of chest and abdomen was performed because of the pneumoperitoneum with a high suspicion of gastrointestinal perforation (*figure 2*). The CT scan showed partial re-expansion of both lungs but no signs of abdominal perforation. Instead of laparoscopic exploration we chose conservative management by admitting the patient to the medium care unit for further treatment. The next day he was discharged to the pulmonary ward.

Several days later the patient was admitted at the ICU because of an increasing oxygen demand and elevated infection parameters.

A CT scan of his chest revealed a persistent pneumothorax with signs of bilateral pleural empyema. The abdominal air disappeared without abdominal surgery. The patient underwent a pleurodesis and bullae removal of the right apex by video-assisted thoracoscopic surgery. Afterwards he made an uneventful recovery and could be discharged from the ICU.

In conclusion: After the increase in thoracic pressure by lifting heavy bags, air was released from the lungs by a spontaneous rupture of a bullae causing a bilateral pneumothorax. The increased intra-thoracic pressure caused air to pass through the



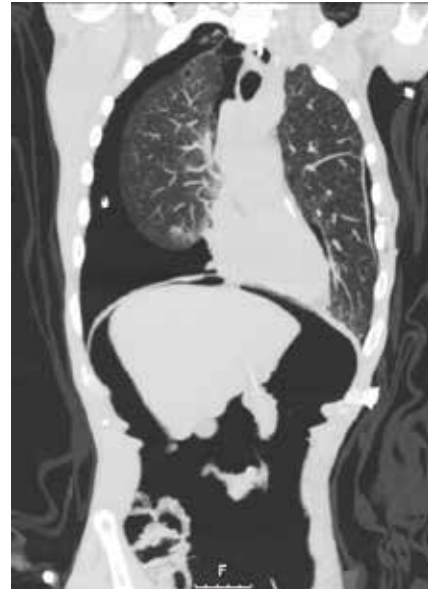
**Figure 1.** Postero-anterior X-ray of the chest shows near-complete bilateral pneumothorax and free air below the diaphragm.

oesophageal hiatus created at the time of the oesophagectomy. By following the path of least resistance the air accumulated through the hiatus in the abdominal cavity.

Our case history shows that understanding anatomical changes after surgery can give a clue to the diagnosis and in this case justify conservative management of a pneumoperitoneum.

**Disclosures**

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**Figure 2.** (Coronal section). Pneumoperitoneum and pneumothorax.

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