

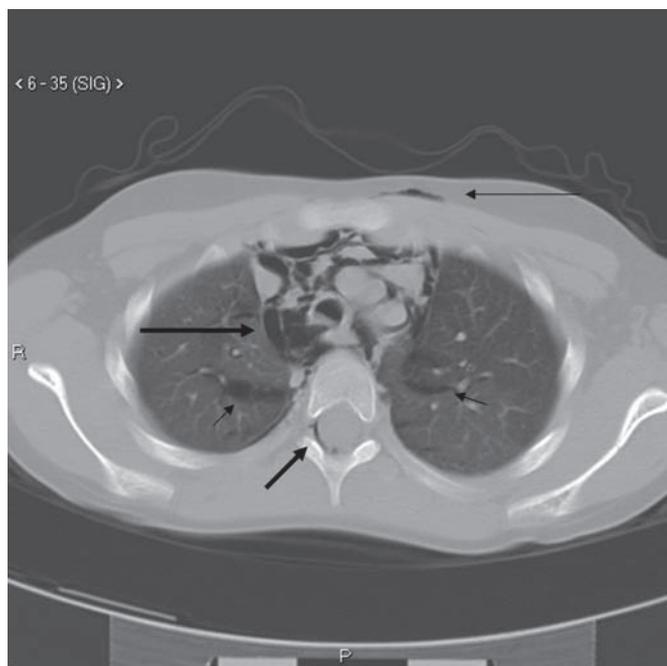
## Images in paediatrics

### Where has the air gone?

Pneumorrhachis (air within the spinal canal) is rare and usually associated with other air leaks. Diagnosis is usually by high resolution CT scan.

A 9-year-old boy had a 10-day history of persistent cough despite treatment with inhaled bronchodilators, systemic steroids and antibiotics before coming to hospital. Physical examination demonstrated good general condition, cervical subcutaneous emphysema and reduced breath sounds with widespread crackles and wheeze. Chest x-ray demonstrated pneumomediastinum and overinflation of the left upper lung field. CT showed pneumopericardium, pneumothorax and pneumorrhachis (figure 1). The patient recovered uneventfully and no underlying cause was found.

Pneumorrhachis is rare, particularly in children: it can be classified into internal, intradural (intraspinal air within the subdural or subarachnoid space) and external, extradural (intraspinal, epidural air).<sup>1 2</sup>



**Figure 1** Axial CT image of lung apices showing free air in the right and posterior aspects of the thoracic spinal canal (short broad arrow), massive pneumomediastinum (long broad arrow), interstitial emphysema in the pulmonary apices (short slim arrows), and subcutaneous emphysema between anterior thoracic subcutaneous fat and right pectoralis major muscle (long slim arrow).

It is usually asymptomatic and can be due to trauma, extension of pneumothorax or pneumomediastinum, iatrogenic causes (lumbar puncture or epidural anaesthesia) and malignancy and its treatment.<sup>3–5</sup> Subarachnoid pneumorrhachis can occur after trauma or extensive surgical exposure of the spinal nerve roots; it is often associated with a fatal outcome.<sup>3</sup>

In summary, we report the case of a child who developed pneumorrhachis after coughing, presumably secondary to a community acquired viral infection. Imaging showed epidural pneumorrhachis with air throughout the spinal canal.

#### LEARNING POINTS

- ▶ Pneumorrhachis is rare, especially in children.
- ▶ It is usually an asymptomatic epiphenomenon but can also cause neurological symptoms.
- ▶ It is seen in association with other manifestations of air leak.
- ▶ The intra-spinal air usually reabsorbs spontaneously

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