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Traumatic epidural pneumorrhachis

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DESCRIPTION

A 57-year-old man was admitted to the emergency department with blunt thoracic and abdominal trauma after being hit by a tree.

CT of the thorax and abdomen was performed.

Abdominal CT showed a large retroperitoneal haematoma secondary to an injury of celiac trunk; thoracic CT showed a right haemo-pneumothorax, a pneumomediastinum, a large basal lung contusion, a small dorsal right subcutaneous emphysema, the fractures of third, fourth and fifth right ribs (figure 1) and some small air bubbles in the

spinal canal between the second and the fifth thoracic vertebra (figure 2).

Pneumorrhachis (air within the spinal canal) is an extremely rare manifestation of severe trauma.

Air within the spinal canal may occur in the epidural or subarachnoid space.¹⁻⁴

The latter is frequently associated with more serious injuries like skull fractures and thoracic spine fractures and is almost always associated with pneumocephalus. In skull fractures subarachnoid pneumorrhachis is the consequence of pneumocephalus, while in spine fractures

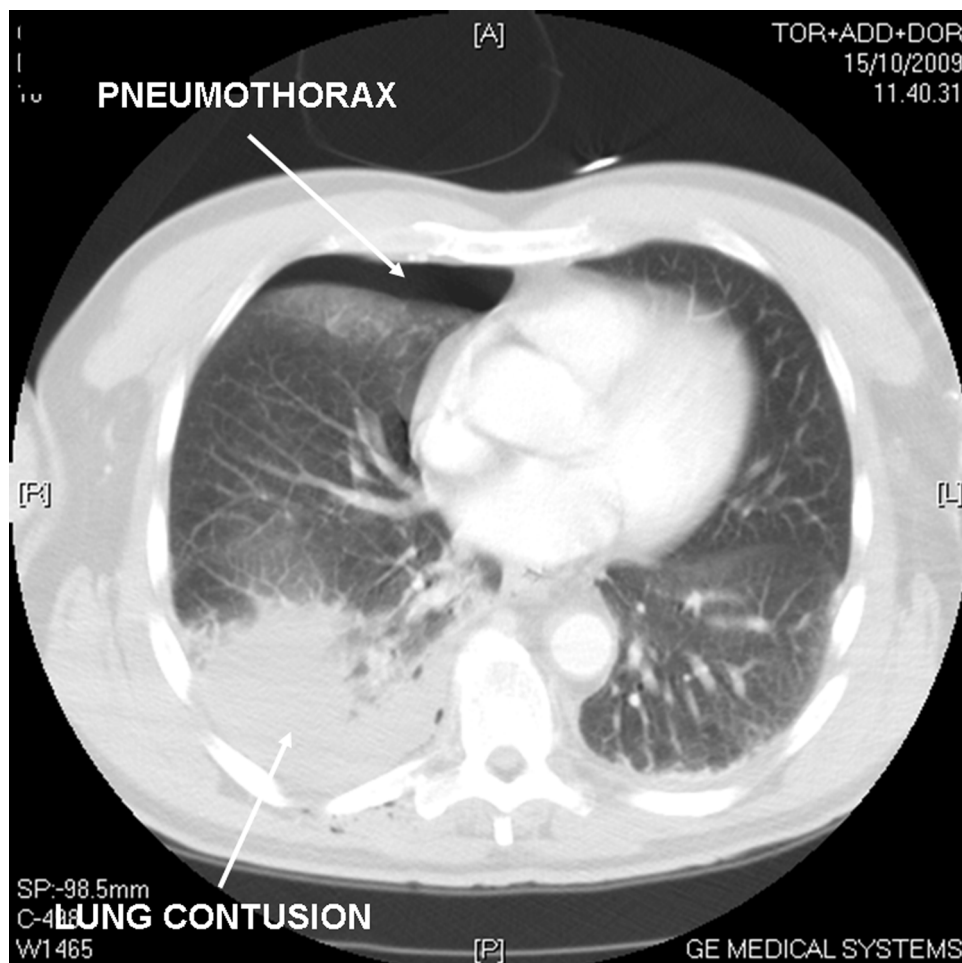


Figure 1 CT scan of the thorax showing right pneumothorax and lung contusion.

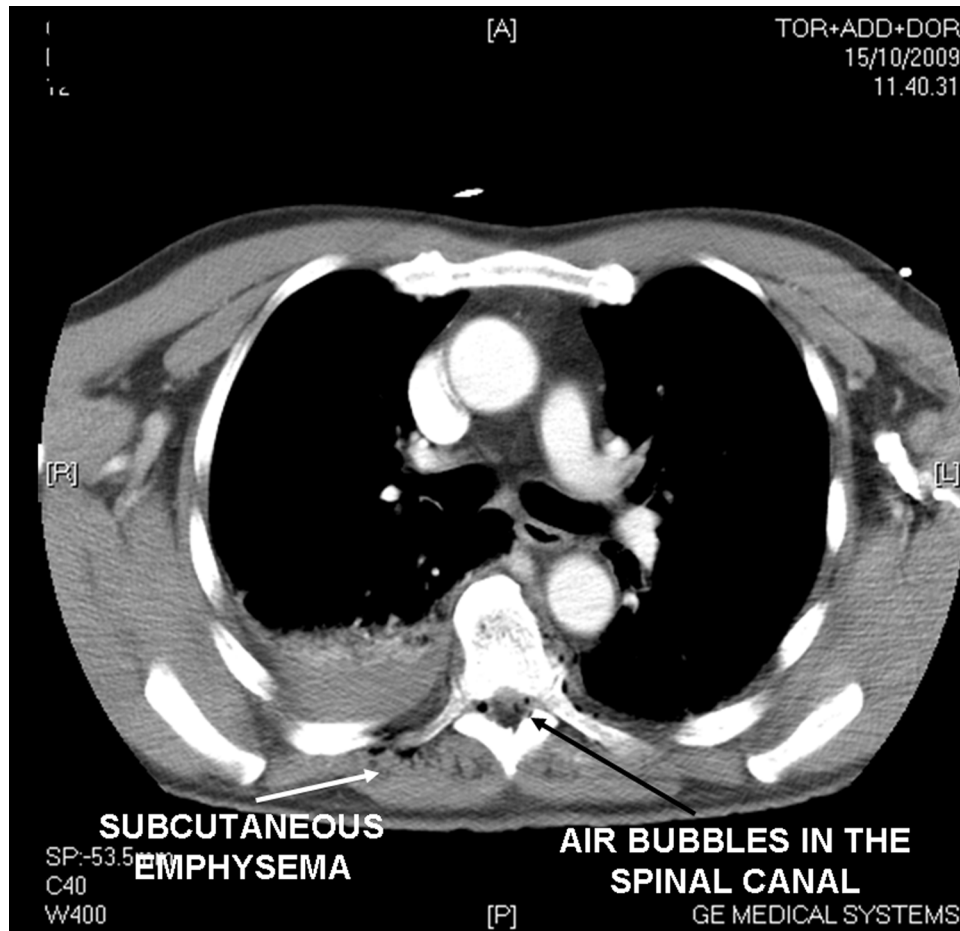


Figure 2 CT scan of the thorax showing dorsal right subcutaneous emphysema and small air bubbles in the spinal canal.

pneumocephalus is caused by air that migrates to the brain from subarachnoid space.

Epidural pneumorrhachis is less frequent and is often associated with traumatic pneumothorax or traumatic pneumomediastinum. The mechanism through which pneumorrhachis occurs is when air present in the posterior mediastinum dissects along fascial planes from the posterior mediastinum, through the neural foramina, into the epidural space behind the driving pressure of a pneumothorax or pneumomediastinum.^{2 4}

Pneumorrhachis has been described also in non-traumatic events like violent coughing, physical exertion, prolonged and forceful emesis, inhalational drug abuse ('ecstasy' and marijuana) and surgical manipulations as well as spontaneously.²

Even though traumatic pneumorrhachis is asymptomatic and no treatment is necessary because the driving force

of a pneumothorax or pneumomediastinum can push only small volumes of air into the epidural space, its presence indicates a severe trauma that requires careful monitoring of the patient.

Competing interests None.

Patient consent Obtained.

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