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Untreated vertebral osteomyelitis extending to the mediastinum and lungs

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DESCRIPTION

A 70-year-old man with untreated diabetes mellitus was admitted to our hospital presenting with fever and malaise. He had slipped and fallen on the street a month before.

A CT scan revealed a mediastinal abscess, right pneumothorax, and T2/3 spine destruction (figures 1–3.). MRI showed vertebral osteomyelitis, an epidural abscess, and an adjacent mediastinal abscess (figures 4–6). Blood culture was positive for *Streptococcus intermedius*. Vegetation was not detected by transthoracic echocardiography and repeated blood culture was negative after antimicrobial therapy. Endoscopy revealed that the oesophagus and trachea were intact.

The patient was transferred to our hospital 5 days later, where mediastinal abscess drainage and partial lung resection of the bilateral upper lobes were performed. Posterior spine fixation was performed 5 days after the first operation. Epidural abscess drainage was not performed, because we feared it

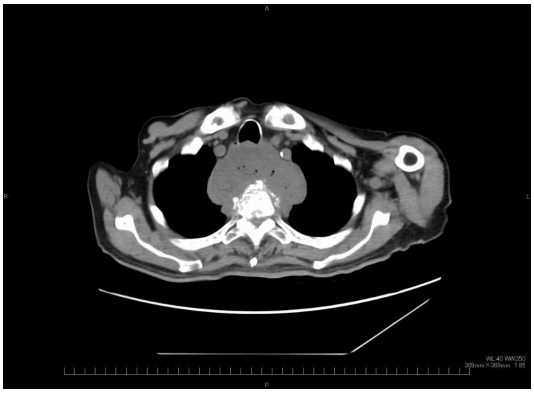

Figure 1 CT on admission.

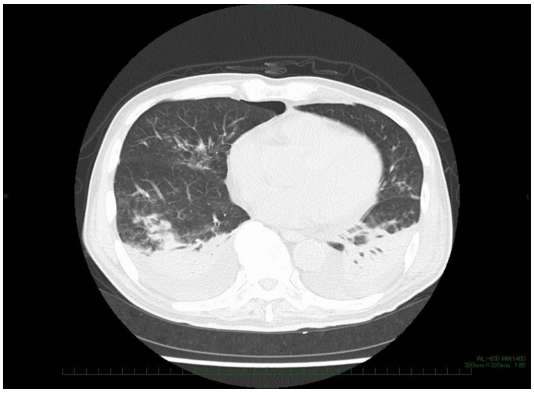

Figure 2 CT on admission suggesting right pneumothorax.

Figure 3 CT on admission showing T2/3 spine destruction.

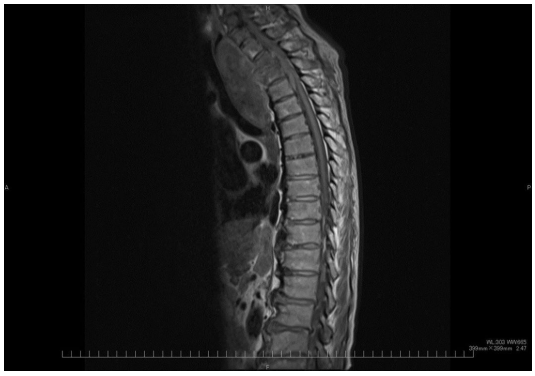

Figure 4 MRI on admission showing T1W1.

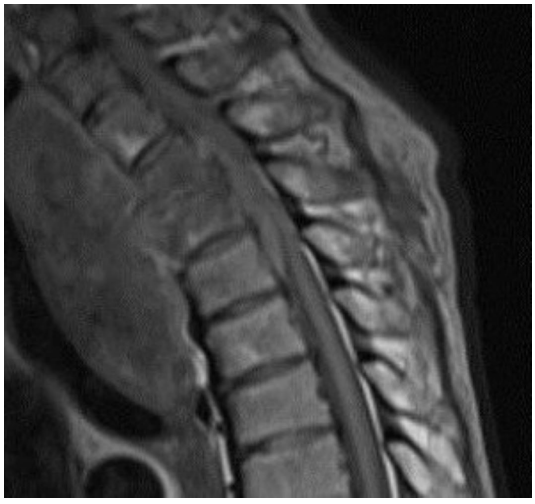

Figure 5 MRI on admission suggesting epidural abscess.

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Figure 6 MRI on admission showing short T1 inversion recovery.

might exacerbate spinal instability. After a course of antibiotic therapy, he was transferred to another hospital for rehabilitation.

The aetiology of infection was not clear, but the preceding trauma was thought to be strongly associated. Osteomyelitis is known to follow a contiguous spread if untreated. Anterior contiguous spread can lead to retropharyngeal, mediastinal, retroperitoneal or psoas abscesses. In this case, it extended to the mediastinum and lung, causing abscesses and pneumothorax.

Epidural space is anatomically close to the pleural space. About one-third of cases of epidural abscesses arise through contiguous spread from adjacent spaces, including pleural spaces.[1] Notably, a case report described an epidural empyema extending from a pleural empyema.[2] This case also highlights the anatomical relationship between the epidural and pleural spaces.

Learning points

- Osteomyelitis should be treated early, as it can extend to adjacent tissues or organs.
- Tumours in the posterior mediastinum may be caused by vertebral osteomyelitis.
- Infection can spread between the spinal column, epidural space and pleural space.

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