

Bronchoepidural Fistula in a Man with Actinomycosis Complicated Non-small Cell Lung Cancer

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A 63-year-old man was diagnosed with stage IV squamous cell lung carcinoma after presentation with mid-thoracic back pain. Staging computed tomography (CT) chest, abdomen, and pelvis confirmed a cavitating right lower lobe lesion, T3 vertebra, and bilateral adrenal metastatic disease (Figure 1A). An endobronchial ultrasound biopsy of his subcarinal lymph node confirmed the diagnosis of poorly differentiated squamous cell carcinoma. He received a dose of 30 Gy in 10 fractions of radiotherapy to his right lower lobe primary lesion including T1-8 vertebral, which was boosted by a further 6 Gy in two fractions. He was commenced on gemcitabine and carboplatin 1 month later. The restaging CT after his first cycle of chemotherapy showed progressive disease involving his hilar and mediastinal lymphadenopathy and bilateral adrenal and skeletal metastases, but the cavitating right lower lobe lesion remained

unchanged. A second cycle of chemotherapy was precluded due to prolonged pancytopenia lasting 25 days, and therefore he was commenced on erlotinib. He presented to the Emergency Department within 1 week of commencement with breathlessness, high-grade fevers (38.6°C), and worsening mid-thoracic back pain.

A thoracic CT demonstrated progressive cavitation of the primary lung lesion, with interval development of a transpleuroparenchymal fistulous communication from the right main bronchus to the T6 and T7 vertebral bodies, adjacent intervertebral discs, and the anterior epidural space (Figure 1B). The distant metastatic diseases remained unchanged. Blood cultures were positive for *Eikenella corrodens* and *Actinomyces odontolyticus*. Due to poor performance status and prognosis, surgery was considered inappropriate. He was commenced on intravenous ticarcillin/tazobactam; however, his condition deteriorated and died 3 weeks later.

The bronchoepidural fistula was thought to be secondary to infection on the basis of positive blood culture and the interval development of a fistula without evidence of disease progression at other sites. *A. odontolyticus* infection is unusual in immunocompetent hosts but may occur in association with prolonged pancytopenia.

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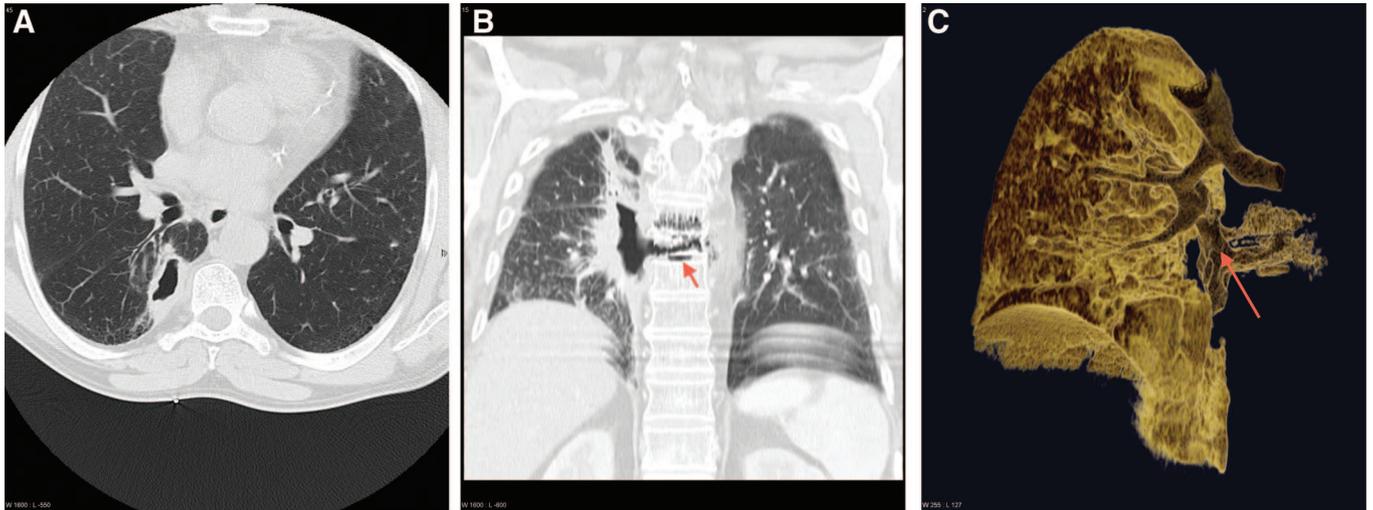


FIGURE 1. Thoracic computed tomography (CT) at initial diagnosis. *A*, Axial image, lung windows. A cavitating lesion abuts the pleura in the apical segment of the right lower lobe consistent with primary squamous cell lung carcinoma. Thoracic CT at representation. *B*, Coronal image, lung windows. Further cavitation with fistulous communication with the T6 and T7 vertebra and adjacent intervertebral disc spaces (red arrow). *C*, 3D reconstruction. A gas-filled tract (red arrow) extends from the right main bronchus via the cavity into the thoracic vertebral bodies and disc spaces.