Life-Threatening Bronchomediastinal Fistula Complicating a First Cycle of Chemotherapy in a Stage IV NSCLC Case

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A 60-year-old man affected by a IV stage non–small-cell lung cancer presented at the Emergency Department because of a rapid onset of dyspnea, persistent productive cough, and systemic artery hypotension (arterial pressure of 100/50 mm Hg).

Patient had a recent diagnosis of squamous carcinoma in the right lower lobe of the lung associated to multiple, bilateral pulmonary non calcified secondary lesions, measuring 5 to 8 mm. Multiple adenopathies were also present in the mediastinum (particularly in 2, 3, 4R and 4L, 7, 8, 10R, 11R, and 12R levels). Moreover, metastatic lesions were present in the paravertebral muscles and spleen.

At the admission, a diffuse bone metastatic involvement was observed, characterized by multiple osteolytic lesions. Moreover, contrast-enhanced computed tomography (CT) scan confirmed a right giugular vein and right brachiocefalic vein thrombosis already under treatment with eparin.

Patient underwent a first-line chemotherapy with carboplatinum combined with gemcitabine and zoledronic acid. After the first course of chemotherapy, he had to suspend the administration because of a severe mucositis requiring hospitalization for supportive care. Two weeks later, he was admitted to the Emergency Department.

Clinical examination showed a saturation 81%, pH 7.43, $Paco_2$ 44, and Pao_2 41.4. CT angiography excluded signs of acute pulmonary embolism. A 2 cm pathological bronchomediastinal fistula was observed between subcarinal adenopathy and origin of mainstein right bronchus (Fig. 1) confirmed by volume rendering reconstructions (Fig. 2).

Distally to the fistulous tract, bronchial lumen of right lower lobe was completely filled by mucoid impaction, and a fluid collection consistent with posterior mediastinitis measuring about 3 cm was also detected.

Lung window visualization showed wide bilateral consolidations, with bronchogram sign in right hemithorax and left lower lobe, consistent with pneumonitis, likely due to aspiration of necrotic debris (Fig. 3). Target lesions showed a partial response to chemotherapy with a mild (about 25%) dimensional reduction of all mediastinal adenopathies.

Patient underwent bronchoscopy that confirmed a fistula on the mediastinal side of the main right bronchus (Fig. 4), from which abundant puruloid secretions and lymphatic tissue were aspirated.

Unfortunately, conditions of the patients did not allow any palliative treatment such as placement of stent or drainage of mediastinitis. Patient rapidly worsened and died in 2 days. In advanced lung cancer, tracheoesophageal fistula has been described as rare complication of antiangiogenic drugs such as bevacizumab and concurrent mediastinal radiation.[1–3]

Fistula had also been reported as a complication of chemotherapy in patients with lymphoma.[4-6] It has not been reported as a complication after treatment of bronchogenic carcinoma treated with chemotherapy and gemcitabine.

Probably, bronchomediastinal fistula in the case hereby reported might be due to drug induced necrosis in large metastatic adenopathies already presenting as colliquation at baseline CT scan.

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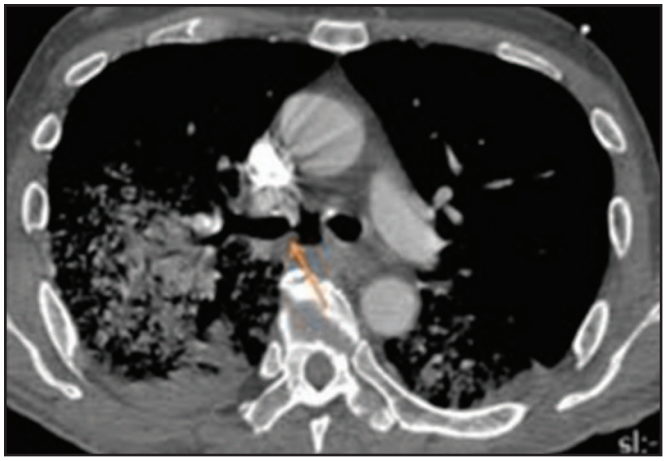

FIGURE 1. Axial computed tomography scan: mediastinal window visualization shows a fistulous tract of the right main bronchus (arrow). Partially visualized bilateral consolidations, mainly in the right hemithorax.

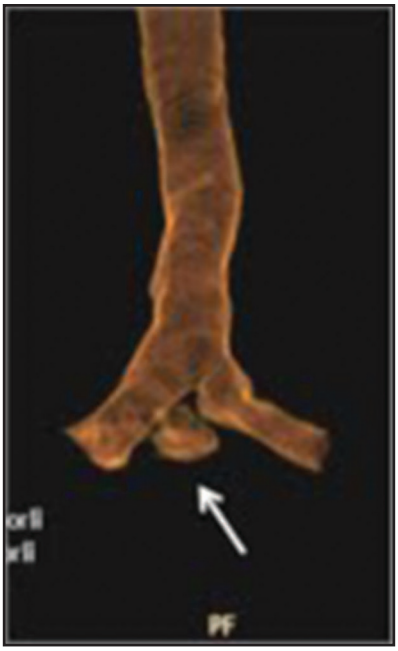

FIGURE 2. Volume rendering reconstruction shows the fistula on the lower side of the right bronchus.

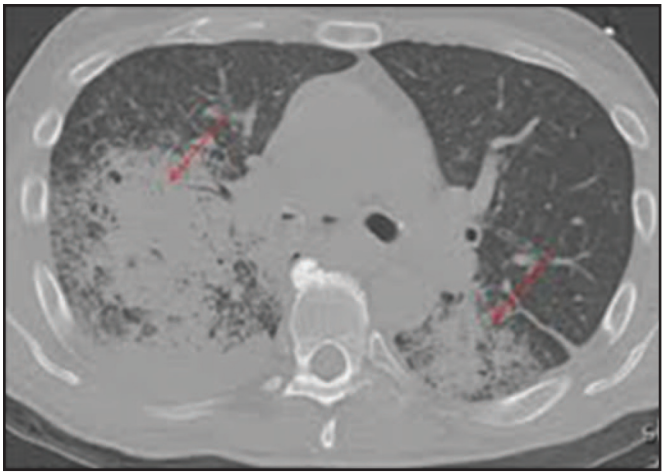

FIGURE 3. Axial computed tomography image with lung window shows wide bilateral parenchymal consolidations, involving mainly lower lobes.

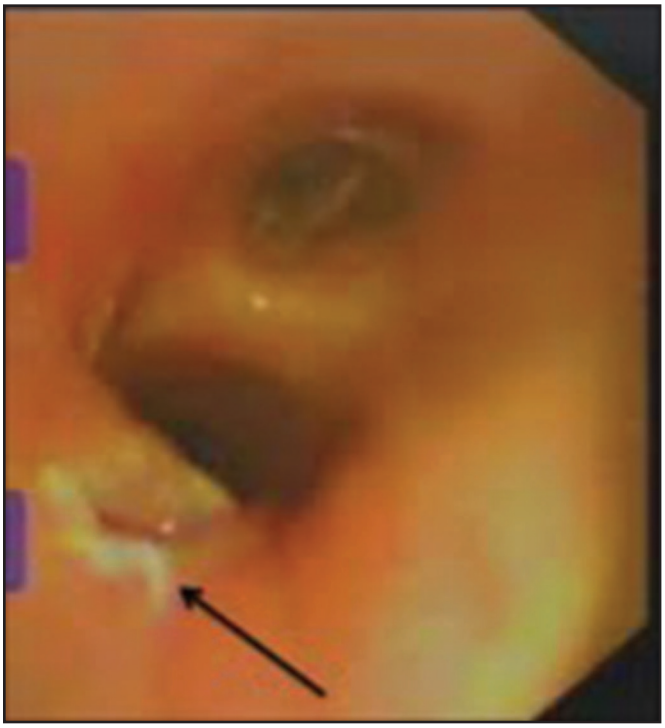

FIGURE 4. Picture of endoscopic procedure confirms the fistula on the right brochus.