Bronchoscopic intervention for a patient with bronchial mucoepidermoid carcinoma

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To the Editor: A 69-year-old woman presented with symptoms of chest tightness and cough for 2 years, which were aggravated during strenuous activities. She was hospitalized on June 3, 2019. In the past 2 years, she did not undergo any screening tests and was repeatedly misdiagnosed with asthma or pneumonia. She was treated with albuterol and various antibiotics without significant clinical improvement.

After hospitalization, the serum tumor markers were all negative and the chest computed tomography (CT) scan showed airway obstruction [Figure 1A]. A neoplasm was visible in the upper part of the trachea by bronchoscopy on June 5, 2019, which had a wide base and was approximately 4 cm in length, thus obstructing approximately 90% of the airway. A high-frequency electric knife and laser resection were used to remove the neoplasm [Figure 1B]. The tracheal cavity was significantly enlarged and the lens body was able to pass easily [Figure 1C]. A tissue biopsy revealed a salivary gland-type tumor that was consistent with a mucoepidermoid carcinoma [Figure 1D]. Immunohistochemical staining was positive for cytokeratin (CK) 5/6, CK7, CK8/18, Ki67, P40, P63, carcinoembryonic antigen (CEA), CK19, and sex-determining region Y (SRY)-related high mobility group-box 10 protein (SOX-10).

One week later, bronchoscopy showed necrosis in the middle of the trachea; the trachea was otherwise smooth. Repeated freezing and thawing were performed at the base with argon knife burning to reduce local recurrence. The symptoms of chest tightness and cough were improved, and the patient had no obvious discomfort and was discharged. No recurrence was detected at the 3-month follow-up.

Bronchial mucoepidermoid carcinoma (BMEC) is derived from the ductal epithelium of the tracheal or bronchial submucosal glands and is a type of salivary gland-type tumor composed of mucous, intermediate, and epidermoid cells. The specific pathogenesis of BMEC is not clear. Some studies have reported that the molecular pathogenesis of BMEC is related to a chromosome t (11; 19), (q21; P13) translocation. This translocation leads to an abnormal fusion gene, *CRTC1/3-MAML2*, which is the key to the pathogenesis of BMEC.[1] BMEC is a rare airway tumor that was first reported in 1952[2] and accounts for only 0.1% to 0.2% of primary lung malignancies. The incidence of BMEC is low in adults, with an average age of 40 years. Clinical manifestations, such as cough, chest tightness, and fever, are not specific and easily misdiagnosed as bronchitis, asthma, or bronchial tuberculosis. Currently, surgery is the preferred treatment, but the tumor mostly occurs in the main airway, thus the traditional surgical approach causes significant trauma and impairs lung function. BMEC is not sensitive to radiotherapy and chemotherapy. The tumor has been removed by means of bronchoscopic intervention therapies, such as high-frequency electric knife, argon plasma coagulation, cryotherapy, and laser, to avoid a thoracotomy, reduce trauma, preserve lung tissue, and improve lung function with a low incidence of adverse reactions.[3] The advantages of bronchoscopic intervention, including less trauma, a minimal effect on lung function, and repeatability, are unmatched by traditional surgery. Bronchoscopic intervention for BMEC in adults is rarely used and there are no studies on survival following this treatment. Clinicians need to further explore bronchoscopic intervention for BMEC, strengthen the cooperation of multiple centers and disciplines, and accumulate experience.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for images and other clinical information to be reported in the Journal. The patient understand that her name and initials will not be published and every effort will

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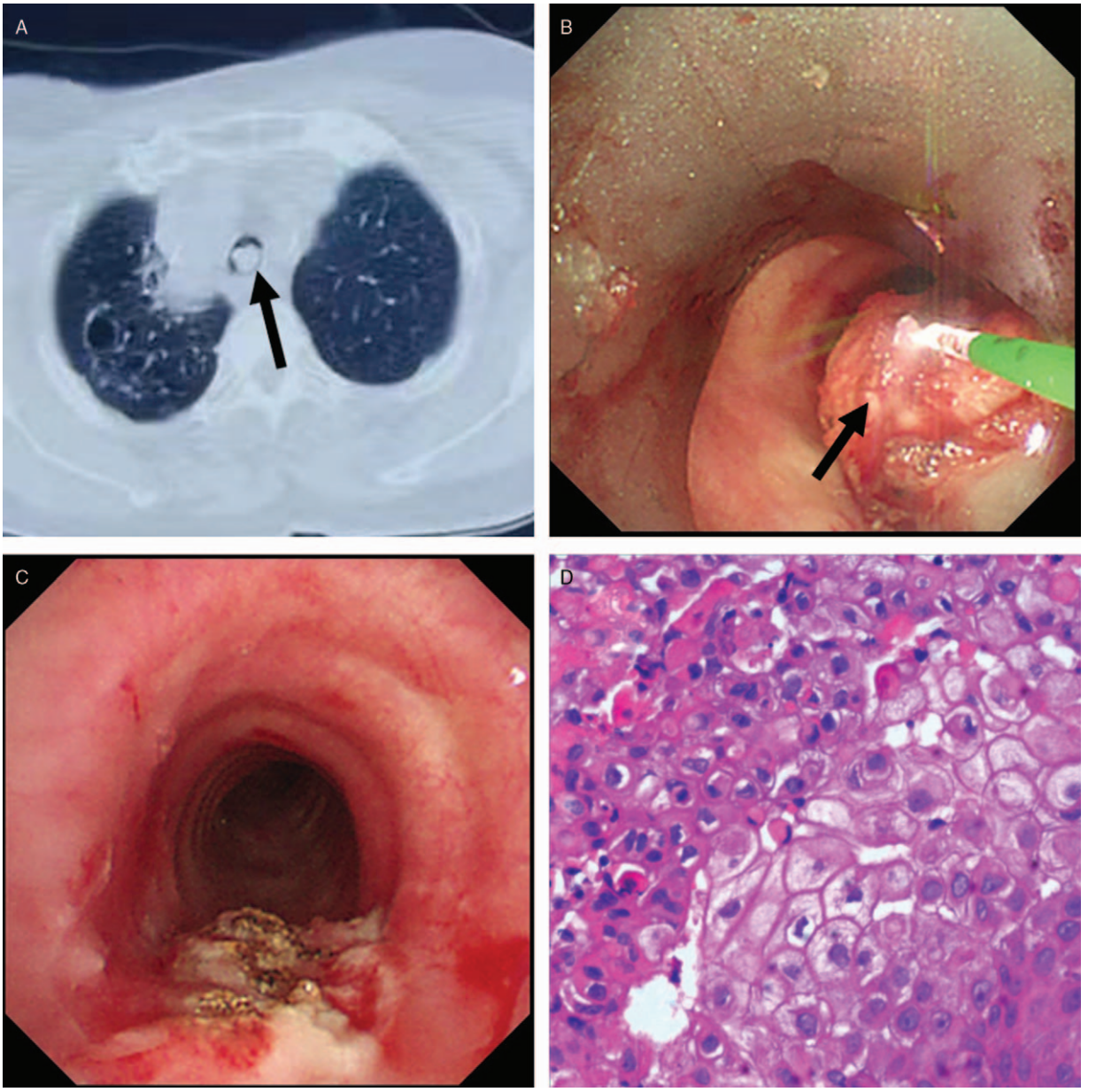

Figure 1: Chest computed tomography (CT), bronchoscopy, and histopathological images of the patient with bronchial mucoepidermoid carcinoma. (A) The chest CT scan showed an airway tumor (arrow). (B) Laser ablation of the tumor (arrow). (C) Re-examination by bronchoscopy after 1 week. (D) Tissue biopsy revealed a mucoepidermoid carcinoma (hematoxylin-eosin staining, original magnification ×400).

be made to conceal her identity, but anonymity cannot be guaranteed.

Conflicts of interest

None.

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