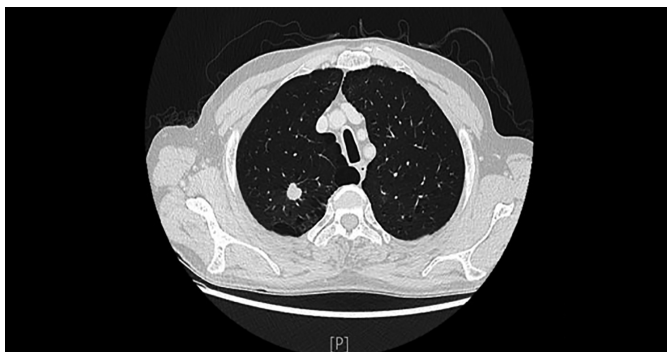


# Solitary Tracheobronchopathia Osteochondroplastica with Lung Adenocarcinoma

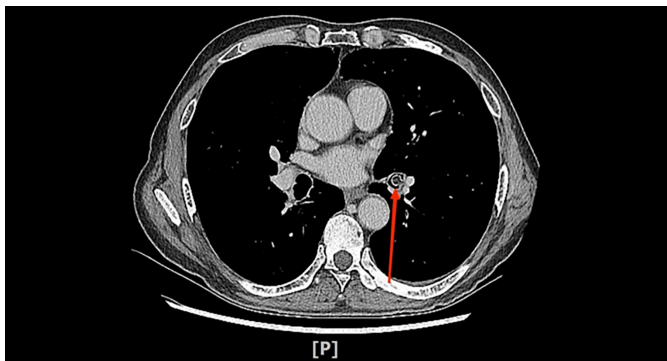
Sir,

Tracheobronchopathia osteochondroplastica (TO) is a benign disease with nodular hyperplasia of bone or cartilage tissue beneath the mucosa of the trachea and bronchi that protrude into the lumen.<sup>1</sup> Most of cases of TO reported in the literature involve multiple lesions, whereas solitary lesions are particularly rare.<sup>2</sup>

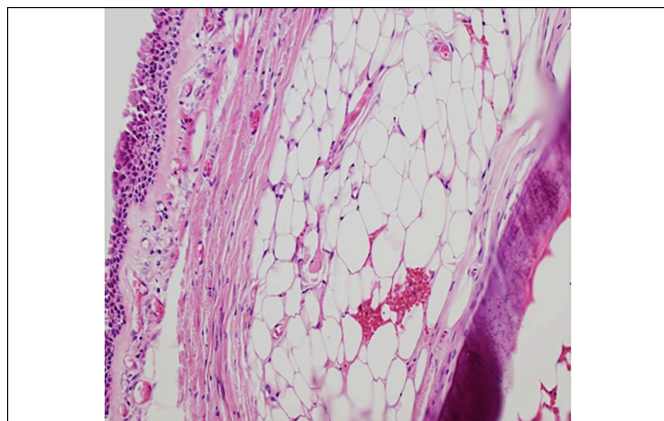
A 60-year male with a history of chronic obstructive pulmonary disease (COPD) complained of cough and dyspnoea for two weeks. He was subsequently admitted to the hospital on December 20, 2023. The arterial blood gas analysis showed PaO<sub>2</sub> of 60 mmHg and PaCO<sub>2</sub> of 52 mmHg. The contrast-enhanced CT scan of the chest showed a solid nodule measuring 13 mm in diameter, with obvious enhancement and surrounded by short spicules, located in the upper lobe of the right lung (Figure 1). In addition, in the left lower lobe bronchus, another calcific nodule measuring 8 mm in diameter protruded into the lumen, and its roots were connected to the airway cartilage ring (Figure 2).



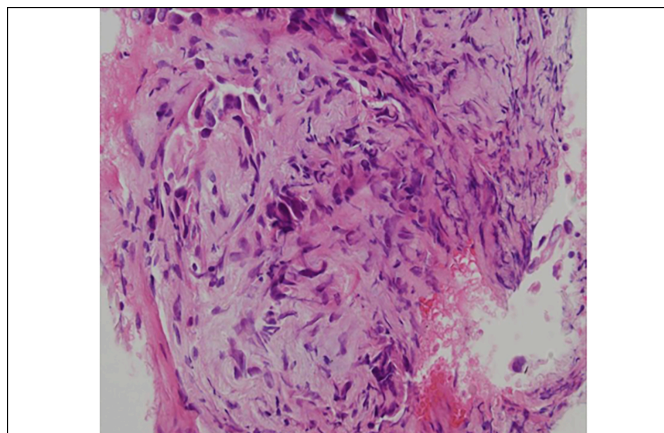
**Figure 1:** Chest CT scan shows a solid nodule measuring 13 mm in diameter, with obvious enhancement and surrounded by short spicules, located in the upper lobe of the right lung.



**Figure 2:** Chest CT scan shows another calcific nodule measuring 8 mm in diameter, protruding into the tracheal lumen in the left lower lobe bronchus, with its roots connected to the airway cartilage ring.



**Figure 3:** The histopathological examination showed tracheobronchopathia osteochondroplastica in the nodule of the left lower lobe.



**Figure 4:** The histopathological examination showed adenocarcinoma in the nodule of the right upper lobe.

Bronchoscopy revealed that the orifice of the basal segment of the left lung was obstructed by a neoplasm, with root connected to the airway cartilage ring. The tumour was resected using an electrocautery loop. Subsequently, electromagnetic navigation combined with endobronchial ultrasound-guided sheath was performed for a biopsy of the lesion in the apical segment of the right upper lobe. The histopathological examination report showed TO in the nodule of the left lower lobe (Figure 3) and adenocarcinoma in the nodule of the right upper lobe (Figure 4). A diagnosis of TO existing with lung adenocarcinoma was confirmed. After the resection of the single TO lesion in the left lower lung lobe, the patient's exercise tolerance significantly increased. Moreover, the arterial blood gas analysis showed chronic Type II respiratory failure improved with PaO<sub>2</sub> of 70 mmHg and PaCO<sub>2</sub> of 43 mmHg. After a comprehensive evaluation by thoracic surgeons, thoracoscopic resection of the right upper lobe of the lung was performed. The surgical stage of the lung cancer was pT1bN0M0 (stage IA).

This patient was initially misdiagnosed with metastatic lung cancer, due to the rarity of solitary TO and insufficient understanding of the disease. This patient had chronic respiratory failure, and was initially considered to be at extremely high surgical risk. However, the pulmonary functions and the blood gas

analysis of the patient were significantly improved when the benign nodules obstructing the left lower lobe were removed by interventional bronchoscopy. Finally, the lung cancer in the right upper lobe was completely resected, and the postoperative pathological stage was IA. In the literature, adenocarcinoma appears to be the main pathological type in patients with TO.<sup>3</sup> However, most available literature come from case reports. Therefore, the potential relationship between TO and lung adenocarcinoma requires further study.

#### COMPETING INTEREST:

The authors declared no conflict of interest.

#### AUTHORS' CONTRIBUTION:

HY: Drafted, revised, and edited the manuscript.

JC: Performed data collection, analysis, and interpretation.

SL: Performed data collection.

All authors approved the final version of the manuscript to be published.

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