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Case report

Intractable cough due to endobronchial chondroma

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A B S T R A C T

A 62-year-old man, suffering from bronchial asthma was evaluated due to intractable cough. His dyspnea was controlled but cough remained unresponsive to escalation of asthma management steps. Cough occurred in bouts, especially during night time and was occasionally productive of mucoid sputum. Other than bilateral rhonchi on chest auscultation, remaining systemic examination was unremarkable. CT chest showed a mass lesion in the bronchus intermedius that was confirmed on bronchoscopy and was removed after electrocautery snare excision. Histopathology of the lesion was consistent with endobronchial chondroma. The patient experienced a dramatic resolution of cough post tumor removal. Follow up bronchoscopy after 24 months revealed no tumor recurrence.

1. Introduction

Endobronchial tumors commonly represent malignant neoplasms, however benign tumors like chondromas are rare tumors of the tracheobronchial tree [1]. Despite their rarity, endobronchial chondromas should be considered in the differential diagnosis of endobronchial tumors as their earlier recognition and resection can prevent airway obstruction and its associated complications. This case describes the presentation and management of an endobronchial chondroma in an asthmatic patient presenting with intractable cough.

2. Case report

A 62-year-old office worker (Pakistani) was evaluated in pulmonary clinic due to intractable cough of three to four months duration. He was an ex-cigarette smoker and was suffering from bronchial asthma since childhood. He reported good asthma control with the use of inhaled formoterol and budesonide. Over the last few months, his dyspnea was controlled but his cough remained unresponsive to the addition of theophylline and montelukast. Cough with scanty mucoid sputum production occurred in bouts, especially with change of postures at night. There was no history of chest pain, hemoptysis, night sweats or weight loss. Other than controlled asthma and gastritis, his past and family histories were unremarkable. His vital signs were stable, there was slight reduced intensity of breath sounds on right side of chest and bilateral wheeze on chest auscultation, with remaining normal systemic physical examination. Chest radiograph was clear and baseline haematological, coagulation and serum biochemical profiles were normal as was abdominal ultrasound examination. In suspicion of a co-existent disease like bronchiectasis or lung infection which could be responsible for uncontrolled cough, he had a high resolution computerised tomography (HRCT) of chest. Besides the presence of upper lobe centrilobular emphysema, HRCT incidentally revealed the presence of a mass lesion in the truncus intermedius (Fig. 1a). Bronchoscopy showed the presence of a pedunculated, vascularised and pink mobile mass in the middle of truncus intermedius, moving to and fro with respiration. Using flexible fibreoptic bronchoscope, electrocautery snare was passed through working channel of the scope and opened over the tumor, grasping its base followed by closure (and thus strangulating) with simultaneous application of electrocautery resulting in coagulation and cutting the tumor from its origin. Tumor was removed in total and measured 1.6×1.1 cm after excision (Fig. 1b). The base of the tumor (and minor oozing) was further cauterised from its origin in the apical segment of right lower lobe. Post excision inspection of the distal middle and lower lobe segments showed patent orifices and sharp sub-carinae. Histopathology of the excised tumor revealed polypoidal tissue covered by respiratory and focally squamous mucosa. The lesional tissue showed congested vessels in the lamina propria with some scattered inflammatory cells. In the stroma, there was a large area occupied by hyaline cartilage which exhibited lacunae in which were present single chondrocytes with small and inconspicuous nucleoli. Focally, there was collagenous tissue between the main stromal cartilage and peripheral cartilage of the bronchus. The morphology of the tumor (Fig. 2a and b) was diagnostic for endobronchial chondroma. The patient made an uneventful recovery and had dramatic resolution of cough following tumor removal. Follow up bronchoscopy after 18 months revealed no

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tumor recurrence.

3. Discussion

Benign lung tumors can arise from all cell types within the lung including epithelial tumors, like papillomas and adenomas, and non-epithelial tumors like hamartoma, lipomas, leimyomas and chondromas. Most benign lung tumors present as asymptomatic solitary pulmonary nodules, a minority may cause symptoms due to airway obstruction [2]. Pulmonary hamartomas are the commonest benign neoplasms and are composed of varying amounts of at least two mesenchymal elements such as cartilage, fat, connective tissue, and smooth muscle [3]. Chondromas are distinct in being purely cartilaginous (hyaline cartilage) without other stromal and epithelial elements characteristic of hamartoma [4]. Chondromas typically grow in bones and more frequently in the axial skeleton; rarely they can appear in the larynx, trachea, or major bronchi [3,4]. The true prevalence of chondromas is unknown; bronchial chondromas are also rarely described in patients with Carney's triad (pulmonary chondromas, paragangliomas and gastric stromal tumors) [5]. Our patient had no gastric symptoms and his abdominal ultrasound including adrenals was normal. In majority of the described cases, patients with endobronchial chondromas had intractable cough, asthmatic symptoms or hemoptysis, and chest x-ray revealed lobar consolidation or atelectasis [3,4]. Chest CT typically reveals a solitary endobronchial lesion (as was evident in our patient) that may occlude a bronchus and cause complications like pneumonia, atelectasis, bronchiectasis and fibrosis [4]. Similar to our case, majority of the patients have involvement of right side of bronchial tree and the most common bronchoscopic findings were pedunculated, vascularised, pink tumors [4,6]. Precise diagnosis requires a core biopsy (preferable excisional) showing cartilaginous lesion because superficial biopsy and brushings may reveal normal bronchial or respiratory mucosa that typically covers chondromas, as were the histological findings in our patient [6]. The reported treatments vary widely and include resection of the tumor through different techniques (bronchoscopy, video-assisted thoracoscopic surgery, or thoracotomy) [4,6]. Prompt recognition and resection of endobronchial chondromas is important to prevent airway obstruction and its associated complications.6.

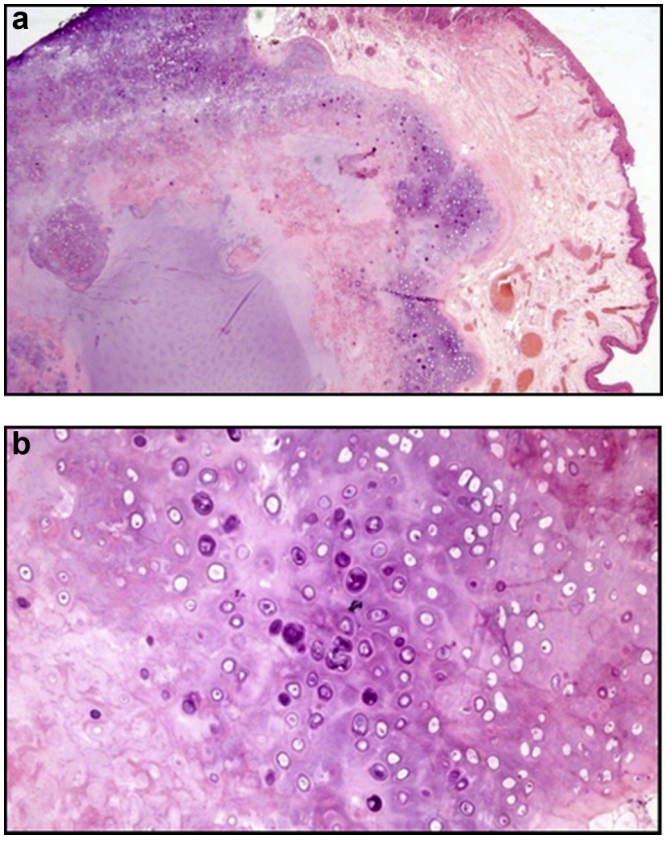

Fig. 2. Polypoidal tissue covered by respiratory and focally squamous mucosa; lesional tissue showing congested vessels in the lamina propria with some scattered inflammatory cells (a) and stroma showing hyaline cartilage exhibiting lacunae in which are present single chondrocytes with small and inconspicuous nucleoli (b).

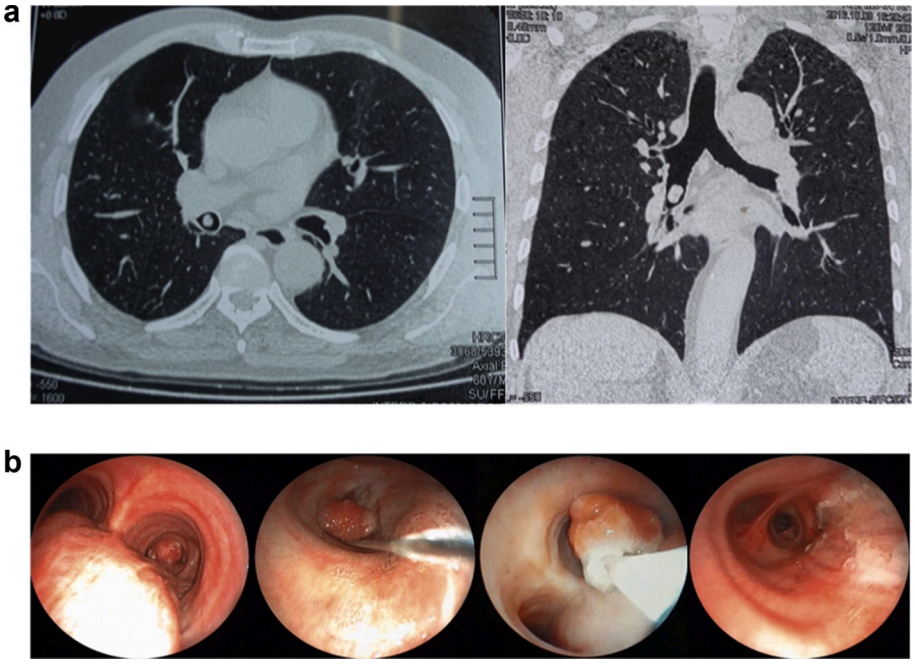

Fig. 1. HRCT chest showing upper lobe centrilobular emphysema and a mass lesion in the truncus intermedius (1a); bronchoscopic sequential images (left to right) showing a mass in bronchus intermedius, snare application, removal and post removal clear airway (with some mucus).

Declaration of competing interest

There is no conflict of interest related to this article.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.rmcr.2019.100968.

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