




Case Report

Benign Endobronchial Inflammatory Polyp with Cystic Degeneration: A Case Report

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Abstract

Endobronchial lesions causing luminal obstruction are mostly found in bronchogenic carcinoma. Inflammatory polyps originating from the tracheobronchial tree are rarely found. Here we report a case of an elderly male presenting with prolonged cough who was found to have an endobronchial inflammatory polyp. The polyp was resected completely with the use of the flexible bronchoscope and electrocautery snare.

KEYWORDS: Benign, inflammatory, polyp, resection

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INTRODUCTION

Inflammatory polyps of the tracheobronchial tree are very rare and are considered to be nonneoplastic endobronchial lesions [1]. They are associated with repeated and chronic inflammatory injury to the airways and represent an exaggerated but localized inflammatory process [2,3]. The patients are usually asymptomatic because of the slow-growing nature of the polyps, but they may present with a variety of symptoms such as cough, dyspnea, and hemoptysis, or obstructing symptoms such as atelectasis and pneumonia [4]. Majority of the cases are diagnosed incidentally and may be confused with bronchogenic carcinoma, which warrants an early diagnosis and appropriate management. Here we report a case of an elderly male presenting with prolonged cough and a recurrent lower respiratory tract infection. On evaluation, the patient was found to have an inflammatory polyp that was removed completely using electrocautery snare through a flexible bronchoscope.

CASE PRESENTATION

A 61-years-old male patient presented to us complaining of cough, dyspnea, and left-side chest pain that had lasted for 2 years, with worsening of these symptoms and high-grade fever, with chills, in the past 5 days. He also had frequent worsening of his underlying symptoms with increased sputum purulence. The patient had a history of pulmonary tuberculosis and was treated with a 6-month course of anti-tubercular treatment (isoniazid, rifampicin, ethambutol, and pyrazinamide) 2 years before with full recovery. The patient also had a history of allergic rhinitis for 5 years, diabetes mellitus and hypertension for 1 year, and was receiving treatment for the same.

A general physical examination was unremarkable except for tachypnea (a respiratory rate 28 breaths/minute). On auscultation, crepitations were localized to the left mammary area. A chest radiograph demonstrated multiple cystic lesions and parenchymal infiltrates at the left upper zone suggestive of the left upper-lobe bronchiectasis. A high-resolution CT scan of the thorax was performed, revealing a well-defined soft tissue endobronchial mass lesion of 19.5×11.9×12.4 mm in size in the left main bronchus, extending into the proximal part of the apico-posterior segment. A postcontrast CT scan showed an enhancement of the lesion and multiple enhancing mediastinal lymph nodes (Figure 1). The lung window demonstrated bronchiectasis, mucus-filled bronchus, calcification, and centrilobular nodules with a tree-in-bud pattern, suggestive of postobstructive pneumonia, along with diffuse emphysematous changes (Figure 2). A thorax CT was suggestive of neoplastic etiology with postobstructive pneumonia.

Diagnostic bronchoscopy was performed, which showed a well-circumscribed cystic lesion with underlying growth at the distal part of left main bronchus, arising from and near, completely obliterating the opening of the upper division bronchus

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Figure 1. Contrast enhanced computed tomography (CECT) thorax (mediastinal window) showing well defined soft tissue opacity mass lesion in left main stem bronchus causing abrupt cut-off. Multiple enhancing mediastinal nodes are also seen

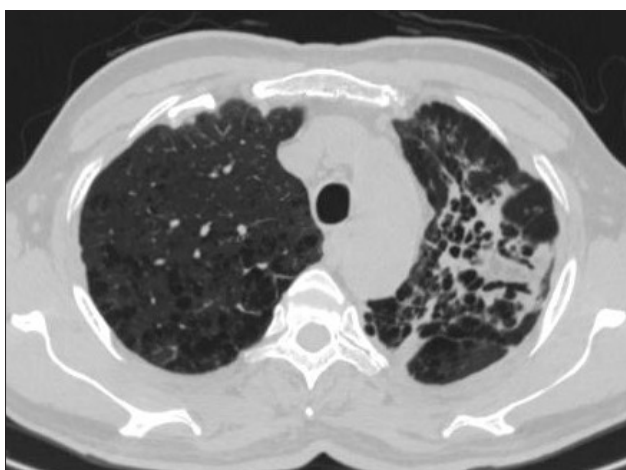


Figure 2. CECT thorax (lung window) reveals bronchiectatic changes, mucous filled bronchi and centri-lobular nodules with tree-in-bud pattern suggestive of post obstructive pneumonia
CECT: contrast enhanced computed tomography

(Figure 3). White cheesy material was recovered after taking biopsy from the cystic lesion. A histopathological examination of the endobronchial biopsy specimen revealed the lining respiratory epithelium and focal squamous metaplasia at places. Subepithelial tissue consisted of fibro-collagenous tissue with mild to moderate mononuclear infiltrates.

The diagnosis of the endobronchial polyp with cystic degeneration was made, and the patient was planned for the bronchoscopic resection. Bronchoscopy was performed under general anesthesia with a small-sized metallic endo-tracheal tube, and the bronchoscope was passed along the side of it. The polyp was lassoed using electro-cautery snare and resected en bloc by repeating the cut and coagulation cycle (Figure 4). The resected mass was grasped with the toothed endobronchial biopsy forceps and taken out along with the bronchoscope. The remnants at the base of the lesion were ablated using argon plasma coagulation (APC). After removal of the mass, openings of the lingular segment and anterior segment bronchus became visible (Figure 5). Histopathological examination of the resected specimen was suggestive of chronic inflammatory pathology (Figure 6). The patient provided informed consent for publication of the present case report.

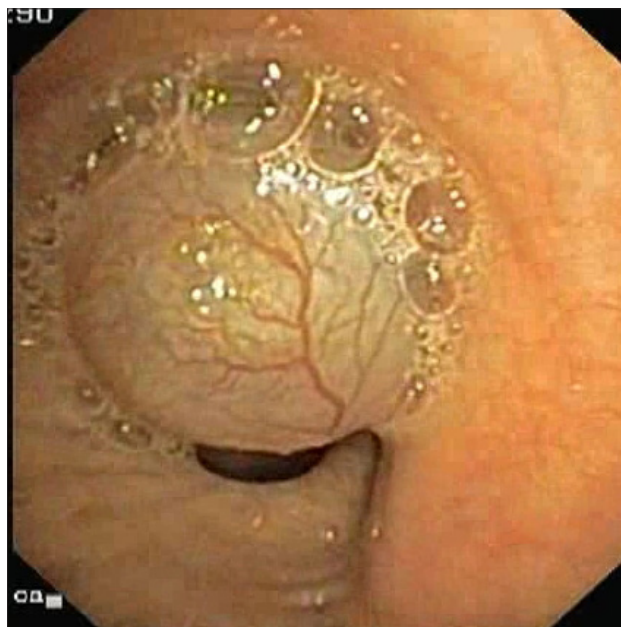


Figure 3. Diagnostic bronchoscopy demonstrates well defined cystic lesion at the distal part of left main stem bronchus

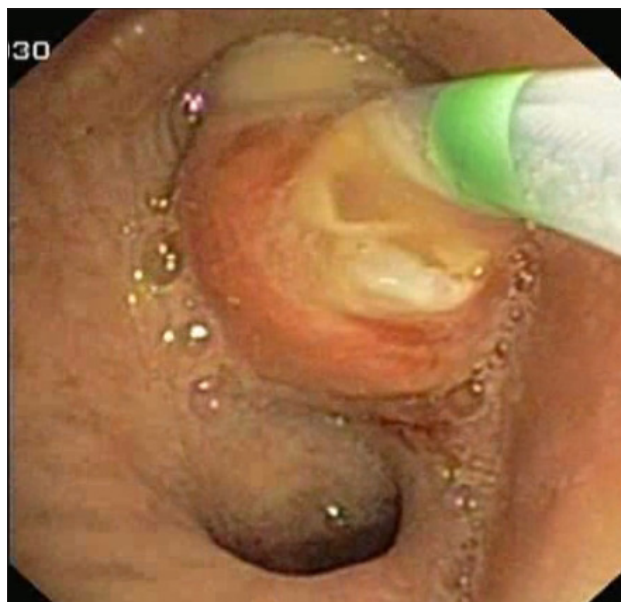


Figure 4. Resection of endobronchial mass using electrocautery snare

DISCUSSION

Endobronchial polyps of the tracheobronchial tree are histopathologically distinct nonneoplastic lesions and are rarely encountered. They are classified as solitary papilloma, multiple papilloma, and inflammatory polyps [5]. The true incidence of this pathologic entity is not known and is limited only to the case reports and the case series [2,6-8].

Endobronchial polyps represent an exaggerated and localized inflammatory response to airway injury caused by either acute injury or chronic airway irritation like in chronic bronchitis, bronchiectasis, bronchial asthma, aspirated foreign body, and thermal injury [2,3,9-11]. The development of endobronchial polyps was also noted in patients who underwent endobronchial ultrasound-guided transbronchial needle aspiration, termed tracheobronchial puncture site nodular reaction

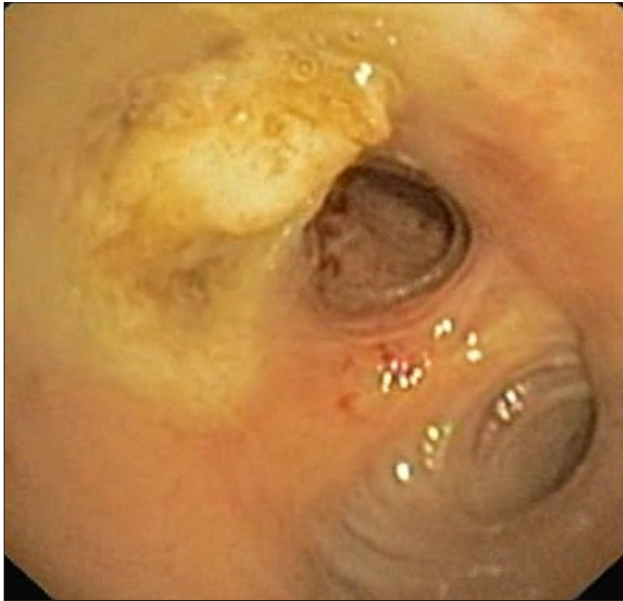


Figure 5. Openings of anterior segment bronchus and lingular segment bronchus became visible post resection with underlying bronchiectatic changes

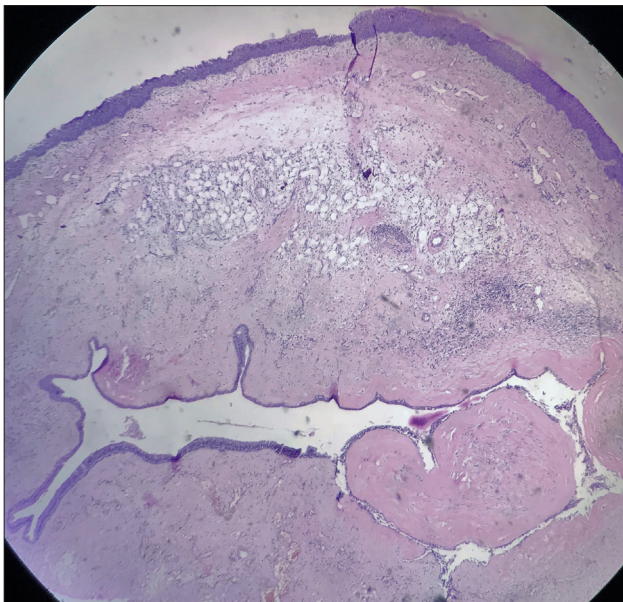


Figure 6. Histopathological examination of the resected specimen: Section reveal lining epithelium (pseudo-stratified columnar) with focal metaplastic changes. Sub-epithelial tissue comprises fibro-collagenous stroma with mono-nuclear cells infiltrate

(TPNR) [12-14], use of double lumen endo-tracheal tube for thoraco-abdominal surgery [15], and at the site of the airway stent [16]. The various forms of injury lead to breakage of the bronchial mucosa and formation of the granulation tissue. This granulation tissue may further undergo replacement by the fibrous connective tissue and epithelization to finally convert into polyp. In our case, there was bronchiectasis of the left upper lobe secondary to previous tubercular infection that may have incited the recurrent injury to the bronchial mucosa and the formation of the polyp.

Clinically, the patients usually present with complaints of prolonged cough, dyspnea, recurrent pneumonia, wheezing, and occasionally hemoptysis. These symptoms occur

either alone because of obstructing endobronchial polyp, or because of some primary pathology such as asthma, bronchiectasis, a foreign body, etc.

The natural course of the endobronchial lesions is unknown. Also, there are no data regarding any possibility of the malignant transformation of these lesions, so the patient should be wisely selected either for conservative management or for curative resection. In some cases with symptomatic lesions, success was achieved with inhaled corticosteroids and anti-biotics [3,11], but majority of cases requires curative resection. This can be achieved by either surgical resection of the affected segment or lobe or bronchoscopic removal of the polyp. The choice of bronchoscope, either rigid or flexible, should be based on the location of the tumor. Rigid bronchoscopes should be used in tumors within the trachea and proximal main bronchi, as there is a chance of loss of grip and distal migration of the resected tumor [17]. Bronchoscopic removal of the polyps could be enabled by the use of electrocautery or laser [18]. In the present case, we used electrocautery snare to resect the polyp completely and APC for debulking the base of the polyp.

In conclusion, patients with chronic airway irritation may develop endobronchial polyps, which further leads to bronchial obstruction, retention of the secretions, and infection. An early diagnosis and appropriate management are necessary to exclude the possibility of malignancy and further parenchymal destruction. Bronchoscopic removal of the endobronchial polyp should be a preferred approach in the appropriate management of these cases.

Informed Consent: Verbal informed consent was obtained from the patient who participated in this case.

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