Case Report

Bronchial adenoma masquerading as pneumonia: a rare case report

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ABSTRACT

A 29-year old non-smoker woman presented with breathlessness, cough with minimal expectoration and hemoptysis. Serial chest X-rays were suggestive of progressive collapse of right lung field. CECT chest revealed large endobronchial lesion in right main bronchus and obstructive collapse consolidation of right lower lobe and part of the middle lobe. Fiberoptic bronchoscopy revealed an endobronchial mass obstructing the right main bronchus. This reddish polypoid mass bleed on touch that was suggestive of bronchial adenoma and it was confirmed by histopathological examination. Patient was treated empirically with anti-tubercular drugs due to high prevalence of tuberculosis in our setting; however, the patient had clinical deterioration. Following the histopathology report, the diagnosis of bronchial adenoma was established. Bronchial adenoma should be considered in a young female patient presenting with hemoptysis and obstructive pneumonia.

Keywords: Bronchial Adenoma, Obstructive Pneumonitis, Hemoptysis, Bronchoscopy

The bronchial mucous gland adenoma (MGA) is a rare, benign, predominantly exophytic tumor of the tracheobronchial seromucinous glands and ducts. The majority arises within the main, lobar or segmental bronchi [1]. MGA presenting as a peripheral lung mass is extremely rare. The lesion is classified as a benign epithelial tumor of the lung, among the salivary gland-type adenomas [2]. In this article, we report a case of mucous gland adenoma arising from the right main bronchus, which was initially misdiagnosed as pneumonia.

CASE REPORT

A 29-year-old nonsmoker, non-diabetic and normotensive female patient presented with history of cough with minimal expectoration, hemoptysis and breathlessness for 2 months duration. She also complained of off and on fever (low grade) without loss of appetite and weight. There was no history of foreign body inhalation. In the past history, she completed a course of anti-tubercular therapy for pulmonary tuberculosis 1½ year back on the basis of chest X-ray findings. She was also on treatment for hypothyroidism since last 2 years. On physical examination, there was no clubbing or lymphadenopathy. Respiratory examination revealed reduced air entry in right side of chest with coarse crepitations. Rest of the systemic the examination was within normal limits.

Routine blood investigations were within normal limit except raised total leukocyte counts with neutrophilia. Serial chest X-ray (**Fig. 1**) showed progressive collapse of right lung field. Contrast-enhanced computed tomography (CECT) chest showed a large endobronchial lesion (18x13x12 mm) in the right main bronchus causing significant compromise with near total occlusion of the right lower lobe bronchus, obstructive collapse consolidation of right lower lobe and the part of the middle lobe, significant right hemithorax volume loss and small pleural effusion. There was no evidence of any calcification or necrosis on CT scan (**Fig. 2**).

Fiberoptic bronchoscopy (**Fig. 3**) done revealed a shining polypoidal growth arising from right main bronchus causing complete occlusion of right main bronchus which bleed on touch and suggested the possibility of a pulmonary adenoma. Microscopically, tumor cells were arranged in small columns, clusters and adenoid pattern (**Fig. 4**). Tumor cells were cuboidal to low columnar having round to oval, almost uniform hyperchromatic nuclei and eosinophilic to vacuolated cytoplasm (**Fig. 5**). Nuclear pleomorphism or mitosis could not be appreciated. Background in image showing pools of mucoid material and few small sized vessels with fibroblastic proliferation (**Fig. 6**). Pathological diagnosis of mucus secreting epithelial tumor (bronchial ademona) was made. Final diagnosis of mucus gland bronchial adenoma arising from right main bronchus was made. Further treatment options explained to relatives and patient was referred for surgical excision of tumor.

DISCUSSION

Although bronchogenic carcinoma is the most common cause of primary pulmonary neoplasm, bronchial adenoma should be considered in middle-age non-smoking female patients [3]. Endobronchial lesions in the main, lobar, segmental, or subsegmental bronchus are a common presentation [4]. This tumor was first reported in 1882 by Muller as a pathologic entity separate from carcinoma of the lung and was first named bronchial adenoma arising from mucous gland [5]. Peripheral tumors, presenting with an asymptomatic pulmonary nodule, occur in 20% of the cases and tracheal occurrences have been reported, although rarely. The tumor occurs with equal frequency in men and women and at any age (mean age 52 years), including children [1].

The differential diagnosis of a mucus gland adenoma includes Bronchogenic carcinomas, Metastatic cancer, Hamartoma, Granulomatous disease etc. No single investigative method is adequate to diagnose bronchial tumors. Radiographic and procedural techniques are usually required to locate lesions. Most patients with central MGA have symptoms of cough, fever, and recurrent pneumonia. Chest x-ray typically reveals a coin lesion but otherwise only obstructive pneumonitis and postobstructive atelectasis are observed [6].

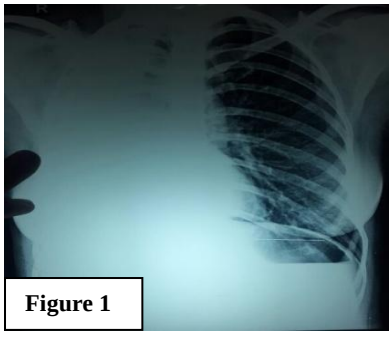
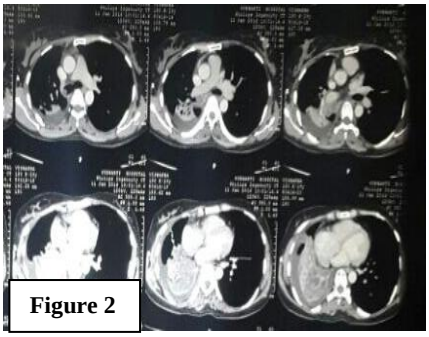


Figure 1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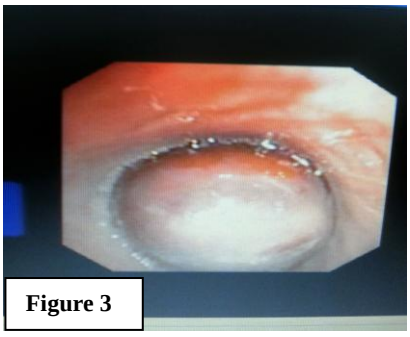
Figure 3

Figure 1: Chest x ray showing near total collapse of right lung. Figure2: CECT shect showing a tumour obstructng the righr main bronchus with collapsed right middle and lower lobe with small pleural effusion. Figure3: Bronchoscopic picture showing a shining polypoidal red lesion obstructing right main bronchus.

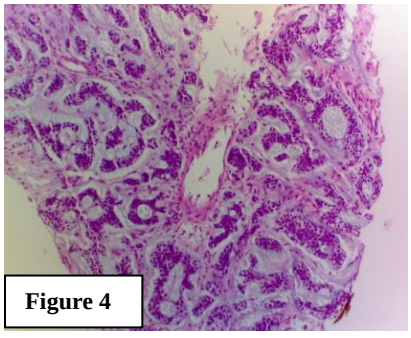
Figure 4

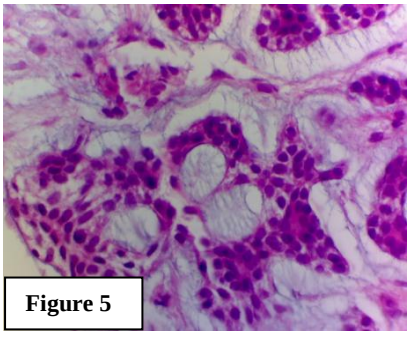
Figure 5

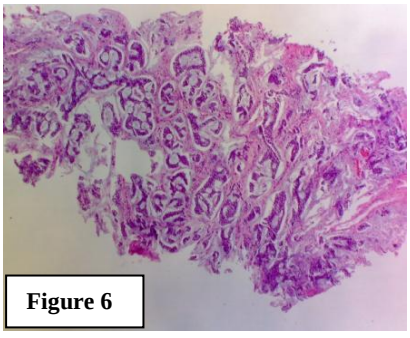
Figure 6

Figure 4: Tumor cells arranged in small columns, clusters and adenoid pattern. Figure 5: Photomicrograph showing cuboidal to low columnar having round to oval, almost uniform hyperchromatic nuclei and eosinophilic to vacuolated cytoplasm. Figure 6 : Nuclear pleomorphism or mitosis could not be appreciated. No normal tissue seen. Background shows pools of mucoid material and few small sized vessels with fibroblastic proliferation.

In our case, the patient had symptoms of two months duration and was wrongly diagnosed as tuberculosis and treated with ATT for six months. Even radiologic investigations proved to be inconclusive. There was nothing on bronchoscopic findings that would distinguish mucous gland adenoma from other neoplastic and non-neoplastic bronchogenic lesions. Only, histopathological examination was the key to the diagnosis.

Pulmonary adenomas are uncommon and can be classified as alveolar adenoma, papillary adenoma, mucinous cystadenoma or adenomas of the salivary-gland type, which include pleomorphic adenoma, monomorphic adenoma, myoepithelioma, and mucous gland adenoma [7]. Histological differential diagnoses include low-grade mucoepidermoid carcinoma, primary adenocarcinoma as well as the benign adenomatous lesions, glandular papilloma, papillary adenoma, alveolar cell adenoma, and mucinous cystadenoma. The mucoepidermoid carcinoma is a rare malignant tracheobronchial tumor but encountered more frequently than the bronchial mucous gland adenoma. The careful assessment of squamous and intermediate cells confirms the diagnosis [1,8].

Mucinous cystadenoma consists of a unilocular, occasionally multilocular cyst filled with mucus and enclosed by a fibrous capsule. The single layer of mucinous epithelium may range from tall columnar to low cuboidal cells, and may be focally absent or piled up in papillary projections. Mucus, sometimes containing small clusters of detached epithelial cells may be present in and outside the capsule [9]. Inflammation and fibrosis of the cyst wall tend to cause flattening or loss of the epithelium. Invasion of the lung parenchyma, significant atypia and prominent pseudostratification suggest mucinous cystadenocarcinoma [9]. Mucoepidermoid carcinoma may be cystic and has a mucus-rich epithelium, but is composed of uniform, polygonal or columnar cells arranged in a sheet or trabecular that are either solid or contain well-defined, cyst-like spaces. Intermediate cells are arranged in a sheet-like ‘‘epidermoid’’ fashion. Mucinous bronchioloalveolar carcinoma is a well-differentiated neoplasm lining along the alveolar septa and composed of tall columnar cells with basal nuclei and abundant, mucin-containing cytoplasm [9]. The diagnosis is important because minimal treatment and management such as endoscopic removal or wedge excision may be sufficient for MGA, in contrast with more invasive forms of treatment required for other tumors of the lung [10].

CONCLUSION

Benign glandular tumors of the tracheobronchial tree remain out of the limelight of pulmonary medicine. They are capable of provoking mechanical and symptomatic bronchial obstruction. Nevertheless, many patients with mucous gland adenoma go on for years with repeated hemoptysis and recurrent pneumonias prior to the diagnosis. This observation gives credence to the necessity of an in-depth lung workup in patients presenting with signs of respiratory tract infections and such unusual differential diagnoses should be considered.

REFERENCES

1. England DM, Hochholzer L. Truly benign ‘‘bronchial adenoma’’. Report of 10 cases of mucous gland adenoma with immunohistochemical and ultrastructural findings. Am J Surg Pathol. 1995; 19(8): 887-99.
2. Flieder DB, Thivolet-Bejui F, Popper H. Mucus gland adenoma. In: Travis WD, editor. World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of the Lung, Pleura, Thymus and Heart. Lyon: IARC Press; 2004. p. 85
3. Attar S, Miller JE, Hankins J, Thompson BW, Suter CM, Kleger PJ, et al. Bronchial adenoma: a review of 51 patients. Ann Thorac Surg. 1985; 40(2): 126-32
4. Merrick SH. Tumors of the lung other than bronchogenic carcinoma. In: Baum GL, Crapo JD, Celli BR, Karlinsky JB, eds. Texbook of pulmonary diseases, 6th ed. Philadelphia: Lippincott Raven, 1998: 1389-98.
5. Gilman RA, Klassen KP, Scarpelli DG. Mucous gland adenoma of bronchus; report of a case with histochemical study of secretion. Am J Clin Pathol. 1956; 26: 151–4.
6. Weinberger MA, Katz S, Davis EW. Peripheral bronchial adenoma of mucous gland type; clinical and pathologic aspects. J Thorac Surg. 1955; 29(6): 626-35.
7. Sekine I, Kodama T, Yokose T, Nishiwaki Y, Suzuki K, Goto K, et al. Rare pulmonary tumours - A Review of 32 cases. Oncology. 1998; 55: 431–434.
8. Gaissert HA, Mark EJ. Tracheobronchial gland tumours. Cancer Control. 2006; 13(4): 286–94.
9. Travis WD, Colby TV, Corrin B, Shimosato Y, Brambillia E. Histological typing of lung and pleural tumors. WHO international Histological Classification of Tumors. 3rd ed. Geneva: Springer, 1999; 27.
10. Kwon EJ, Kim TS, et al. Mucus gland adenoma presenting as a peripheral lung mass; a brief case report. Korean J Pathol. 2004; 38: 126-8.

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