A Case of Endobronchial Inflammatory Polyp With Asthmatic Symptoms

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Abstract

We report an unusual case of endobronchial inflammatory polyp in a 36-year-old woman who presented with a history of dyspnea, intermittent cough, wheeze and recurrent infections. She had been treated for bronchial asthma for three years but never recovered. The right lower lobe was totally atelectatic at computed tomography of the thorax. Bronchoscopic biopsy taken from the obstructive lesion did not lead to specific diagnosis. An exploratory surgical resection was performed and a diagnosis of endobronchial inflammatory polyp was made histopathologically. The etiology could not be identified. Six months after the resection, the patient fully recovered and did not suffer from asthmatic complaints.

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Introduction

Endobronchial inflammatory polyps (EIPs) are nonneoplastic in nature and, according to the World Health Organization/International Association of the Study of Lung Cancers (WHO/IASLC) classification of lung and pleural tumors, are differentiated histopathologically from other benign tumors on the basis of granulation tissue-like stroma and abundant inflammation (1). In adults, EIPs may be encountered in some chronic inflammatory conditions, such as foreign body aspiration, asthma, chronic sinusitis, chronic smoke inhalation, mycobacterial infections and inhalation injury (2-4). Here we report a case of an EIP for which we could not find a well-known etiologic factor.

Case Report

A 36-year-old woman presented with a 3-year history of dyspnea, intermittent cough, wheeze and recurrent infections. There was no asthma and atopy history in her family. She was seen previ-

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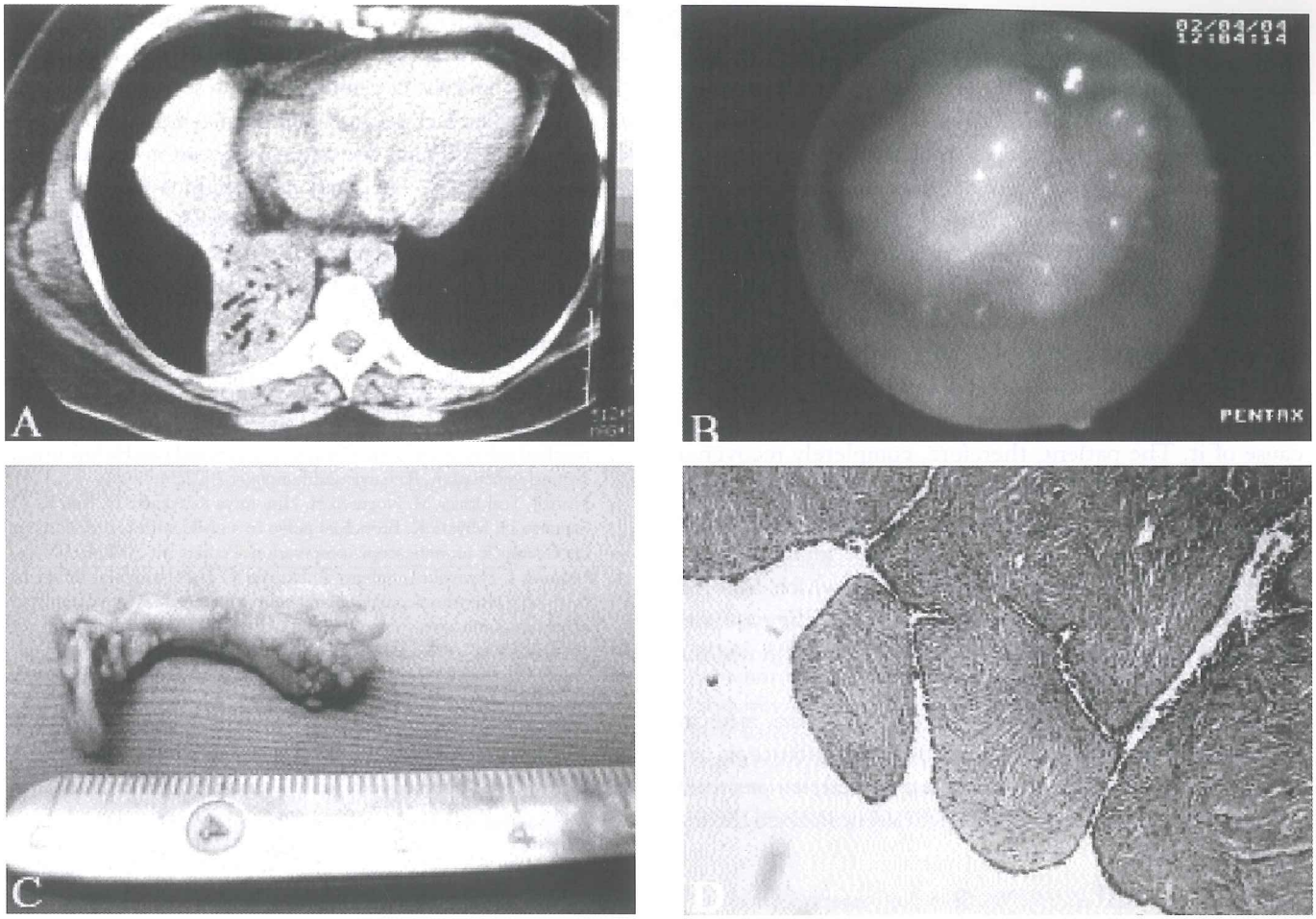

Figure 1. *A) Computed tomography of the thorax showing total atelectasy of the lower lobe of the right lung; B) Bronchoscopic view showing a protruding polyp in the bronchus intermedius; C) Macroscopical appearance of the polypoid growth. Note the buddings on the surface; D) Histopathology showing focal mononuclear inflammatory cells in areas of dense collagenized fibroblastic tissue. A thin epithelial lining was observed on the surface of the polypoid lesion (Hematoxyline-Eosin, original X30).*

ously in different institutions and treated for asthma with various bronchodilators and steroids. She got some degree of benefit from these treatments initially, but not lately. At physical examination, right side basilar inspiratory crackles and bilateral expiratory rhonchi were detected. On the chest radiographs, there was right-sided hyperlucency and a slight shift of the mediastinum to the right hemithorax. A computed tomogaphy of the thorax revealed atelectasis in the lower lobe (Figure 1A).

Laboratory workup was significant for an elevated sedimentation rate which was 45 mm/h. Epidermal prick tests (Stallergenes SA, France) for allergic states were negative. FEV_1 was 1.86 l (66% of predicted) and reversibility was negative. No significant finding was found at ear-nose-throat consultation.

At bronchoscopic evaluation, a pinkish, bright, pedinculated polyp was seen moving up and down in the right intermediary bronchus and almost totally obstructing it (Figure 1B). It was not possible to pass the bronchoscope behind the polyp to assess its segmental origin, but it was thought to originate from the lower lobe because the middle lobe orifice was partly identified. A biopsy was performed with great difficulty because of the extremely tough and firm nature of the polyp. Histopathologic evaluation of bronchial lavage was reported as class II inflammation and the biopsy specimen was nonmalignant in nature.

Exploratory thoracotomy was planned for a definite diagnosis and treatment. A right lower lobectomy had to be performed because the right lower lobe could not be reinflated after resection, possibly due to prolonged atelectasis and parenchymal destruction. No endobronchial foreign body was found. The postoperative period was uneventful. EIP was diagnosed histopathologically (Figures 1C and D). At follow-up 6 months later, the patient fully recovered and her FEV_1 was 2.10 l (75.5% of predicted). She did not suffer from recurrent infections any more. An endoscopy of the gastrointestinal system revealed no polypoid lesions.

Discussion

Endobronchial inflammatory polyps are rarely encountered lesions. They can be subdivided into benign inflammatory polyps which develop as a result of chronic bronchial inflammation and, endobronchial papillomas which may be of viral origin and which may undergo malignant transformation

(5). EIPs are exteremely rare benign lesions and we were unable to find any reports about their incidence.

The triggering factor for EIP development is usually a local irritation of the bronchial mucosa (4). This may be due to foreign bodies, inhalation of hot, irritant or toxic gases, asthma or to the effect of a mechanical factor such as endobronchial intubation. In addition to local irritation, the subsequent or underlying infection plays an important role in the progress of the lesion (4). Chronic infections such as mycobacterial infections or sinusitis may act as triggerring factors for EIPs. In our patient, recurrent infections were thought to be a result of endobronchial obstruction due to the presence of an EIP rather than a cause of it. The patient, therefore, completely recovered after resection of the polyp. Inhalation of toxic and irritant gases is one of the etiologic factors of EIPs. A case of endobronchial polyposis which developed following titanium tetrachloride inhalation injury and which also led to respiratory failure has been reported (6). The case was treated by corticosteroids and complete resolution was achieved at the end of one year.

Management options of EIP are simple observation, medical therapy such as corticosteroids, antibiotics, endoscopic removal or surgical resection (7). In our patient, we preferred surgical resection since the EIP had totally obstructed the intermediary bronchus and endoscopic removal was impossible. A right lower lobectomy had to be performed, because the lower lobe could not be reinflated after resection possibly due to prolonged atelectasis and parenchymal destruction.

In conclusion, EIPs are rare but may be seen in very different clinical conditions. They may cause asthma-like symptoms and obstructive lung damage. They should be considered in the differential diagnosis of asthma-like symptoms, particularly in patients not responding to treatment.

References

1. Travis WD, Colby TV, Corrin B, Brambilla E, Sobin LH. Histological typing of lung and pleural tumors. Berlin. Springer; 1999.
2. McShane D, Nicholson AG, Goldstrow P, et al. Inflammatory endobronchial polyps in children: Clinical spectrum and possible link to mechanical ventilation. Pediatric Pulmonology 2002;34:79-84.
3. Nishi J, Yoshinaga M, Noguchi H, Ninomiya K, Akaike H, Kaji K, Takamatsu H, Miyata K. Bronchial polyp in a child with tuberculosis under fiberoptic bronchoscopic observation. Pediatr Int 2000;42:573-6.
4. Mitsuko I, Hiroyuki I, Saburo T, Hiroko K. Endobronchial inflammatory polyp after thoracoabdominal aneurysm surgery: A late complication of use of a double-lumen endobronchial tube. Anesthesiology 1996; 84(5):1234-6.
5. Smith RE. Endobronchial polyp and chronic smoke injury. Postgraduate Medical Journal 1989;65:785-7.
6. Park T, DiBenedetto R, Morgan K, Colmers R, Sherman E. Diffuse endobronchial polyposis following a titanium tetrachloride inhalation injury. Am Rev Respir Dis 1984;130:315-7.
7. Schnader J, Harrell J, Mathur P, Joseph C, Koduri J, Kvale P. Bronchiectasis and endobronchial polyps. Chest 2002;121:637-43.