CASE REPORT

Hodgkin's Lymphoma presenting as an obstructing endobronchial mass—A rare presentation

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SUMMARY

We report a case of Hodgkin's lymphoma presenting as an endobronchial mass in a 40-year-old man with history of 8 months of non-specific symptoms like cough, fatigue and weight loss. Initially he was treated with broad-spectrum antibiotics for suspicion of pneumonia without recovery. Radiographic work-up showed cavitary consolidation of the upper lobe of the left lung, followed by bronchoscopy which showed obstructing mass of the upper lobe of the left lung mimicking primary lung carcinoma. Immunohistochemical staining of the specimen was suggestive of Hodgkin's lymphoma. The patient responded well to the chemotherapy regimen.

BACKGROUND

Patients with Hodgkin's lymphoma have a 15%–40% likelihood of pulmonary involvement. It usually presents as a solitary lung mass, cavitary lung lesion or widespread involvement of the lungs, but presentation as an endobronchial obstructing mass is very rare.¹ A case of Hodgkin's lymphoma presenting as an endobronchial obstructing mass is reported here.

CASE PRESENTATION

A 40-year-old man presented with 8 months of insidious-onset cough, fatigue and progressive weight loss despite good appetite. He was treated empirically for bronchitis given his smoking history, which did not help much. His cough worsened and he was given amoxicillin/clavulanic acid, which mildly improved his symptoms. The patient denied having fever, night sweats, chills, dyspnoea and chest pain. The patient was self-employed and installed garage doors. His medical history was only significant for arthritis and Gastroesophageal reflux disease (GERD). He was a non-alcoholic, with a 3.6 pack-year history of smoking. There was no pertinent surgical history. Family history was significant for lung cancer in father and stomach cancer in mother. Vital signs were stable. Physical examination revealed an alert and cooperative man sitting comfortably on chair. Conjunctiva was clear, anicteric and no palpable lymphadenopathy was observed. On chest exam lungs were clear to auscultate, with no crackles or wheeze, and no dullness to percussion. Abdomen was soft, non-tender with no hepatosplenomegaly. Cardiac and nervous system exam was unremarkable.

INVESTIGATIONS

Blood work, including rheumatological studies and cultures, was negative except for eosinophilia. Subsequent chest radiograph revealed an irregular

left hilar lung opacity (figure 1C). CT scan of the thorax showed a cavitary consolidation of the left upper lobe of the lung (figure 1A,B). Fibre-optic bronchoscopy with tissue sample, which was only taken from endobronchial mass, showed an obstructing lesion in the left upper lobe bronchus, concerning for primary lung cancer (figure 2). H&E stain shows a mixed population of inflammatory cells including lymphocytes, neutrophils and prominent eosinophils with large macronucleolated forms (figures 3 and 4). On immunohistochemistry, large pleomorphic cells positive for CD30, CD15 and CD79A and negative for Thyroid Transcription Factor 1 (TTF-1, CD3 and CD45 were identified (figure 5). These findings were consistent with Hodgkin's lymphoma. Subsequent positron emission tomography (PET) CT identified intense pulmonary uptake without significant nodal involvement, but with distinct skeletal metastasis.

DIFFERENTIAL DIAGNOSES

- ▶ lung carcinoma
- ▶ pulmonary tuberculosis
- ▶ fungal granulomas.

TREATMENT

The patient was started on chemotherapy consisting of adriamycin, bleomycin, vinblastine and

Figure 1 (A,B) CT scan of the thorax showing a cavitary consolidation of the left upper lobe of the lung. (C) Chest radiograph revealing an irregular left hilar lung opacity.

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Figure 2 Bronchoscopy showing an obstructing lesion in the left upper lobe bronchus concerning for primary lung cancer.

dacarbazine. He received six cycles of chemotherapy with resolutions of symptoms.

OUTCOME AND FOLLOW-UP

Follow-up PET CT showed significant improvement in the previous fluorodeoxyglucose (FDG)-avid pulmonary lesions at 3 months and no clinical evidence of recurrence at 8 months.

DISCUSSION

Primary pulmonary Hodgkin's lymphoma (PPHL) is an uncommon disease that originates from mucosa-associated lymphoid tissue arising from lymphoid follicles or peribronchial lymph nodes with no significant extrapulmonary involvement at initial presentation and within 3 months. PPHL commonly presents as a lung mass and rarely as an endobronchial lesion.² Fewer than 100 cases of PPHL have been reported.³ The incidence of endobronchial disease, which is characterised by direct bronchial invasion or by haematogenous spread, accounts for only 11 of these, making it an even rarer presentation.¹ PPHL occurs predominantly in women with a bimodal age distribution, with the first incidence peak occurring in the third decade, and the second being in the sixth/seventh decade.³ There are three main diagnostic criteria for PPHL: (1) the tumour needs to be confined within the lung tissue with or without involvement of the hilar or mediastinal lymph nodes, (2) pathological results should comply with Hodgkin's lymphoma and (3) exclusion of other pathological conditions outside the lungs.² Our patient had skeletal metastasis at the time of diagnosis; hence, the disease cannot be characterised

Figure 4 H&E stain showing a mixed population of inflammatory cells consistent with Hodgkin's Lymphoma.

as PPHL. Bronchoscopic findings of Hodgkin's lymphoma as an endobronchial mass usually include an obstructing polypoid lesion, but sometimes presents as ulcerated mucosal infiltrates with slightly higher incidence of right bronchial tree involvement.⁴ Our patient had Hodgkin's lymphoma presenting as an obstructing lesion of the left upper lobe mimicking primary lung cancer on bronchoscopy. To be acknowledged as an endobronchial presentation of Hodgkin's lymphoma, the following criteria need to be present at the time of diagnosis: (1) histopathological features consistent with Hodgkin's disease and (2) bronchoscopy revealing endobronchial obstructing lesion.¹ The most common features of Hodgkin's lymphoma include fever, weight loss, night sweats, dry or productive cough, dyspnoea, haemoptysis, chest pain or stridor.⁴ Immunohistochemistry is required in most cases for confirmatory diagnosis.⁵ In our case, large pleomorphic cells positive for CD15 and CD30 consistent with Reed-Sternberg cells made the diagnosis of Hodgkin's disease. Low-grade PPHL has a survival rate of 94%, while high-grade PPHL has a median survival rate of 3 years.¹ Survival rate for Hodgkin's lymphoma presenting as endobronchial mass is 84.2% with conventional chemotherapy with or without radiotherapy. Poor prognostic factors include older age, presence of B symptoms, bilateral disease with multilobar involvement, number of extranodal sites, elevated Lactate dehydrogenase (LDH) and Erythrocyte Sedimentation Rate (ESR), penetration of pleura and cavitations.⁴ Our patient responded well with combination chemotherapy as demonstrated by significant reduction in tumour mass by PET CT.

Figure 3 H&E stain showing a mixed population of inflammatory cells including lymphocytes, neutrophils and prominent eosinophils, with large macronucleolated forms.

Figure 5 CD15 and CD30 positive cells consistent with Reed-Sternberg cells of Hodgkin's lymphoma.

Learning points

- ▶ Hodgkin's lymphoma presenting as an endobronchial lesion is a rare presentation of lung mass.
- ▶ Radiologically, it can be confused with lung cancer.
- ▶ Histopathological diagnosis should be obtained in a patient presenting with lung mass.

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