Pleural non-Hodgkin’s lymphoma arising in a patient with a chronic pyothorax

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Abstract
A 69 year old man with a chronic left pyothorax was treated by decortication. Although the treatment rapidly improved respiratory function, histopathological examination revealed a diffuse large B cell non-Hodgkin’s lymphoma. Subsequent bone marrow biopsy samples disclosed bone marrow involvement. It is possible that non-Hodgkin’s lymphoma may develop from a chronic pyothorax. (Thorax 1996;51:103–104)

Keywords: chronic pyothorax, decortication, non-Hodgkin’s lymphoma.

Malignant lymphoma developing from a chronic pyothorax is very rare and has been reported mainly in Japanese series.1–3 We present a case of chronic pyothorax causing chest pain and exertional dyspnoea. A non-Hodgkin’s lymphoma with bone marrow involvement was diagnosed after decortication and a bone marrow biopsy.

Case report
A 69 year old man presented with a six month history of increasing dyspnoea and left chest pain. The patient had had a history of chronic pyothorax with some dyspnoea on exertion for 25 years. The pyothorax had resulted from pleuritis of unknown cause. On admission, physical examination revealed decreased breath sounds in his left chest. No lymphadenopathy was found. The full blood count revealed a haemoglobin of 13.2 g/dl, a white cell count of 9.8 x 10^9/l (neutrophils 7.3, eosinophils 0.16, lymphocytes 1.6), and a platelet count of 251 x 10^9/l. A chest radiograph demonstrated a cavitating lesion with an air-fluid level and pleural thickening in the left pleural space. A computed tomographic (CT) scan of the chest showed an encapsulated pleural effusion containing inhomogeneous regions and pleural calcification in the posterior part of the left hemithorax. No mediastinal lymphadenopathy was seen. Bronchoscopy disclosed external compression of all bronchial orifices of the left bronchial tree. Thoracentesis under ultrasound control showed that the pleural fluid was an exudate, and cytological examination was negative for malignant cells. Culture of the pleural fluid for aerobic, anaerobic, and acid-fast bacteria was also negative.

A standard posterolateral thoracotomy was undertaken in an attempt to remove the thickened pleura and to re-expand the trapped lung. At surgery all fluid, clotted blood, loose fibrin, and exudate was removed, and the thickened coating of the visceral pleura was excised. The postoperative course was uneventful, and the intercostal drain was removed on the sixth postoperative day.

Histopathological examination of the thickened pleura and soft tissue revealed sheets of large atypical lymphoid cells associated with extensive tumour necrosis and haemorrhage. Immunohistochemical investigation showed a non-Hodgkin’s lymphoma of the diffuse large B cell type (figure). Subsequent bone marrow biopsy samples showed similar lymphoma cells representing 15% of the total nucleated cells (stage IV). Two weeks after the operation the serum titre of the Epstein-Barr capsid antigen IgG was 1:640 (normal serum titre 1:10 or less). The patient then received chemotherapy with cyclophosphamide, epirubicin, vincristine, and prednisolone. There was subjective improvement in the dyspnoea and chest pain, and he is currently alive three months after the operation.

Discussion
Although malignancies such as malignant mesothelioma,4 soft tissue sarcoma,5 and squamous cell carcinoma6 have been reported to develop in the pleural cavity of patients with chronic pyothorax, malignant lymphoma as a
complication of chronic pyothorax has only been reported in Japan and never in Western countries, possibly because of the rarity of chronic pyothorax in the West. Pleural lymphoma was reported in three of 134 patients (2.2%) with chronic tuberculous pyothorax at a Japanese hospital between 1971 and 1985. The case reported here is the second from the Taiwan area.

The mean interval between the start of the chronic pyothorax and the onset of pleural lymphoma was 33 years in the study of Iuchi et al., similar to the 25 years in this report. In the patients reported by Iuchi et al. and in our patient chest pain, which is not a feature of chronic pyothorax, was the most common presenting symptom of non-Hodgkin’s lymphoma. Positive cytological results may not be obtained by pleural aspiration alone, and thoracotomy may be necessary as in our case.

A diffuse large B cell lymphoma is the most common type of primary pleural non-Hodgkin’s lymphoma developing in chronic pyothorax. The pathogenesis of pyothorax-associated pleural lymphoma is still unknown. Non-Hodgkin’s lymphoma may develop in patients with autoimmune disease such as chronic lymphocytic thyroiditis by the process of chronic stimulation. Stimulation of a non-autoimmune nature by chronic inflammation could also be an aetiological factor in the development of malignant lymphoma from long standing pyothorax.

In Japan the present treatment for pleural non-Hodgkin’s lymphoma is chemotherapy, with or without combined radiotherapy, and the actuarial two year survival rate is 32–42%. Chemotherapy alone was used in our patient.

A malignant pleural effusion infected with Salmonella enteritidis

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Abstract

A patient is described with a unilateral pleural effusion persistently infected with Salmonella enteritidis. The infection was eventually eradicated with ciprofloxacin. A computed tomographic scan and mediastinal lymph node biopsy demonstrated an underlying small cell bronchogenic carcinoma.

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Keywords: pleural effusion, salmonellosis, malignancy.

Food-borne Salmonella intestinal infection is increasing in prevalence in the United Kingdom. Salmonella infection outside the gastrointestinal tract remains uncommon in western countries and pleural effusions or empyemmas infected with Salmonella species are extremely rare. We report a patient with a small cell lung carcinoma and unilateral pleural effusion which was infected with Salmonella enteritidis.

Case report

A 70 year old man was admitted to hospital with increasing dyspnoea and weight loss of 10 kg in three months. He had a history of ischaemic heart disease with atrial fibrillation and congestive heart failure and was receiving treatment with digoxin, frusenide, and captopril. He had smoked 15 cigarettes per day up to six years previously.

Examination revealed an ill and wasted man who was clinically anaemic and had signs of a large left pleural effusion. The pulse rate was 80/min in atrial fibrillation, blood pressure was 140/85, and there were no signs of heart failure. Chest radiography confirmed the unilateral effusion, and the electrocardiogram showed atrial fibrillation with digitalis effect. Haemoglobin was 9.7 g/100 ml with a normochromic normocytic blood film. Serum levels of ferritin, vitamin B12, and folate were normal, and a subsequent bone marrow aspirate was unremarkable. The erythrocyte sedimentation rate was 65 mm in the first hour. Serum urea, creatinine, and electrolyte levels were normal, as were blood glucose and serum calcium levels. Serum tests of liver and thyroid function were unremarkable, and the serum cholesterol concentration was 5.6 mmol/l.

Pleural aspiration was carried out and 1200 ml of cloudy fluid was obtained. The protein level was 45 g/l and glucose concentration 0.3 mmol/l. No malignant cells were seen but Salmonella enteritidis was grown on culture. The patient had no fever or clinical