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Case Report

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Hemorrhagic Pleural Effusion as a First Presentation of Chronic Lymphocytic Leukemia (A Case Report)

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Pleural effusion is a relatively rare complication of Chronic Lymphocytic Leukemia (CLL). In this study, we report an observation with pleural effusion as first symptom of CLL. A 43-year-old man having been diagnosed with CLL presented with hemorrhagic pleural effusion. The differential diagnosis of hemorrhagic pleural effusion was considered. Pleural effusion as a first sign of CLL is rarely described.

Key words: Pleural effusion, chronic lymphocytic leukemia, malignancy, hematological

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INTRODUCTION

Pleural effusion as a first sign of Chronic Lymphocytic Leukemia (CLL) is rarely described (Zeidman *et al*., 1995; vanden Berge *et al*., 2001; Alexandrakis *et al*., 2004) However, pulmonary complications account for significant morbidity and mortality in patients with CLL and pneumonia is the most common pulmonary complications (Ahmed *et al*., 2003).

Pleural effusion can be the result of primary pleural involvement. Awareness of this occurrence is essential to appropriate therapy of patients with CLL (Ben-chetrit *et al*., 1985; Alexandrakis *et al*., 2004). We report a case of hemorrhagic pleural effusion in a 43 year old man with CLL. The first presentation of this case was pleural effusion.

Case report: He presented with pain in the right chest' dyspnea on exertion, weight loss (20 kg within 2-3 month), anorexia, malaise and fatigue. Physical examination revealed enlarged spleen without lymphadenopathy, there was dullness to percussion, with decreased breath sounds over the lower two thirds of the right posterior chest. A chest X Ray revealed a large right-sided pleural effusion. Right thoracocentesis were done and the pleural effusion was exudates. The specific gravity was 1034, protein was 5.6 g dL, glucose was 84 mg dL^{-1} and LDH was 365 mU mL^{-1}. Serum LDH was 433. The leukocyte count of fluid was 4400 mm^{-3} with 85% lymphocytes and RBC count was 15600 mm^{-3}. Cytological examination was negative for malignancy. Other laboratory data has been shown in Table 1.

Smear and culture of pleural fluid for Mycobacterium Tuberculosis (MTB) was negative. Tuberculin skin test was negative. PCR of pleural fluid and sputum smear for MTB was negative. Chest CT scan showed right-sided pleural effusion with right bronchopulmonary adenopathy with normal parenchyma. Peripheral blood smear showed leukocytosis with predominance of small lymphocytes. A relatively large number of basket cells were also observed. Red blood cells had normal morphology. Platelets were observed in normal numbers and morphology.

Table 1: Non specific laboratory findings in this case

Laboratory tests	Value
White blood cell count	30000 mm^{-3}
Lymph	70%
Hemoglubin	13.9 mg dL^{-1}
Platelet count	180000 mm^{-3}
Erythrocyte sedimentation rate	47 mm h^{-1}
Tuberculine skin test	5 mm

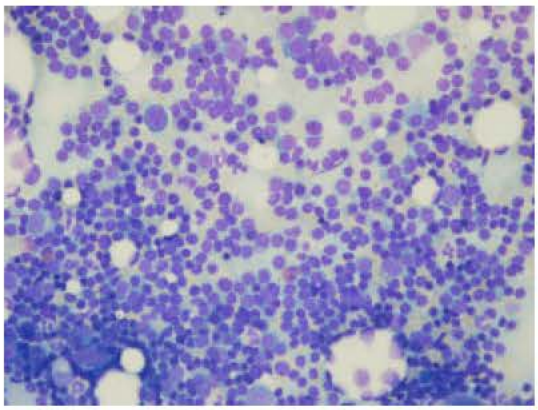

Fig. 1: Bone marrow aspirate. Myeloid and erythroid cells admixed by a relatively large number of small lymphocytes. Wright-Giemsa staining, 10X

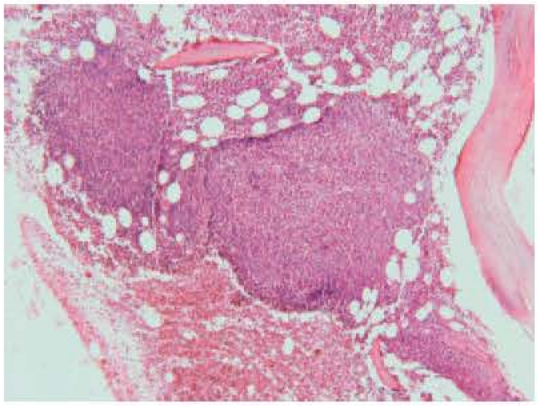

Fig. 2: Bone marrow biopsy shows two relatively well-demarcated aggregates of lymphoid cells surrounded by normal-appearing marrow. Hematoxilin and Eosin staining 4X

Bone marrow aspiration (Fig. 1) showed normal constituents of the marrow (erythroid, myeloid and megakaryocytic lineages) admixed by a large number of small lymphocytes (about 50% of all nucleated cells) and rarely prolymphocytes (about 1 to 2% of all nucleated cells).

Marrow sections (Fig. 2) revealed focal involvement of bone marrow by leukemic cells. The leukemic cells occurred in relatively well-demarcated foci, which were randomly distributed and surrounded by normal appearing marrow.

DISCUSSION

Nearly all hematological malignancies can occasionally present with or develop pleural effusions during the clinical course of disease. Among the most

common disorders are Hodgkin and non-Hodgkin lymphomas, with a frequency of 20 to 30%, especially if mediastinal involvement is present. Acute and chronic leukemias and myelodysplastic syndromes, are rarely accompanied by pleural involvement (Ben-chetrit *et al*., 1985; Zeidman *et al*., 1995; Ahmed *et al*., 2003; Alexandrakis *et al*., 2004).

Pleural involvement is a rare complication of chronic lymphocytic leukemia (Swerdlow *et al*., 1986; Dhodapkar *et al*., 1993; Szalay *et al*., 1994). It can be the result of primary pleural involvement, central lymphatic blockage, infection or changes induced by previous irradiation or chemotherapy (Ben-chetrit *et al*., 1985).

According to our medical literature search, this is the third case of CLL who presented with pleural effusion as the first symptom. The first case was reported by Van den Berg *et al.* (2001), a 73 year old man with CLL and a hemorrhagic pleural effusion. The second case was reported by Zeidman *et al.* (1995).

Because lymphocytic pleural effusions indistinguishable from those in CLL are well known in tuberculous and other non-neoplastic conditions (Swerdlow *et al*., 1986) and leukemoid reaction is also one of the hematologic manifestations of TB, we ruled out tuberculosis by pleural fluid PCR and sputum and pleural fluid smear and culture for MTB. Finally bone marrow biopsy confirmed diagnosis in this case.

It should be emphasized that, early detection of this complication is essential for appropriate therapy. Some authors believe that the pleural effusion probably reflected an advanced and refractory disease in patients with CLL (Ben-chetrit *et al*., 1985; Swerdlow *et al*., 1986; Szalay *et al*., 1994; Zeidman *et al*., 1995).

In conclusion, because small lymphocytic infiltrations of the pleura are difficult to evaluate histopathologically and over diagnosis of tuberculose pleural effusion in patients with undiagnosed (or uncompletetly researched) pleural effusion is also a problem in Iran and other endemic countries for TB, it is necessary to exclude this diagnosis before Anti tuberculose trial treatment.

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