CASE REPORT

Rare initial presentation of ALL as pleural effusion

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Abstract
Leukemias rarely present as pleural effusion as the first manifestation of the disease process. Most commonly this complication is seen in solid tumors such as the lung, lymphomas, carcinomas of the breast and gastrointestinal tract. A case of 40 year old male is hereby highlighted who presented with a massive pleural effusion as the initial presentation of his disease process (ALL) which is a rare phenomenon to be seen.

Introduction
Leukemia is a systemic disease and involves all organs and tissues of the body. Common clinical presentations include fever, pallor and lethargy. Pleural infiltration with malignant cells in the acute leukemias is rarely diagnosed during life, it is a common finding at autopsy [1].

Leukemic infiltration of the lungs may occur as a part of a systemic relapse or rarely as an isolated pulmonary leukemic infiltration. This case highlights the rare initial presentation of ALL (Acute Lymphoblastic Leukemia) as isolated pleural effusion.

Case report
A 40-year-old non-diabetic, non-hypertensive, non-smoker male patient, reported to the OPD with complaints of dyspnoea for one month, chest pain mainly localized to left side for one month, dry cough associated with minimal expectoration for last one month and loss of appetite since last ten days. His general examination was nonsignificant except for bilateral axillary lymphadenopathy. Respiratory examination suggested a right pleural effusion (PE) which was confirmed on chest X-ray (Fig. 1). General routine blood investigations were all within normal limits. TLC was 9500 with a DLC of N-76, L-20, E-03, M-01. Thoracocentesis was done and approximately one liter fluid was aspirated. The fluid was subjected to routine biochemical and cytopathological examinations. This revealed an exudative lymphocytic predominant fluid with adenosine deaminase (ADA) value of 88. Since the patient belonged to an endemic area for tubercular PE and the investigations along with the ADA value also suggested the same tubercular PE was kept in mind as the cause of the effusion. The patient was started on four drug standard anti tubercular regimen (ATT). The patient returned after 10 days with the same complaints and reported no improvement. This time the patient was admitted and again routine investigations were repeated. Now this was done along with a general blood picture (GBP) also. Again the findings of...
routine investigations were not suggestive of any particular disease and the counts were almost similar to previous counts. The count was TLC of 9600. The DLC was N-74, L-22, E-04, M-00. But to our utmost surprise the GBP revealed a picture suggestive of ALL (Fig. 2). To confirm the same a bone marrow aspiration was done and it also showed ALL (Fig. 3). This confirmed the cause of effusion as the ALL. The patient was referred to the department of Clinical hematology for further treatment.

Discussion

Nearly all hematological malignancies can develop pleural effusions during the diseased process but they occasionally and rarely present this as their first presentation [2–5]. Most commonly this occurs as the disease progresses mainly in Hodgkin and non Hodgkin lymphomas [6]. ALL presenting as pleural effusion has not been reported frequently in the literature [1] and hence the interest of reporting this case. Pleural fluid cytology is usually an early step in the diagnosis of the malignant origin of the fluid, followed by closed biopsy or thoracoscopic biopsy when cytology fails to delineate the cause of the effusion. These examinations are positive in 77% of malignant effusions of various etiologies [7]. In lymphomatous effusions, positive cytology is reported in 14–88% of patients. However, malignant cells in pleural specimens may be so sparse that even experienced cytologists are unable to render a definite diagnosis [8]. In all such situations when the cause is a lymphoreticular disorder a GBP along with a bone marrow biopsy can clinch the diagnosis which is highlighted in this report. Hence all effusion patients must be subjected to a GBP while searching the cause of the same.

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Conflicts of interest

None declared.

References