Pleural Effusion in Acute Myeloid Leukemia

Sir,

Hematologic malignancies like acute and chronic leukemias rarely present with or develop pleural effusions during the clinical course of disease. We report a patient with acute myeloid leukemia, who presented with bilateral pleural effusion. There was no symptom related to leukemia at the time of presentation.

Twenty two year nonsmoker male was admitted with history of progressive dyspnoea of one and a half month duration, insidious in onset, gradually progressive and now present at rest. There was no history of fever, chest pain, cough and wheeze. There was history of loss of appetite without any documentary weight loss. Review of other systems was normal. Review of patient’s records revealed that he was on antitubercular treatment for bilateral pleural effusion for last one month which was started by his general practitioner without any relief. On examination patient was tachypnoeic and was having tachycardia. Significant cervical lymphadenopathy was present. There was no sternal tenderness, gum hypertrophy, purpuric spots and physical examination did not reveal any organomegaly. Chest examination revealed findings of bilateral pleural effusion. Rest of the examination was normal. On investigations hemoglobin was 9 gm%, TLC - 1,10,000/cmm and Platelet count - 45,000/cmm. Biochemical investigations were within normal limits. Chest X-ray posteroanterior view was consistent with bilateral pleural effusion. Lung parenchyma and mediastinum was normal. On peripheral smear examination it was observed that immature cells were 98%, out of which 72% were myeloblast and 26% were monocytoid cells. The myeloperoxidase stain for myeloblast was positive and PAS staining was negative. Fine needle aspiration cytology of lymph node revealed intermediate to large sized monomorphic cells with round to slightly indented nuclei, fine chromatin, single conspicuous to multiple nucleoli and moderate amount of lightly basophilic cytoplasm, numerous mitotic figures some of which were abnormal. On thoracocentesis pleural fluid was straw coloured, with pleural fluid protein of 2.6 gm%, and cytology showing predominantly small mature lymphocytes, few histiocytes, mesothelial cells, RBCs and degenerated cells. Myeloblasts were also seen in clusters and isolation in pleural fluid (Fig. 1). Diagnosis of acute myeloid leukemia (M4- FAB classification) was made on the basis of peripheral smear and lymphnode cytology. Cytologic examination of the pleural fluid established the cause of effusion. Induction chemotherapy was started but patient expired on the third day of initiating treatment.

Pleural effusions may be the first presentation of a hematologic malignancy or may develop during the course of the 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 are rarely accompanied by pleural involvement. Besides direct infiltration of leukemic cells in the pleura, pleural effusion can be secondarily caused by drug toxicity, underlying infections, secondary malignant or rarely autoimmune causes in hematologic malignancies. In most cases, the pleural fluid responds to treatment of the primary disease, whereas resistant or relapsing cases may necessitate pleurodesis.1

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