Primary Granulocytic Sarcoma Presenting with Pleural and Pulmonary Involvement*

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A 36-year-old woman presented with cough, pleural effusion and atelectasis. Evaluation included pleural biopsy, bronchoscopy, bone marrow biopsy, endomyocardial biopsy and ultimately thoracotomy. The diagnosis of granulocytic sarcoma involving lungs and pleura but not bone marrow was made histologically. (Chest 1988; 94:655-56)

Granulocytic sarcoma (chloroma) is an unusual extramedullary manifestation of acute myelogenous leukemia, chronic myelogenous leukemia, and the myeloproliferative syndrome. The tumor rarely occurs in the absence of concurrent or remote peripheral blood or bone marrow involvement by leukemia. This patient developed pleural and pulmonary involvement by primary granulocytic sarcoma. Our review of the literature suggests that this is the first example of granulocytic sarcoma involving the pleura and lung but not the bone marrow.

CASE REPORT

The patient, a previously healthy 36-year-old white woman, developed a flu-like illness and mild pericarditis in May 1987. At that time she had a large pericardial effusion with small pleural effusions and poor left ventricular function. The pleural effusions resolved, and an echocardiogram showed resolution of the pericardial effusion and improved left ventricular function.

She did well until the latter part of July 1987, when she noted increased dyspnea on exertion. Chest roentgenograms revealed partial atelectasis of the left lower lobe with a left-sided plural effusion (Fig 1A and B). She was given antibiotics, without effect. Her dyspnea on exertion and pleural effusion worsened. She had a nonproductive cough.

The patient was admitted on July 30, 1987 with a large left pleural effusion and left lower lobe atelectasis. The electrocardiogram showed a sinus rhythm, and nonspecific ST and T wave changes. The echocardiogram showed thickened pericardium with no evidence of constriction and a mildly thickened left ventricular wall with mildly impaired left ventricular function. A left thoracocentesis was performed. Straw-colored fluid was obtained with a total protein of 3.4 g/dl, a glucose of 90 mg/dl, a specific gravity of 1.023, and a lactate dehydrogenase (LDH) of 182 IU/L. There were 5,800 white blood cells/cu mm with 2 percent neutrophils, 91 percent lymphocytes, and 7 percent monocytes. A simultaneous serum LDH was 203 IU/L, and the total protein was 6.1 g/dl. The pleural effusion cytology study showed atypical leukocytes, but it was not diagnostic for leukemic involvement. Bronchoscopy showed a 50 percent narrowing of the left mainstem bronchus and severe narrowing of the lobar bronchi. The mucosa was red-purple, friable, and hemorrhagic. The segmental bronchi could not be seen due to the bleeding and narrowing. The bronchial biopsy showed a dense mononuclear cell infiltrate with rare atypical cells. The bronchial cytology specimen was negative. A pleural biopsy showed fibrosis and a bland mononuclear cell infiltrate. Bilateral iliac crest bone marrow aspirates and biopsies showed increased storage iron and

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![Figure 1A and B. Posteroanterior and lateral chest radiographs showing loss of volume in the left side of the chest and a left pleural effusion.](http://journal.publications.chestnet.org/pdfaccess.ashx?url=/data/journals/chest/21583/)
decreased sideroblast iron without evidence of a neoplastic infiltrate. An endomyocardial biopsy showed no abnormalities.

The patient underwent a limited thoracotomy with biopsies of the left paratracheal lymph nodes and left lower lobe. Histologic sections of the lung and lymph nodes showed a monotonous infiltrate of immature cells with scattered eosinophilic metamyelocytes and myelocytes. The chloroacetate esterase (Leder) stain, a histochemical marker for neutrophilic precursors, mature neutrophils, and mast cells, showed scattered positive cells. Touch preparations stained with hematoxylin and eosin and Giemsa (Romanovsky) stain showed granulocytic and eosinophilic precursors with Auer rod-containing blasts (Fig 2). Based on these findings, a diagnosis of granulocytic sarcoma was made.

DISCUSSION

Granulocytic sarcoma is a rare extramedullary manifestation of acute nonlymphocytic leukemia, chronic myelogenous leukemia, and the myeloproliferative syndrome. The incidence of granulocytic sarcoma in leukemic patients is 2.9 percent. In autopsy series the incidence has varied from 3.1 to 7.0 percent. It usually occurs in conjunction with bone marrow involvement or as a late complication in known leukemias. In patients with chronic myelogenous leukemia and the myeloproliferative syndrome, granulocytic sarcoma heralds a more aggressive stage of the disease.

Granulocytic sarcoma rarely represents the initial presentation of acute nonlymphocytic leukemia. Our review of the literature suggests that this is the first reported case of granulocytic sarcoma presenting with prominent pleural and pulmonary involvement.

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Talcosis Presenting as Pulmonary Infiltrates in an HIV-Positive Heroin Addict*

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A case of an HIV-positive young drug addict presenting with fever, respiratory distress, and pulmonary infiltrates is reported. Pulmonary talcosis was diagnosed by transbronchial biopsy. The differential diagnosis of pulmonary infiltrates in HIV-positive patients is reviewed and the predisposition of drug addicts to develop both HIV infection, as well as pulmonary talcosis, is discussed. Pulmonary talcosis must be considered in the differential diagnosis of pulmonary infiltrates of HIV-positive drug addicts. (Chest 1988; 94:656-59)

The lung is commonly involved in both infectious and noninfectious processes in patients with the acquired immunodeficiency syndrome (AIDS). The majority of these immunosuppressed patients usually suffer from Pneumocystis carinii pneumonia, cytomegalovirus (CMV) pneumonia, Mycobacterium avium intracellulare or Kaposi's sarcoma of the lung. Most of those opportunistic infections or neoplasms share a relatively close clinical presentation: dyspnea, cough, fever with bilateral involvement of the lungs, and a patchy reticular appearance on the chest roentgenograms.

Acquired immunodefi ciency syndrome-related complex occurs with increased incidence in homosexuals, intravenous drug abusers, hemophilic patients, and in multiple blood transfusion recipients. Talc, which is often present as a diluent in heroin or as a filler in tablets prepared for oral use, was associated with the development of talcosis in intravenous drug abusers.

This article reports a case of a HIV-positive young drug addict who was admitted with respiratory distress, fever, and a disseminated bilateral pulmonary process.

CASE REPORT

The patient, a 32-year-old man, was admitted with a one-day history of low grade fever, dyspnea, and dizziness. During the past 12 years, he used heroin intravenously, and for the last four years, he used methadone and flunitrazepam orally. Sometimes the patient used a mixture of methadone with strawberry syrup and talc for intravenous self injection. The patient explained that he experienced a sensation of fever and dyspnea after almost every intravenous injection of that mixture.

Physical examination upon admission revealed a sick man in moderate respiratory distress. Temperature was 38.3°C, with blood pressure 90/50 mm Hg and pulse rate 110 beats per minute. Subtle inspiratory crepitations were found in the right lower lung field. The rest of the physical examination was unremarkable.

Laboratory tests revealed a hemoglobin value of 15.1 g/dl, and white blood cell count of 10,800 cell/mm with normal differential count. Albumin value was 3.7 g/l, and globulin, 2.0 g/l. The SGOT value was 278 IU/ml (N: 0-27); CPK level, 28 IU/ml (N: 19-130). Arterial blood gas values inspiring room air showed a pH of 7.47; Pa02 of 38 mmHg; PaCO2 of 27 mmHg; and HCO3 of 19 mEq/l.

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