COMMUNICATIONS
TO THE EDITOR

Communications for this section will be published as space and priorities permit. The comments should not exceed 350 words in length, with a maximum of five references; one figure or table can be printed. Exceptions may occur under particular circumstances. Contributions may include comments on articles published in this periodical, or they may be reports of unique educational character. Specific permission to publish should be cited in a covering letter or appended as a postscript.

Respiratory Failure and Acute Leukemia

To the Editor:

We read with interest the article by Prakash and colleagues on respiratory failure as an early manifestation of acute leukemia and their concomitant recommendations for early diagnostic intervention. Because of the severity of the illness of such patients who present with diffuse parenchymal infiltrates, the diagnostic procedure of choice and the rapidity with which it should be performed is often a difficult decision. The following case report illustrates the diagnostic potential of an expectorated specimen of sputum using a Wright stain.

CASE REPORT

This 31-year-old caucasian woman was admitted to the Crozer-Chester Medical Center in October, 1978 with a two-month history of fatigue, cervical adenopathy, and intermittent fever, chills and rigors treated by her local physician with a variety of oral antibiotics without defervescence. In September, a chest x-ray film showed normal findings and her white blood cell count was 14,000 with a normal differential. With the onset of cough, hemoptysis, and pleurisy, she was admitted to a community hospital where chest x-ray examination demonstrated diffuse interstitial lung infiltrates. A white blood cell count was 14,000/cu mm with immature forms; a bone marrow aspirate was felt to be consistent with acute monocytic leukemia. With progressive respiratory distress over the next two days, the patient was transferred to Crozer-Chester Medical Center.

On physical examination, the blood pressure was 102/50 mm Hg, pulse rate 120 beats per minute, respirations 30 per minute, and temperature 101.5°F (38.6°C). Several small non-tender cervical lymph nodes were palpable. Bibasilar rales were auscultated without rubs or rhonchi. Nailbed and perioral cyanosis was noted.

The chest x-ray film showed extensive bilateral alveolar infiltrates. The hemoglobin was 10.4 gm/dl and hematocrit 30.4 percent with a leukocyte count of 9,100/cu mm with 6 bands, 24 segmented neutrophils, 32 lymphocytes, 5 monocytes, and 33 blast cells. Arterial blood gas determination on room air revealed an arterial oxygen tension of 36, carbon dioxide tension 36, pH 7.46, and bicarbonate 24 mEq/liter. A sputum Gram-stain showed several WBCs, many RBCs, and mixed flora. The sputum specimen (Wright stain) demonstrated numerous early monocytic forms.

The patient was empirically placed on cephalothin (Ke-pin) 2.0 gm intravenously very six hours and carbenicillin, 5 gm intravenously every four hours, because of suspected bacterial infection. Antileukemic chemotherapy was initiated with vincristine, prednisone, Adriamycin, and Ara-C. The patient’s gas exchange rapidly improved, and within six days, her roentgenogram showed complete absence of infiltrates. After prolonged hospitalization, the patient entered remission and was discharged.

DISCUSSION

It is highly unlikely that bacterial or viral pneumonitis would have cleared so rapidly, particularly prior to remission of leukemia. In our patient, drug-related lung disease was not possible in the absence of prior therapy. Moreover, she was not treated for pneumocytosis or toxoplasmosis. Therefore, as in the cases outlined by Prakash and coworkers and Nathan and Sanders, the rapid resolution of the diffuse pulmonary infiltrates on chemotherapy in this patient is highly suggestive of primary involvement with leukemia despite the absence of a tissue diagnosis.

The use of sputum cytology is well documented in the diagnosis of pulmonary involvement by solid tumors and lymphomas, but its utility in leukemia is rarely cited. Open lung biopsy was averted in his patient by the suggestion of leukemic infiltration on Wright-stain of the sputum specimen, and the patient’s rapid clinical defervescence, roentgenographic clearing and gas exchange improvement on chemotherapy. Despite the relative infrequency of this clinical entity, this noninvasive examination may aid in the diagnostic pursuit of this select group of patients. The specificity of this procedure will require the examination of larger numbers of leukemic patients with infiltrates of other etiologies.

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REFERENCES


Anergy in Active Pulmonary Tuberculosis

To the Editor:

Nash and Douglas’s “Anergy in Active Pulmonary Tuberculosis” (Chest 77:39-37, 1980) calls attention to some of the factors found in tuberculosis patients who are anergic to tuberculin testing. There are, however, some problems with their paper which I believe should be mentioned.

Comparing skin test results over the years has been difficult because of different antigens. The authors state that a “Tween-stabilized PPD preparation (Comnaught Laboratories) was used.” Unfortunately, this does not give us enough information. It should be noted that in skin testing done prior to 1972, several different strength PPD 5 TU antigens were available and used. The differences between these antigens could obviously interfere with comparisons. Since the report of the Bureau of Biologics, 5 tuberculin unit PPD antigen must be bioequivalent to PPD S without Tween. The bioequivalency of the antigen used is not given and thus, these results cannot be compared with previous or subsequent work.

Another serious problem may be in their consideration of