Fever, Anemia and Mediastinal Mass

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This 14-year-old boy was admitted to the hospital because of fever and weakness for two months. His temperature was 102° F. There was a grade 2/6 systolic murmur at the apex and aortic area, and the spleen was palpable five fingerbreadths below the left costal margin. Several enlarged lymph nodes were palpable in the axillary and inguinal regions. There was severe anemia.

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Diagnosis: Lymphoblastic Leukemia

The posteroanterior chest roentgenogram (Fig 1) discloses a mediastinal mass obliterating the lateral border of the right atrium and ascending aorta. The left anterior oblique position (Fig 2) verifies the anterior location of the mass (arrows). The white cell count was 224,000 with 97 percent lymphoblasts and 2 percent lymphocytes.

Prednisolone, 60 mg daily, was started. Four units of blood were administered. Twenty days later the right margin of the heart appeared normal (Fig 3), the spleen had become barely palpable, and the systolic murmur had disappeared.

Localizing the lesion to one of the compartments of the mediastinum is of importance in arriving at a roentgen diagnosis. In this patient, the loss of the normal right atrial and ascending aorta borders, and the sharp lateral border of the lesion, indicate an anterior mediastinal location.

Pathologic conditions found in the anterior mediastinum which would be as large and elongated as this lesion include thymic tumor, mediastinal abscess, mesenchymal tumor, aortic aneurysm, teratoma, and lymphoma. Other anterior mediastinal lesions such as dilated superior vena cava, parathyroid tumor, chemodectoma, aneurysm of the sinus of Valsalva, buckled innominate artery, pericardial cyst, tumor or diverticulum, cardiac tumor, and hernia would be more localized or differently located.\(^1\)

In our patient, the gross mediastinal tumor due to lymphoblastic leukemia disappeared 20 days after prednisolone therapy.

Reference

\(^1\) Felson B: The mediastinum. Seminars in Roentgenology, 4:41, 1969

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