Echocardiographic Recognition of Cardiac Leukemic Tumors in a Child Successfully Treated with Chemotherapy

Osman Başpınar, MD, Canan Uçar*, MD, Tamer Baysal, MD, Bülent Oran, MD, Sevim Karaaslan, MD

Selçuk University Meram Medicine Faculty, Pediatric Cardiology and *Pediatric Hematology Departments, *Konya*

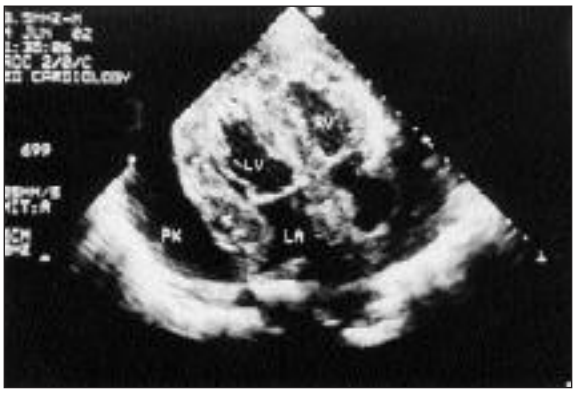

Figure 1. Apical four-chamber view that demonstrating a large pericardial effusion and multiple cardiac tumors (which are denoted with the letter T).

Figure 2. After the chemotherapy the tumor masses disappeared in the patient but minimal pericardial effusion was detected.

The present case describes a boy with secondary cardiac leukemia involving multiple sites, which was treated by chemotherapy. Though rare, leukemic cardiac metastasis should be considered in the differential diagnosis of cardiac tumors in children.

A 12-year-old boy, who presented with cardiovascular symptoms such as dyspnea, tachypnea and chest discomfort, had acute T-cell lymphoblastic leukemia for three years but had not regularly received his active treatment. Clinical examination found hepatomegaly and splenomegaly, increased jugular venous pressure. Chest radiograph revealed cardiomegaly with a cardiothoracic ratio of 0.77. Echocardiography demonstrated large pericardial effusions and multiple intracardiac tumors. The tumors in the free wall of LV and septum, interatrial septum, free wall of RV were encapsulated and their shapes were ellipsoid (Figure 1). Cardiac tumors were of different sizes. Apical motion in the patient was impaired. Chemotherapy with less cytotoxic agents (prednisolone, vincristine, L-asparaginase) was started in combination. Echocardiography performed one months later showed complete disappearance of cardiac tumors and minimal pericardial effusion (Figure 2).

Secondary malignant cardiac tumors are rare in children. Lymphoma, and Wilms' tumor are the most common lesions. Primary tumor in our patient was acute T-cell lymphoblactic leukemia. Symptomatic heart diseases with metastatic extension of leukemia occur in less than 5% of cases. Pathologic findings include leukemic infiltrates and hemorrhage of the myocardium or the pericardium and generally associated with a poor prognosis.

The most useful diagnostic procedure for cardiac tumors in children is echocardiography. The information obtained not only provides guidance for therapeutic maneuvers, but also is beneficial for follow-up observation of the patients and assessment of the therapy. Echocardiography also gives information about the macroscopic appearance and the density of the tumor.

We conclude from this experience that early suspicion with further meticulous echocardiographic examination may be very important and should be done in every suspicious case.