

Cardiac Involvement in a Patient with Eosinophilia and Inversion of Chromosome 16(p13q22): A Case of Chronic Eosinophilic Leukemia or AML-M4EO?

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Abstract

Any chronic hypereosinophilic state, including eosinophilic leukemia, reactive eosinophilia and idiopathic hypereosinophilic syndrome may be complicated by the end-organ damaging effects of eosinophilic degranulation, especially cardiac involvement. Several cytogenetic abnormalities that have prognostic and even therapeutic implications, have been described in patients with different variants of eosinophilic syndrome as well as different features of cardiac involvement. Here we describe an 11-year-old boy whose clinical and laboratory data met the criteria for chronic eosinophilic leukemia except for the cytogenetic abnormality of inversion of chromosome 16 that represents the strongest argument for AML-M4EO, despite no significant increase in bone marrow blasts. Intramural thrombi in both ventricles, mitral and tricuspid valve regurgitation and congestive heart failure were pathologic cardiac findings in our patient. Cytogenetic and molecular genetic analysis is deemed necessary for determining the definite diagnosis, prognosis and therapeutic strategies (*Iranian Heart Journal 2007; 8 (1): 46-51*).

Keywords: cardiac complications ■ endomyocarditis ■ intracardiac thrombi ■ eosinophilia ■ chromosome 16

Research in cellular and molecular biology has changed the classification criteria in patients with hypereosinophilic syndrome (HES). However diagnostic criteria established by Chusid et al. in 1975 are still in use today. Cardiac and other tissue damage as a consequence of release of eosinophil granule contents can occur in patients with eosinophilic leukemia, reactive eosinophilia and idiopathic hypereosinophilic syndrome. As a matter of fact cytogenetic and molecular genetic analysis for definite diagnosis seems to be helpful. Cardiac damage is a major determinant of overall prognosis.

Different features of cardiac complications in patients with chronic hypereosinophilic state, especially myeloproliferative variants, have been reported.

Case report

An 11-year-old boy previously in good health until 7 months before was admitted to a regional hospital (April 2005) with fever, malaise, left shoulder pain, non-productive cough and dyspnea. Chest-x-ray showed bilateral alveolo-interstitial opacities more pronounced centrally with mild cardiomegaly.

Received Nov. 13, 2005; Accepted for publication Aug. 22, 2006.

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