Cardiac Tamponade—A Rare Presentation of AML

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Background: Acute Myeloid Leukemia is a complex hematological disorder with varied presentation. It generally presents as weakness, fatigue, fever, easy bleeding and bruising and recurrent infections. Rarely it does present as serous cavity effusions rarer being pericardial effusions, 0.5% of total presentation. Cardiac tamponade before treatment is only reported in literature.

Materials and Method: A 42 year old presented to emergency with complaints of chest pain and dyspnea. He had history of recent weight loss and fever in last 1 month. On examination he had hypoxia, tachycardia, tachypnea and hypotension with raised jugular venous pressure. ECG revealed sinus tachycardia, low QRS complex in all leads and PR depression. Chest X-ray showed cardiomegaly. Echocardiogram revealed large pericardial effusion with collapse of both right atrium and ventricle. Pericardiocentesis was done. Fluid showed 13% blasts few of which showed Auer rods. CBC showed leukopenia (TLC 1100/cumm with 8% blasts) and thrombocytopenia (plt- 60,000/cumm). Bone marrow aspiration and biopsy confirmed AML. Immunophenotyping revealed 64% blasts positive for CD 13, CD33, HLA DR, CD 117, anti-MPO and negative for CD2, CD19, CD4, cyCD22, cyCD79a, CD10, CD41, CD 56, CD 11b. CSF examination was positive for blasts. Cytogenetics couldn’t reveal any significant abnormality. He was managed with standard therapy; 7+3 cytarabine and Daunorubicin with intrathecal methotrexate.

Results: Pericardial effusion in AML as an initial presentation is a rare entity. The pathophysiology of effusions in malignancy is thought to be related to multiple factors including hemorrhage caused by concurrent thrombocytopenia, infections due to underlying immune deficiency, and direct malignant cell infiltration. The presence of tamponade is related to increased mortality.

Conclusion: Pericardial effusion causing cardiac tamponade can be one of the initial presentations of AML and requires early recognition and prompt intervention to improve outcome.

Keywords: Cardiac tamponade, Acute myeloid leukemia, Pericardial effusion