Successful Pericardiocentesis for Cardiac Tamponade in a Patient with Thrombocytopenic Acute Lymphocytic Leukemia

Osman Sönmez¹, Enes Elvin Gül¹, Ahmet Soylu¹, Kadir Acar², Emine Almaz³
¹Department of Cardiology, Meram Faculty of Medicine, Selçuk University, Konya, Turkey
²Department of Hematology, Meram Faculty of Medicine, Selçuk University, Konya, Turkey
³Department of Internal Medicine, Meram Faculty of Medicine, Selçuk University, Konya, Turkey

Case Report

We evaluated a 22-year-old patient complaining of acute breathlessness and pretibial edema in relapsed and refractory acute lymphoblastic leukemia (ALL). The patient had cardiac tamponade and severe thrombocytopenia during chemotherapy due to relapsed and refractory acute lymphoblastic leukemia (ALL). We experienced complete resolution of the pericardial effusion without any bleeding complications after urgent pericardiocentesis within 15 days after successful ibuprofen-colchicine therapy. The exciting feature of this paper is that rescue pericardiocentesis may be lifesaving despite crucial states, such as severe thrombocytopenia. (JAEM 2012; 11: 188-9)

Key words: Acute Lymphoblastic Leukemia (ALL), Chronic Myeloid Leukemia (CML), Cardiac Tamponade (CT)

Abstract

Cardiac tamponade (CT) as a clinical manifestation of lymphomas is extremely rare. Although leukaemic infiltration of the pericardium is frequently observed at post-mortem, clinically evident cardiac tamponade is also rare. We present a case of cardiac tamponade complicating leukaemia. The patient had cardiac tamponade and severe thrombocytopenia during chemotherapy due to relapsed and refractory acute lymphoblastic leukemia (ALL). We experienced complete resolution of the pericardial effusion...
decided on a rescue pericardiocentesis procedure considering the risk of bleeding complications. Pericardiocentesis was performed under thrombocyte and plasma transfusions. Three hundred milliliters (300 mL) of non-hemorrhagic fluid was obtained and the patient’s clinical status improved dramatically. We did not encounter any bleeding complications due to the procedure. Lymphoblastic infiltration was detected in the cytopathological examination of bone marrow and pericardial material (Figure 2). Ibubrufen and colchicine were started immediately. The patient was discharged with stable hematological parameters under treatment. Control echocardiography showed minimal pericardial effusion within 15 days after discharge. The patient is still alive.

Discussion

Leukaemic infiltration of the pericardium is rarely diagnosed clinically and only a few cases of cardiac tamponade resulting from leukaemic infiltration have been reported. These case presentations were reported in patients with chronic myeloid leukaemia (CML) (1, 2) and acute lymphatic leukemia (ALL) (3-7). We present a case of cardiac tamponade in a patient with ALL. The importance of this case report is the presentation in ALL and the hazardous pericardiocentesis due to severe thrombocytopenia. Pericardial effusion in leukaemic patients may be caused by any of several conditions: cell infiltration with (or without) extramedullary haematopoesis; haemorrhagic diathesis due to thrombocytopenia or therapeutic side effects; infection and other effects of anti-leukaemic drugs (8, 9). In this patient, the pericardial effusion occurred rapidly under chemotherapy and he had severe thrombocytopenia, and the coexistent pleural effusion was proven to be leukaemic in origin. Pericardiocentesis can be a challenging procedure in these unusual circumstances. Taking into account the profit and loss status we had to make an appropriate decision. We decided to perform the pericardiocentesis procedure considering the risk of bleeding complications. Despite the severe thrombocytopenia, we did not encounter bleeding complications, such as hemopericardium, pleural hemo mediastinum or skin hemorrhagia.

Conclusion

Pericardial effusion should be considered in patients with leukaemia who experience sudden onset of cardiac symptoms. Its management should however be individualized. Pericardiocentesis is required in conditions such as resistant pericardial effusion to chemotherapy, severe symptoms, clinical deterioration or collapse due to pericardial effusion. Infiltration of the pericardium with effusion should therefore be considered in every patient with leukaemia, for both therapeutic and prognostic reasons. Cardiologists, internists, and emergency medical personnel should be aware of these conditions and make a decision in favor of the patient’s hemodynamic urgency.

Conflict of Interest
No conflict of interest was declared by the authors.

References