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Metastatic Adenocarcinoma of the Stomach Following Hairy Cell Leukemia

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Abstract: Hairy cell leukemia (HCL) is a rare, indolent B-cell disorder. Opportunistic infections and second malignancy are common in patients with HCL. We report a 36-year-old man with HCL. The patient was treated with cladribine and achived to complete remission. He was admitted to the chest disease department with dispnea and fever after six month later of treatment of cladribine. Pleural effusion was detected at the right hemithroax in chest x-ray radiography. Cancer antigene 125 that evaluated due to exudative pleural effusion was detected high (845 U/ml).Tuberculosis pleurisy was determined in specimen of pleural biopsy. The patient received anti-tuberculosis treatment for six months and pleural effusion regresed. After three years, he complained from stomachache that medical treatment-resistant. Serum cancer antigene-125 level of the patient increased more (1245 U/ml). The diagnosis of adenocarcinoma revealed by specimens of endoscopic biopsy. Dosetaxel, cisplatine, dexametazone and 5-flouro-uracil was given to this patient for six cycles. The patient died because of pneumonia 6 months after this treatment.
Keywords: Hairy cell leukemia, adenocarcinoma of stomach, tuberculosis

INTRODUCTION

HCL is a uncommon lymphoproliferative disorder characterized by cytopenias and splenomegaly. It was first identified by Bouroncle et al. in 1958 [1]. HCL represents 2–3% of all leukaemia and 1% of all lymphomas. The pathogenesis is unknown. Clinically, the patient often presents with fatigue and weakness, bleeding or infection. However, patients can be asymptomatic and be diagnosed incidentally in the setting of cytopenias. A blood smear will show atypical lymphocytes with circumferential prominent hairy cytoplasmic projection. A bone marrow aspirate is often not obtainable due to diffuse fibrosis. Core biopsy will show infiltration of characteristic hairy cells. Immunophenotyping via flow cytometry will show surface antigens CD20, CD25, CD103, and CD11c [2]. First line treatment is with a purine analogs.

The patients with HCL are prone to acquire life-threatening infections and can develop mycobacterial diseases because of immuno suppressions. Additionally, patients with HCL have an increased risk of second malignancy either in a form of synchronous disease or in a form of an increased incidence of a second neoplasm after the treatment of HCL. We report the patient with pulmonary tuberculosis and metastatic adenocarcinoma of the stomach following the treatment of hairy cell leukemia because of rarity.

CASE REPORT

Informed consent was obtained from the male patient aged 36 years with the complaints of fatigue, fever, weight loss. On abdominal examination; there was massive splenomegaly. There was no peripheral lymphadenopathy. Laboratory findings were as follows; level of hemoglobin was 8.7 gr/dl, hematocrit 27%, white cell count 1100/mm³, platelets 160000 µ/l. Level of serum urea was 17 mg/dl, creatinine 0.9 mg/dl, sodium 133 mEq/L, potassium 4.1 mEq/L, uric acid 3.6 mg/dl, total protein 7.2 mg/dl, albumin 3.2 mg/dl, aspartate aminotransferase 34 UI/L, alanine aminotransferase 48 UI/L, lactate dehidrogenase 200 U/L. Examination of peripheral blood smear, only few hairy cells were found. Bone marrow aspiration was dry-tap because of fibrosis. Bone marrow biopsy revealed a moderately cellular marrow having abnormal aggregates of predominant atypical lymphoid cells with typical fried-egg appearance with abnormal areas of fibrosis. Histochemistry demonstrated increased network of reticulin fibres. Immunohistochemical stains revealed positivity for CD 20, CD25 , CD103 , tartrate resistant acid phosphatase . Peripheral blood smear, bone marrow biopsy and immunohistochemical stain confirmed the diagnosis of HCL. The patient was treated with cladribine (0.1 mg/kg/day day 1-day 7) and achived to complete remission.

The patient admitted to the chest disease department with dispnea, fever after six month later of cladribine treatment. An x-ray graphy of the chest showed massive pleural efusion at the right hemithroax.

Computed tomography (CT) scan of chest revealed massive pleural effusions at the right hemithroax. Thorasentesis was performed and exudative pleural effusion was determined. Samples from blood, urine and pleural fluid were obtained for microbiologic examination. Sample from pleural fluid were obtained for pathologic examination. The tuberculin skin test was negative. All tests for mycobacterial, bacterial, fungal and viral pathogens were negative in blood, urine and pleural samples. Cancer antigene 125 that evaluated due to exudative pleural effusion was detected high (845 U/ml). There was no complaint of the patient's associated with gastrointestinal tract. Empirical antibiotic therapy was started to the patient. The patient underwent bronchoscopy with broncho alveolar lavage because of step-wise usage of empirical antimicrobial treatment the fever persisted and the patient's condition worsened. Adenosinedaminase (ADA) level was normal and polymerase chain reaction (PCR) for tuberculosis was negative in brochoalveolar lavage. Pleural effusion was not improve despite antibiotic theraphy. Therefore video-assisted thoracoscopic surgery was performed and taked of pleural biopsy. Tuberculosis pleurisy was determined. The patient received anti-tuberculosis treatment for six months and pleural efussion improved.

He complained from stomach pain that medical treatment-resistant after three years. Serum cancer antigene-125 level of the patient increased more (1245 U/ml). Endoscopic examination objectified a tumor with ulceration in the stomach. Histological examination of biopsy specimens resulted in a diagnosis of adenocarcinoma. Liver metastases was determined in abdomen CT scan. Dosetaxel, cisplatine, dexametazone and 5-flouro-uracil was given to this patient for six cycles. The patient survived for 6 months, dying form.

DISCUSSION

The occurence of a secondary malignancy belong the course of HCL is not unusual. The most frequent secondary malignancies of HCL are the solid tumors such as melanoma, prostate cancer, gastrointestinal cancers, non-melanomatous skin cancer and the other lymphoprolipherative diseases [3,4]. The increased cancer risk in HCL patients may be related to immunosuppression due to HCL or its treatment. The development of second malignancies is highest in the period up to 2 years after diagnosis. Jacobs et all examined 172 patients with hairy cell leukemia. They found a 8.7% incidence of secondary malignancies. In this study; there were only two cases of hematological malignancies (1 case with Hodgkin lymphoma, 1 case with myelo displastic syndrome) [5]. In another study, the incidence of secondary neoplasms was found as 19% in 69 patients with hairy cell leukemia. In our case; metastatic adenocarcinoma of the stomach formed after 3 years than HCL diagnosis.

Mycobacterial infections are one of the complications of chronic lymphoproliferative disorders. Mycobacterial infection incidence is 4-9% in patients with HCL [6,7]. It occurs by either reactivation of acid fast bacilli by due to disease chemotherapy (fludarabine and cladribine) induced immune supression. 2-Chlorodeoxyadenosine (2-CdA) is associated with prolonged suppression of CD4 lymphocytes T cell function is insufficent in the patient with hairy cell leukemia. Therefore intracellular bacteria (Salmonella, Listeria, Mycobacterium) and opportunistic infections caused by fungal infections are common [8,9]. Bennett et al has identified nine cases of disseminated atypical mycobacterial infections in 186 patients with HCL. In our case; tuberculosis pleurisy was determined after six month later of cladribine treatment.

Ca-125 is a cell surface glycoprotein that plays a role in promoting cancer cell growth in ovarian cancer. It was initially believed to be a specific biomarker for ovarian cancer, but over the past 20 years, it has become clear that this marker can also be detected in era of patients with other types of cancers including gastric, colorectal, and pancreatic adenocarcinomas. Elevated serum Ca-125 levels are associated with poor survival. In some nonmalignant diseases (chronic renal failure, some autoimmune diseases, granulomatous liver diseases, pancreatitis, and pulmonary TB) elevated values can be detected. There are several reports that serum CA-125 is elevated in tuberculosis. Serum CA-125 was related to the activity and severity of pulmonary tuberculosis, and it may be useful in the monitoring of therapeutic responses in certain cases of active pulmonary tuberculosis.The level of Ca-125 elevated in our case.

CONCLUSION

Elevated second cancer risks in patients with hairy cell leukemia have been primarily attributed to decreased T-cell function caused by chemotherapy and to immune perturbations associated with the underlying disease. A propable second primary malignancy should be kept in mind in cases with a defined malignancy in the presence of unusual symptoms.

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