Abstract

Health Science Journal
ISSN 1791-809X

2022
Vol.16 No.P35

Acute myeloid leukaemia and peritoneal carcinomatosis: a case of unusual myeloid sarcoma?

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Background: Myeloid sarcoma is a rare disease with poor prognosis. It is characterized by the occurrence of tumor masses at an extra-medullary tissue. It is composed of meroblastic cells and may present before, during, or after a diagnosis of acute myeloid leukaemia (AML) or represent a transformation of a prior myeloproliferative or myelodysplastic condition. We describe a case of AML and concomitant suspected myeloid sarcoma in the peritoneum.

Case Report: A 64-year-old man with a medical history of chronic obstructive bronchopathy, hypertension and coronary artery disease, who underwent a coronary artery stent placement 12 months before in current dual antiplatelet therapy (DAPT), in November 2021 was admitted to the emergency department for ascites and abdominal pain present for two weeks. Laboratory tests, including complete blood count, liver enzymes, kidney function and electrolytes and abdominal ultrasound carried out in October 2021, were all within the normal limits. His emergency lab tests, instead, showed severe anemia, thrombocytopenia without evident bleeding manifestation, lymphocytosis (WBC 80.000/ul, Neutrophil 9.000/ul, Lymphocytes 41.000/ul, Monocytes 30.000/ul)) elevated inflammatory indices, high LDH, tumor markers negative and viral panel negative. A total body CT with contrast was performed showing ascites and an abdominal tumor masse about 8x10 cm with mesenterial lymphadenomegalias suggesting peritoneal carcinomatosis, pleural effusion, and bone lesions. Cytological study of ascitic fluid was inadequate. Flow cytometry indicated immunophenotypic evidence of myeloid malignancy. Immunohistochemistry was positive for CD34 (+), CD45 (-/+), CD117 (+), CD33 (+), CD 7(+), CD19 (-). These were highlighted in 70–80% of the cells. The diagnosis of AML was confirmed by the presence of ≥80% blasts in the bone marrow examination and the presence of inv (16) as unique genetic abnormalities found to cytogenetics test. The patient was transferred to Department of Hematology to start standard acute myeloid leukaemia's chemotherapy. Since the differential diagnosis included myeloid sarcoma or secondary tumor in association with AML, the patient was candidate to laparoscopy for a precise diagnosis. The DAPT was discontinued to reduce bleeding manifestations. During the hospital stay, the patient's condition steadily deteriorated. He presented haematological complications, such as infection and bleeding, therefore the patient received transfusion of concentrated blood cells and platelets. Then the patient had recurrent episodes of acute pulmonary edema requiring different treatment (non-invasive positive-pressure ventilation, diuretics) to restore organ perfusion, but finally, the patient died of cardio circulatory arrest.

Conclusion: The presence of ascites and tumor masses in a patient with a diagnosis of AML should raise the suspicion of a neoplastic peritoneal involvement, although other possibilities (infection, a secondary tumor, liver disease) must also be rule out. Our case suggests that without systemic management and multidisciplinary work, the diagnosis of myeloid sarcoma in patient with AML is misdiagnosed, that can result in treatment delays and disease progression.