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Case Report

Bone Marrow Metastasis of Rhabdomyosarcoma Mimicking Acute Leukemia: A Case Report

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Abstract

Although it is more common in childhood, rhabdomyosarcoma is an extremely rare soft tissue sarcoma for adults. It originates from mesenchymal cells which were differentiated into striated muscles. Their frequent locations are head-neck, genitourinary system and extremities, respectively. Here, we presented a case of rhabdomyosarcoma mimicking hematological malignancy.

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Introduction

Rhabdomyosarcoma caused bone marrow metastasis cases are among the rarest cases reported in the literature. Similar to the cases reported in the literature, the clinical presentation of our patient mimicked acute leukemia, and the leukoerythroblastosis in the peripheral smear test and the cytopenia in the hemogram raised suspicion of hematological malignancy initially.[1,2] The diagnosis made by immunohistochemical staining in biopsy. The primary tumor field could not be detected in the radiological imaging, and it was determined by rhinoscopy evaluation performed upon patient's anosmia and epistaxis complaints. Here, we reported a case in which we were diagnosed with acute leukemia at admission but later diagnosed as a primary malignancy that metastasized.

Case Report

In December 2018, a 24-year-old female patient, who had not been diagnosed with a chronic disease before, applied our institution's emergency service with syncope, epistaxis and hypermenorrhea complaints. Lymphadenomegaly and organomegaly were not found on physical examination, but ecchymoses with different maturities were found spread on her body. The

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admission hemogram resulted with leukocyte: 5,460 K/µl, neutrophil: 1,520 K/µl, hemoglobin: 10.6 g/dL, and platelet: 13,540 K/µl. Patient's peripheral smear test resulted in slightly leukoerythroblastosis, blastic characterized non-fully differentiated cells and absolute thrombocytopenia. Bone marrow examination and flow cytometric study were decided to be performed with prediagnosis of acute leukemia. Flow cytometric study of bone marrow resulted in blast rate within normal range and non- hematopoietic cell infiltration. At gate CD45, blast rate was 0.4%. Within 87% of the cell group, CD56 expression was strongly positive and CD45 expression was weak. Cranial and thoracoabdominopelvic tomography were performed on patient with suspected bone marrow infiltration, but no pathology was found. In bone marrow biopsy result, neoplastic cells replacing hematopoietic cells in the intertrabecular space contained cells with narrow cytoplasm and mild pleomorphism. Positive staining with desmin, myoglobulin and MSA were observed. Widespread membranous staining with CD56 was observed. Based on these findings, metastatic rhabdomyosarcoma was considered. In the clinical follow-up of patient, whose primary focus was investigated, a mass was detected in the nasal root as a result of rhinoscopy evaluation, which was performed due to the presence of anosmia, gradually increasing nasal obstruction and intermittent epistaxis. Patient was diagnosed with rhabdomyosarcoma, the primary focus of which was accepted as nasal root and had diffused bone marrow metastases, which were shown on PET imaging. Then, patient was referred to oncology department for treatment plan and follow-up procedures.

Discussion

Bone marrow aspiration/biopsy examinations, which are referred to differentiate clinical entities such as anemia, leukopenia or thrombocytopenia, play an essential role in diagnosing, staging and managing the treatment of hematological malignancies and bone marrow metastasized solid tumors. In the initial evaluation, we have considered presence of a hematological malignancy in the foreground. But flow cytometric study provided us the first differential diagnosis. In our case, rhabdomyosarcoma metastasis was detected by bone marrow biopsy performed on patient, who came with thrombocytopenia initially. We aim to emphasize the fact rhabdomyosarcoma presents with bone marrow involvement and mimics lymphoma and leukemias. Still, it is mostly diagnosed by the absence of specific hematopoietic markers.

Conflict of Interests

Authors declare that there are none.

Acknowledgment

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