**LETTER TO THE EDITOR**
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# Diagnosing Myeloid Sarcoma From Peritoneal Fluid

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To the Editor,
Myeloid sarcoma (MS) occurs when immature myeloid cells invade the extra medullary space. It is rare for MS to present with ascites and abdominal mass. In this case report, we present the follow-up and treatment of a patient presenting with an abdominal mass and ascites.
A 16-year-old patient presented with abdominal pain for 10 days and his abdomen was tender and tense. Complete blood count, biochemical tests and sedimentation were normal. Computed tomography (CT) examination revealed lesions consisting of conglomerate lymphadenopathies measuring 75x68x140 mm at the root of the mesentery and 12 cm of fluid in the pelvis. (Figure 1.b-c). Tuberculosis tests of the ascitic fluid were negative, Cytological examination revealed medium-large sized atypical cells containing nuclei with fine/lace nuclear chromatin (Figure 1-a), Flow cytometry analysis of the ascitic fluid demonstrated that 60% of the cells were immature myeloid cells which expressed HLA-DR, CD117 and CD45 (CD34 negative). Trucut biopsy of the mass was also consistent with myeloid sarcoma. Acute leukemia was not considered in bone marrow aspiration (BMA) examination, but inv 16 (p13;q22) was positive in BMA genetic PCR examination.
The patient was started on AML BFM 2019 chemotherapy protocol (1). After the induction treatment, there was a 1 cm reduction in the mass, there was no decrease in ascites fluid, and inv (16) was still positive in the bone marrow performed at this time. Since there was no significant reduction in the mass after induction, the patient was planned to receive five cycles of chemotherapy. ascitic fluid decreased and the mass shrank . Inv (16) positivity on bone marrow became negative before the fourth chemotherapy block. After five cycles of chemotherapy, the mass disappeared completely on magnetic resonance imaging (MRI) (Figure 1.d-e). One year after the initiation of treatment, our patient is in the sixth month of maintenance chemotherapy and is in remission.

Myeloid sarcoma may occur in many parts of the body. Although lymph nodes are reported to be the most frequently involved area, involvement of the mesenteric lymph node is rare, involvement of the abdomen and causing serous effusions are also rare. In a study by Meyer et al. two cases with abdominal involvement and one case with mesenteric involvement were reported in 183 MS cases (2).
Since MS is most commonly associated with AML, related genetic abnormalities are frequently found, usually associated with t(8;21), inv(16) or 11q23 MLL rearrangements (3). Inv(16) has been reported more frequently in patients with intraabdominal MS (4). In our patient, inv (16) was found to be positive in bone marrow. In the study of Zhang et al. it was observed that 17 of 20 patients with MS who were inv (16) positive had abdominal involvement (5).
In this case report, we wanted to emphasize that mesenteric involvement, which is a rare involvement of MS in childhood, should be considered in the differential diagnosis of a child presenting with abdominal mass and ascites, and that MS can be diagnosed in a short time with immunophenotype and cytologic examination of ascitic fluid.

| Abbreviations | |
|---|---|
| MS | myeloid sarcoma |
| AML | acute myeloid leukemia |
| MRI | magnetic resonance imaging |
| CT | computed tomography |
| BMA | bone marrow aspiration |

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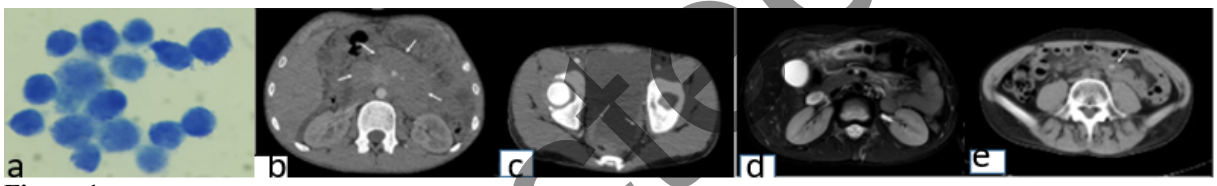


**Figure 1-**

(a) Giemsa-May Grunwalt stain (Giemsa 1/200 dilution 5 minutes stain) Cytology showed medium-large sized atypical cells with containing nucleoli with fine/lacy nuclear chromatin

(b) Axial contrast enhanced CT image showed a homogeneous hypodense mesenteric mass located anterior to the aorta and encasing the superior mesenteric artery (arrows).

(c) Pelvic images revealed massive intrapetioneal fluid and peritoneal thickening (arrows)

(d) Axial fat-saturated T2 weighted MRI,

(e) Axial non-contrast CT. Post-treatment imaging showed no identifiable mass or ascites on MRI. CT revealed tiny mesenteric calcifications due to treatment (arrow)