LETTER TO THE EDITOR

Turk J Hematol 2025;42:329-330

# Diagnosing Myeloid Sarcoma from Peritoneal Fluid

## Peritoneal Sıvıdan Miyeloid Sarkom Tanısı Koymak

Ayşe Özkan Karagenç[1], Ali Ayçiçek[1], Esra Arslantaş[1], Nazlı Gülsüm Akyel[2], Özlem Başoğlu Öner[1]

[1]*University of Health Sciences Türkiye, Başakşehir Çam and Sakura City Hospital, Clinic of Pediatric Hematology and Oncology, İstanbul, Türkiye*
[2]*University of Health Sciences Türkiye, Başakşehir Çam and Sakura City Hospital, Clinic of Pediatric Radiology, İstanbul, Türkiye*

**To the Editor,**

Myeloid sarcoma (MS) occurs when immature myeloid cells invade the extramedullary space. It is rare for MS to present with ascites and abdominal mass. In this letter, we report 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; his abdomen was tender and tense. Complete blood count, biochemical tests, and sedimentation results were normal. Cytological examination revealed medium-large atypical cells containing nuclei with fine/lace nuclear chromatin (Figure 1a). Computed tomography revealed lesions consisting of conglomerate lymphadenopathies measuring 75x68x140 mm at the root of the mesentery and 12 cm of fluid in the pelvis (Figures 1b and 1c). Tuberculosis tests of the ascitic fluid were negative. Flow cytometry analysis of the ascitic fluid demonstrated that 60% of the cells were immature myeloid cells expressing HLA-DR, CD117, and CD45 (CD34-negative). A tru-cut biopsy of the mass was also consistent with MS. Acute leukemia was not considered based on the bone marrow aspiration (BMA) examination, but inv16(p13;q22) was positive according to the polymerase chain reaction genetic examination of the BMA material.

The patient was started on the 2019 Berlin-Frankfurt-Munich chemotherapy protocol for acute myeloid leukemia (AML) [1]. After induction treatment, there was a reduction of 1 cm in the mass with no decrease in the ascites fluid, and inv(16) was still positive according to BMA performed at that time. Since there was no significant reduction in the mass after induction, the patient was scheduled to receive five cycles of chemotherapy. The ascitic fluid then decreased and the mass shrank. The positivity of inv(16) in the bone marrow disappeared before the fourth chemotherapy cycle. After five cycles of chemotherapy, the mass disappeared completely according to magnetic resonance imaging (Figures 1d and 1e). One year after the initiation of treatment, our patient was in remission in the sixth month of maintenance chemotherapy.

MS may occur in many parts of the body. Although lymph nodes are reported to be the most frequently involved area, the involvement of mesenteric lymph nodes is rare, and the involvement of the abdomen with serous effusions is also rare. In a study by Meyer et al. [2], two cases with abdominal involvement and one case with mesenteric involvement were reported from among 183 MS cases.

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]. Positivity

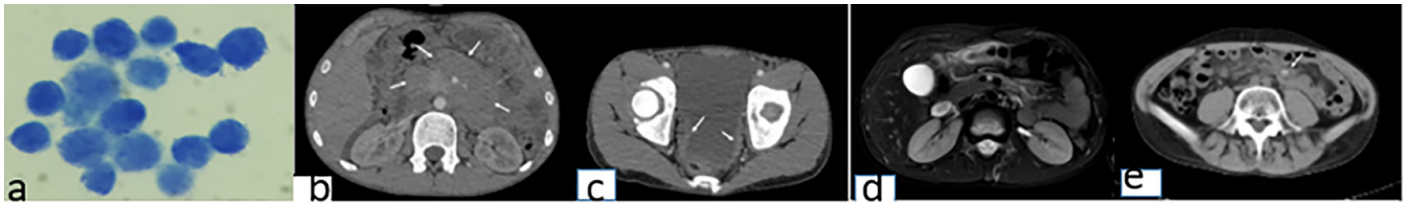


**Figure 1.** (a) Cytological examination with Giemsa-May-Grunwald staining (Giemsa, 1/200 dilution, 5 minutes of staining) showed medium-large atypical cells containing nucleoli with fine/lacy nuclear chromatin. (b) Axial contrast-enhanced computed tomography (CT) imaging revealed a homogeneous hypodense mesenteric mass located anterior to the aorta and encasing the superior mesenteric artery (arrows). (c) Pelvic images revealed significant intraperitoneal fluid and peritoneal thickening (arrows). (d) Axial fat-saturated T2-weighted magnetic resonance imaging (MRI) and (e) axial non-contrast CT performed after treatment showed no identifiable mass or ascites according to MRI, while CT revealed tiny mesenteric calcifications due to treatment (arrow).

of inv(16) has been reported more frequently in patients with intraabdominal MS [4]. In our patient, inv(16) was found to be positive in the bone marrow. In the study by Zhang et al. [5], it was observed that 17 of 20 patients with MS who were inv(16)-positive had abdominal involvement.

With 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 immunophenotyping and cytologic examination of ascitic fluid.

**Keywords:** Myeloid sarcoma, Ascites, Mesentery, inv16(p13;q22)

**Anahtar Sözcükler:** Miyeloid sarkom, Asit, Mesenter, inv16(p13q22)

### Ethics

**Informed Consent:** Written consent was obtained from the patient's mother for the publication of this case report and any accompanying image.

### Footnotes

### Authorship Contributions

Surgical and Medical Practices: A.Ö.K., A.A., E.A., N.G.A., Ö.B.Ö.; Concept: A.Ö.K.; Design: A.Ö.K., A.A., E.A.; Data Collection and Processing: A.Ö.K., A.A., E.A., N.G.A., Ö.B.Ö.; Analysis or Interpretation: A.Ö.K., A.A., E.A., N.G.A., Ö.B.Ö.; Literature Search: A.Ö.K.; Writing: A.Ö.K.

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

**Financial Disclosure:** The authors declared that this study received no financial support.

## References

1. Reinhardt D, Dworzak M, Rasche M. Recommendations for diagnostics, therapy and follow-up care of children and adolescents with Acute Myeloid Leukemia (AML) 2019. Version 1.0_19.07.2019. German Society for Paediatric Oncology and Haematology (GPOH); 2019.
2. Meyer HJ, Pönisch W, Schmidt SA, Wienbeck S, Braulke F, Schramm D, Surov A. Clinical and imaging features of myeloid sarcoma: a German multicenter study. BMC Cancer. 2019;19:1150.
3. Pizzo PA, Poplack DG. Principles and practice of pediatric oncology. 7th ed. Philadelphia, Lippincott Williams & Wilkins, 2015.
4. Samborska M, Barańska M, Wachowiak J, Skalska-Sadowska J, Thambyrajah S, Czogała M, Balwierz W, Kołtan S, Peszyńska-Żelazny K, Wysocki M, Ociepa T, Urasiński T, Wróbel G, Węcławek-Tompol J, Ukielska B, Chybicka A, Kitszel A, Krawczuk-Rybak M, Szmydki-Baran A, Malinowska I, Matysiak M, Mizia-Malarz A, Tomaszewska R, Szczepański T, Chodała-Grzywacz A, Karolczyk G, Maciejka-Kembłowska L, Irga-Jaworska N, Badowska W, Dopierała M, Kurzawa P, Derwich K. Clinical characteristics and treatment outcomes of myeloid sarcoma in children: the experience of the Polish Pediatric Leukemia and Lymphoma Study Group. Front Oncol. 2022;12:935373.
5. Zhang XH, Zhang R, Li Y. Granulocytic sarcoma of abdomen in acute myeloid leukemia patient with inv(16) and t(6;17) abnormal chromosome: case report and review of literature. Leuk Res. 2010;34:958-961.

**Address for Correspondence/Yazışma Adresi:** Ayşe Özkan Karagenç, M.D., University of Health Sciences Türkiye, Başakşehir Çam and Sakura City Hospital, Clinic of Pediatric Hematology and Oncology, İstanbul, Türkiye
**E-mail:** ayseozkankaragenc@gmail.com **ORCID:** orcid.org/0000-0003-4758-3808

**Received/Geliş tarihi:** April 25, 2025
**Accepted/Kabul tarihi:** June 11, 2025
**Epub:** June 11, 2025
**DOI:** 10.4274/tjh.galenos.2025.2025.0156