

12th International Conference on

Pediatric Pathology & Laboratory Medicine

March 15-16, 2017 London, UK



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Chronic myelogenous leukemia with B-lymphoid blasts crisis at presentation: A case report and literature review

Chronic myelogenous leukemia (CML) with B-lymphoid blast crisis at presentation is rare. In this study, we present a case of a 52-year-old female without a prior known history of hematologic malignancy, who was presented with CML with B-lymphoid blast crisis. Review of peripheral blood smears showed moderately increased white blood cells with left-shifted granulocytosis and basophilia. Bone marrow core biopsy demonstrated markedly increased cellularity with marked, left-shifted myeloid hyperplasia. Megakaryocytes were increased with frequent small hypolobated forms. Blasts were increased, comprising 22% of the marrow. The blasts were positive for PAX-5, CD10, CD19, CD34, and TdT, and negative for MPO, consistent with B-lymphoblasts. Quantitative PCR detected BCR-ABL1 transcript (the major breakpoint, p210) at 70.5820% on the International Scale and t(9;22)(q34;q11.2) was detected by cytogenetic study. A diagnosis of CML with B-lymphoid blast crisis at presentation was rendered based on the above findings. Distinguishing a CML with B-lymphoid blast crisis at presentation from a de novo B-acute lymphoblastic leukemia (B-ALL) with t(9;22) often is not easy. The morphological features that point to a CML with B-lymphoid blast crisis rather than a de novo B-ALL with t(9;22) include concurrent presence of basophilia and left-shifted granulocytosis in the blood, and left-shifted myeloid hyperplasia and increased small atypical megakaryocytes in the bone marrow. Among these morphologic features, the presence of small atypical megakaryocytes/micromegakaryocytes in the bone marrow is considered to be most specific, although not all CML in B-lymphoid blast crises have this morphologic feature.

Biography

Hong L Drum has completed her MD from Guangdong Medical University, China. She is a senior Hematopathologist at Genoptix Medical Laboratory, a Novartis company. She has received Joseph J. Kleiner Memorial Award from American Society for Clinical Laboratory Science, USA in 2010. She is certified in Pathology-Hematology by the American Board of Pathology, since 2007 and also certified in Anatomic and Clinical Pathology by the American Board of Pathology, since 2006. She has her publications in several reputed journals.

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