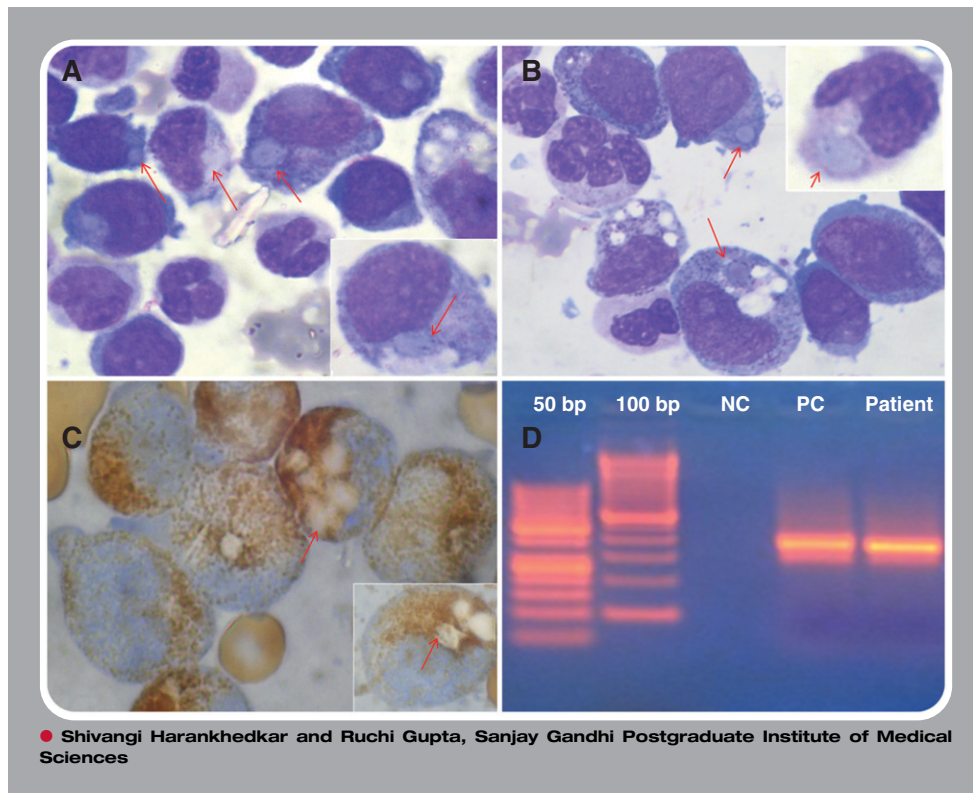


## MPO-negative inclusions and Auer rod-like structures in a case of acute myeloid leukemia with t(8;21)



**A** 7-year-old boy presented with a short history of fever and facial palsy. Laboratory workup revealed 10% blasts in peripheral blood. Blasts and maturing myeloid cells in bone marrow showed distinct myeloperoxidase (MPO)–negative pale waxy cytoplasmic inclusions along with features of dysmyelopoiesis (panels A–C, inclusions highlighted by the arrows; original magnification  $\times 100$ , May Grunwald Giemsa stain [A–B], myeloperoxidase stain [C]). Flow cytometry revealed that the blasts expressed CD33, CD13, CD117, HLA-DR, CD34, MPO, and aberrant CD19. Conventional karyotyping revealed t(8;21) and loss of Y (–Y). Reverse transcription polymerase chain reaction (RT-PCR) revealed *AML1-ETO* fusion transcript (panel D; RT-PCR for *AML1-ETO*; NC, negative control; PC, positive control). Because the patient was lost to follow-up, we did not perform further workup.

Acute myeloid leukemia (AML) with t(8;21) shows a wide spectrum of morphological abnormalities, particularly dyspoiesis, long slender Auer rods, and eosinophilia. Waxy pale cytoplasmic inclusions have rarely been described and form part of the Nucifora score for the morphologic characterization of AML with t(8;21). To the best of our knowledge, the presence of such lamellar stacks simulating MPO-negative Auer rod-like structures has not been reported previously. A possible mechanism for this phenomenon could be MPO enzyme-deficient lysosomes, but confirmation by electron microscopy and enzyme studies is required.



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