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Acute promyelocytic leukemia with normal karyotype initially diagnosed on bone marrow touch imprints

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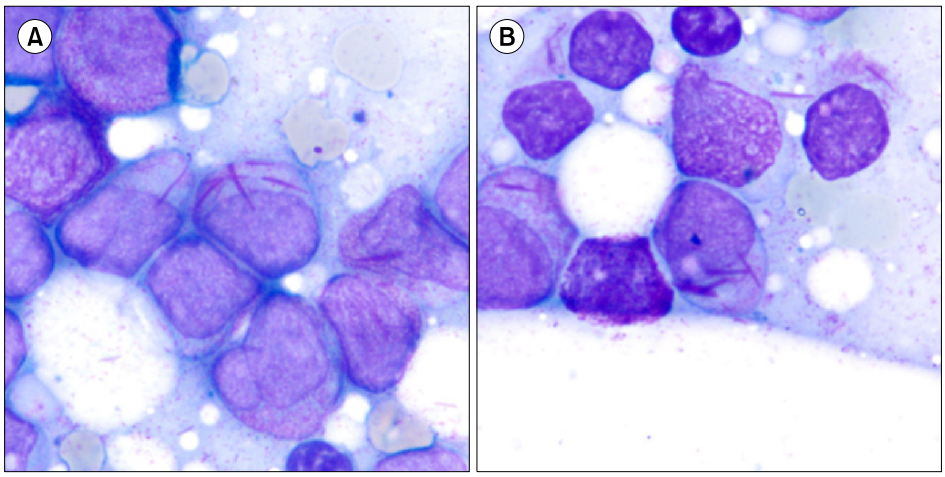

A 26-year-old man visited our hospital for the evaluation of leukopenia, an incidental finding during a routine health examination. His complete blood count values were as follows: leukocytes, 1.09×10^9/L; hemoglobin, 12.3 g/dL; and platelets, 147×10^9/L. Peripheral blood smear showed neutropenia with left-shifted maturation (segmented neutrophils, 34%; lymphocytes, 60%; monocytes, 3%; basophils, 1%; and myelocytes, 2%). Bone marrow (BM) aspirate was a dry tap with unremarkable finding. On touch imprints, however, abnormal promyelocytes with multiple Auer rods, termed "faggot cells", were observed in several fields (**A**, **B**; Wright staining, ×1,000), suggesting acute promyelocytic leukemia (APL). BM biopsy was hypercellular with diffuse infiltration of leukemic cells positive for myeloperoxidase. However, cytogenetic testing showed normal karyotype without t(15;17). Subsequently, reverse transcription-PCR using a re-aspirated specimen was performed, revealing the presence of the *PML/RARA* fusion transcript. No chromosomal abnormalities were found on cytogenetic examination of the re-aspirate specimen. Cases of APL lacking t(15;17) with complex variant rearrangements or submicroscopic insertion have been reported. The latter is considered as cryptic or masked t(15;17), occurring in approximately 5% of cases. The importance of adequate preparation and careful examination of BM touch imprints has been well described in the literature but may be overlooked at times.