Atypical Reactive Changes with Prominent Hematogones and Bone Marrow Fibrosis: A Case Report

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Reactive bone marrow can affect hematopoietic cell lineages, alter normal architecture, and change bone marrow stroma. Therefore, challenges occur in reactive bone marrow that can be confused with neoplastic disease. A 4 years and 7 months old Malay boy who was a carrier of I-cell disease (Mucolipidosis II) presented with persistent bicytopenia (anaemia and neutropenia). Retrospectively, the patient was followed up for a family history of I-cell disease since 6 months of age. The patient was well until the age of 3 years and 9 months, when he was diagnosed with dengue fever. Since then, he was found to have persistent bicytopenia and was frequently hospitalised for fever. Examination revealed hepatomegaly and swelling of the submandibular and inguinal nodes. Peripheral blood film was reported as compatible with underlying viral infection and thrombocytopenia to rule out peripheral consumption. Bone marrow aspirate and trephine showed hypercellular fibrous marrow contributed by increased interstitial polymorphic lymphoid cells infiltrate and scattered lymphoid cells aggregates. The former belong to the B-cell lineage and show an immunoreactivity pattern that tally with polymorphic morphology and consistent with hematogones. The latter are small cells expressing CD3+, with CD4+ predominance without reduced expression of CD2, CD5 and CD7. These T cells are Tdt negative and thus consistent with reactive changes. A combination of morphologic assessment, ancillary tests and clinical context provides the optimal background to distinguish between reactive and neoplastic processes and avoid diagnostic pitfalls. Ultimately, the pathologist must be able to merge the various morphologic and ancillary data into a meaningful diagnosis.

Keywords: Atypical reactive changes, Bone marrow, Neoplasia

DOI: http://dx.doi.org/10.31344/ijhhs.v7i7000.611

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